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Diwygio'r gyfraith

# Regulating Coal Tip Safety in Wales A Consultation Paper



Law Commission

Consultation Paper 255

# **Regulating Coal Tip Safety in Wales**

## **A Consultation Paper**

9 June 2021



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**Topic of this consultation:** This consultation paper evaluates current legislation relating to coal tip safety in Wales and considers options for new Welsh legislation to ensure an integrated and future-proofed regulatory system which adopts a uniform approach to inspection, maintenance and record-keeping throughout the life cycle of all coal tips from creation to abandonment to remedial works.

It makes a number of preliminary proposals and asks whether consultees agree. It also seeks views on more open questions.

**Geographical scope:** This consultation applies to the law of England and Wales, as it applies in Wales.

**Duration of the consultation:** We invite responses from 9 June 2021 to 10 September 2021.

Responses to the consultation may be submitted using an online form at: <https://www.lawcom.gov.uk/project/regulating-coal-safety-tips-in-wales/>. Where possible, it would be helpful if this form was used.

Alternatively, comments may be sent:

By email to [CoalTips@lawcommission.gov.uk](mailto:CoalTips@lawcommission.gov.uk)

OR

By post to The Regulating Coal Tip Safety in Wales team, Law Commission, 1st Floor, Tower, 52 Queen Anne's Gate, London, SW1H 9AG.

If you send your comments by post, it would be helpful if, whenever possible, you could also send them by email.

**Availability of materials:** The consultation paper is available on our website at <https://www.lawcom.gov.uk/project/regulating-coal-safety-tips-in-wales/>.

We are committed to providing accessible publications. If you require this consultation paper to be made available in a different format please email [CoalTips@lawcommission.gov.uk](mailto:CoalTips@lawcommission.gov.uk) or call 020 3334 0200.

**After the consultation:** We will analyse the responses to the consultation, which will inform our final recommendations for reform to Government, which we will publish in a report.

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# Contents

	Page
<b>GLOSSARY</b>	<b>1</b>
<b>CHAPTER 1: INTRODUCTION</b>	<b>5</b>
A brief history of coal mining in Wales	7
This project	10
Next steps	11
Overview of this consultation paper	11
Impact assessment	13
Acknowledgements	13
Project team	13
<b>CHAPTER 2: COAL TIP HAZARDS</b>	<b>14</b>
Instability	14
The history of coal tip slides in South Wales	14
Causes of coal tip instability	19
Types of failure	22
Flooding	25
Pollution	26
Spontaneous combustion	30
Remediation and reclamation of tips	35
<b>CHAPTER 3: MAPPING THE COAL TIPS OF WALES: ACTIVITY STATUS, OWNERSHIP AND RISK CATEGORIES</b>	<b>38</b>
Active mines	38
Operational coal mines in Wales	39
Disused mines	40
Ownership of disused mine tips	41
Early mining	41
Changes in ownership of coal mines and tips as a result of nationalisation and privatisation of the coal industry	41
Tips owned by the Coal Authority	43
Local authority ownership and the Land Reclamation Programme	44
Tips managed by Natural Resources Wales	45

Unknown or fragmented ownership	47
Tips on common land or land with open access rights	47
Distribution of coal tips across local authorities and risk categories: provisional figures	48
Regulatory problems with recently closed mines	51
Inadequate financial provision	51
Shell companies	52
<b>CHAPTER 4: THE ABERFAN DISASTER AND THE MINES AND QUARRIES (TIPS) ACT 1969</b>	<b>53</b>
The Aberfan Disaster and the Disaster Tribunal	53
Parliamentary debates leading to the Mines and Quarries (Tips) Act 1969	55
The Mines and Quarries (Tips) Act 1969	59
The Mines and Quarries (Tips) Regulations 1971	60
The Part 2 regime for disused tips	62
The current regime for tips associated with active mines and quarries	68
Mines Regulations 2014	68
Quarries Regulations 1999	70
<b>CHAPTER 5: OTHER LAW RELEVANT TO COAL TIP SAFETY</b>	<b>72</b>
EU Directives	72
The Mining Waste Directive	72
The Waste Framework Directive	75
The Water Framework Directive	76
Environmental Permitting Regulations	76
The Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009	78
River Basin Management Plans	79
UK legislation of relevance to coal tip safety	79
The Environmental Protection Act 1990	79
The Civil Contingencies Act 2004	82
Welsh legislation of relevance to coal tip safety	84
The Well-being of Future Generations (Wales) Act 2015	84
The Environment (Wales) Act 2016	84
Environmental principles and responsibilities following EU Exit	86
Welsh Government consultation	88
The Environment Bill 2019-2021	90
Implications of EU exit for the reform of coal tip safety law	90
Devolution	90
Implications of devolution for reform of the law relating to coal tip safety	91
<b>CHAPTER 6: CIVIL AND CRIMINAL LIABILITY FOR COAL TIP HAZARDS AT COMMON LAW</b>	<b>92</b>

Common law civil liability	93
The rule in <i>Rylands v Fletcher</i>	93
Reasonable foreseeability of damage in private nuisance	95
Unreasonable use of land in private nuisance	95
Statutory civil liability	97
Common law criminal liability	98
<b>CHAPTER 7: PROBLEMS WITH THE 1969 ACT</b>	<b>99</b>
Problems	99
Loss of specialist skill and experience	99
Local authority resources	99
Cumbersome procedures	100
Lack of power to require or perform maintenance	102
Issues with landowners	102
Unauthorised interferences	103
Clash of regimes	103
Declassification of tips	106
Impact of a tip register	106
Solutions	107
An oversight body	107
Regional approach	108
Inspection	109
Maintenance	109
Restrictions on landowners modifying coal tips	109
Panel of engineers	109
Ownership	109
Alternative uses of the land	110
Long-term view	110
Clash of regimes	110
The need for a new regulatory framework	111
<b>CHAPTER 8: THE INITIAL WORK COMMISSIONED BY THE WELSH GOVERNMENT</b>	<b>112</b>
Initial safety work commissioned by the Welsh Government	112
Data-gathering	112
Walk over inspections	114
Standardised mapping	114
Interim approach to organising tip data	115
Views of the Coal Authority on tip management	116
Inspections	116
Maintenance and remediation options	117
Tip management plan	118
Views on longer-term tip management	119
Longer-term work	119
Next steps	120



<b>CHAPTER 9: OTHER REGULATORY MODELS</b>	<b>121</b>
General	121
The Reservoirs Act 1975	122
Detail of the regulatory framework	123
Comparisons between reservoirs and coal tips	128
Evaluation of the reservoirs regime	129
The Quarries Regulations 1999 and Mines Regulations 2014	131
Mines Regulations 2014	132
Quarries Regulations 1999	133
Appraisal	133
Comparison between Reservoirs Act and the Quarries Regulations 1999/Mines Regulations 2014	134
The Flood and Water Management Act 2010	136
Designation of features	136
Maintenance and management plans	137
Powers to maintain existing drainage systems	139
The contaminated land regime under Part 2A of the Environmental Protection Act 1990	140
Non-native species	141
The Environment (Wales) Act 2016	144
Control of water discharge from mines	144
The Coal Mining Subsidence Act 1991	145
Statutory controls in other jurisdictions	145
 <b>CHAPTER 10: PROVISIONAL PROPOSALS FOR A NEW COAL TIP SAFETY REGIME</b>	 <b>149</b>
General principles	149
Tips associated with operational mines	150
Elements of a new regulatory framework for disused tips	150
The definitions of a tip and of a disused tip	150
The definition of a tip owner	151
A single supervisory body for disused tips	153
Tip register	154
Initial inspection	158
Tip management plans	158
Classification of tips and designation of higher risk tips	160
Responsibility for designated tips	162
Responsibility for lower risk tips	164
Enforcement powers	169
Charging powers	171
Appeals and claims for compensation or contribution	172

Diagram to represent elements of our proposed regulatory framework	174
Panel of engineers	175
Clashes between environmental legislation and tip safety	175
A power of direction?	176
A wider emergency power under the Environmental Permitting Regulations	176
A more collaborative approach	177
Contingency infrastructure	177
A greater range of disposal options for displaced coal tip waste?	177
Reclamation projects	178
<b>CHAPTER 11: CONSULTATION QUESTIONS</b>	<b>181</b>
<b>APPENDIX 1: ACKNOWLEDGEMENTS</b>	<b>191</b>
<b>APPENDIX 2: PHOTOGRAPHS</b>	<b>196</b>
National tip	196
Tylorstown before and after the February 2020 slide	201
The 'Old Smokey' tip at Tylorstown	205

# Glossary

**Abandoned tip:** Under the Mines Regulations 2014, an abandoned tip is a tip associated with a mine that has been abandoned. It becomes an abandoned tip from the date of a notice of abandonment of the mine, after which the 2014 Regulations cease to apply. See also **Disused tip**.

**Active tip:** Under the Mines and Quarries (Tips) Act 1969 an active tip is a tip associated with an active mine or quarry. See also **Closed tip**.

**Adit:** A horizontal passage leading into a mine.

**Attenuation pond:** A pond which acts as a silt trap allowing any suspended sediment within the surface water to settle out (a process called attenuation). The accumulated sediment has to be routinely removed to ensure that the pond remains effective.

**Berm:** An engineered barrier consisting of a horizontal shelf or ledge built into the slope of a tip or sloping wall of an open pit or quarry to improve stability.

**Biplanar slip:** Biplanar slips involve shearing along two planes of differing orientation, with the formation of an upper active wedge of material and a lower passive wedge. The upper wedge displaces the lower wedge and shearing occurs at the tip foundation. Such failures are common in tips where the foundation material is soft and weak.

**British Coal Corporation:** Successor of the National Coal Board, set up under Coal Industry Act 1987, and commonly known as British Coal. Succeeded by the Coal Authority.

**Cavitation collapse:** A localised collapse of underground voids resulting from events such as piping failures, collapsed culverts or underground combustion. General tip stability is not usually affected, except sometimes in the case of lagoon embankments, although sudden collapse may be a source of danger to life if anyone is at the surface.

**Closed tip:** Under the Mines and Quarries (Tips) Act 1969, a closed tip is not on premises deemed to form part of a mine or quarry, but the mine or quarry with which it is associated has not been abandoned and the premises on which the tip is situated continue to be occupied exclusively by the owner of that mine or quarry.

**Coal Authority:** The Coal Authority is an executive non-departmental public body, sponsored by the Department for Business, Energy and Industrial Strategy, a UK Government department. It was established under the Coal Industry Act 1994 and manages the effects of past coal mining, including subsidence damage and mine water pollution.

**Coal Tip Safety Task Force:** Formed by the Welsh Government immediately following the Tylorstown slide on 16 February 2020 to deliver an urgent programme of work to ensure that coal tips across Wales were being managed safely and effectively. The Task Force is led by the Department for Environment and Rural Affairs, a Welsh Government

department. Task Force partners working together with the Welsh Government are the Coal Authority, its sponsoring body the Department for Business, Energy and Industrial Strategy, and the Welsh Office. The technical group working with the Task Force includes Natural Resources Wales, local authorities and the Welsh Local Government Association.

**Coal waste:** The unwanted material produced after saleable coal is separated out from the material extracted from a coal mine in a process of washing and preparation. The material is predominantly shale but also includes other discarded material. The waste is known as refuse in the wider mining industry, and more commonly 'spoil' in coal mining.

**Colliery:** A coal mine and the buildings and equipment associated with it.

**Debris slide:** A type of landslide involving a rapid downward sliding and forward rolling of comparatively dry, unconsolidated earth and rocky debris.

**Disused tip:** A tip which is no longer being tipped upon which is not associated with an operational mine. In other words, this is a tip which is neither an active nor a closed tip under the 1969 Act.

**Drift mine:** An underground mine in which the entry is above water level and generally on the slope of a hill, driven horizontally into the seam.

**Flow slide:** A slide which occurs on a coal tip when the soil mass is transformed into a liquified state as a result of disturbance following saturation. Disturbance may occur due to rotational failure, mining subsidence or vibration from earthquakes, blasting or heavy plant. Collapse of the soil structure takes place, but closer packing of the grains of spoil material is prevented by the viscosity of the water, and liquefaction occurs allowing the spoil to flow downhill as a slurry. Flow slides typically occur in poorly compacted or saturated spoil heaps consisting of sand or silt-sized material, and are a common failure mode in lagoon materials following breaching of the lagoon bank. Flow slides occur rapidly and material can travel significant distances.

**Gabion basket:** A wire cage filled with stones used for engineering and building purposes.

**Heave:** A type of movement on a tip which occurs when tip material slips/becomes unstable and bulges.

**Large raised reservoir:** In Wales, a large raised reservoir is a reservoir that holds or has the potential to hold 10,000 cubic metres of water above ground level.

**LIDAR:** Light Detection and Ranging. A method of accurately modelling the earth's surface using laser light. It produces 3D images of the target object. It is sometimes referred to as active laser scanning.

**Maintenance:** Routine tip maintenance includes the clearing out, re-cutting and improvement of drainage ditches and culverts, and checking and clearing screens designed to capture detritus after heavy rainfall.

**Mud run:** A mud run is a localised failure caused by a rapidly moving flow of water-borne soil having the consistency of mud. This is brought about following heavy rainfall by

flows or issues of water eroding gullies in the side slopes and forming mud runs at the base of the tip.

**Open cast mining:** A mining technique that involves taking minerals, especially coal, from the surface of the ground rather than from passages dug under it.

**Outburst failure:** A failure due to an outburst of groundwater.

**Overburden:** Material composed mainly of rock and soil which is removed in order to access a coal seam or other mineral deposit to make it ready for mining.

**Piping failure:** A localised failure caused by internal erosion within the tip as soil particles are washed out by the passage of water. Collapse due to piping may trigger other forms of failure.

**Pore pressure:** The pressure of the groundwater held within the coal tip in gaps between particles.

**Pyrite:** Iron sulphide (specifically, iron (II) disulphide), also known as fool's gold.

**Receptors:** A feature that could be impacted by a coal tip slide (such as a house, school or road).

**Reclamation:** The process by which derelict, despoiled or contaminated land is brought back into a specified beneficial use.

**Remediation:** The process by which health and safety and environmental risks are reduced to an acceptable level. The aim of coal tip remediation is to ensure the safety of coal tips.

**Restoration bond:** A bond provided by a mining company prior to beginning a mining operation for the purpose of remediation upon the cessation of the mining activity.

**Rotational slide:** A type of slip in which movement takes the form of a rotation about an axis that is generally outside the slope itself.

**Scar:** An area on a tip stripped of vegetation and soil following a slide.

**Scour:** A channel formed when water flows over a surface and removes soil made up of tip material or rock.

**Section 106 agreement:** An agreement made under the Town and Country Planning Act 1990 to provide for the aftercare of a mine following closure. The agreement may include matters such as restoration work, agreed cost and provision for payment by the operator into a restoration fund held by the planning authority in escrow over the lifetime of the mine.

**Senedd:** The democratically elected body which makes legislation for Wales (within certain subject areas). It is known both as the Welsh Parliament and the Senedd Cymru. In this consultation paper we refer to it by its commonly used Welsh name, the Senedd.

**Settlement:** The downward movement of a structure due to subsidence of the ground beneath.

**Shear strength:** The resistance of the material to slippage or failure.

**Slurry:** A mixture of solids denser than water suspended in liquid.

**Spoil:** See **Coal waste**.

**Surface mining:** See **Open cast mining**.

**Surface slip:** A type of slip in which the failure is parallel to the front face of the tip. Such slides tend to take place in dry, cohesionless, granular material tipped at or above the angle of repose, and may occur as the surface layer dries out and temporary cohesion is lost.

**Tailings lagoon:** A lagoon into which tailings are placed.

**Tailings run:** A run-off of tailings from the surface of the tip.

**Tailings:** A mixture of fine mineral particles and water left after the coal washing process.

**Task Force:** See **Coal Tip Safety Task Force**.

**Tip:** A pile built of accumulated waste material removed during mining. In the case of a coal tip, this is the accumulated material which remains after saleable coal has been separated from the unwanted material with which it has been extracted.

**Tips response team:** The Coal Authority team undertaking an urgent review of all the coal tips in Wales in work commissioned by the Welsh Government.

**Toe:** The point where the slope (also known as the batter) of a tip meets original ground level.

**Trash screen:** A screen/grid on a tip designed to capture detritus after heavy rainfall.

**Water transverse system:** A network of drainage ditches running horizontally into a central channel.

# Chapter 1: Introduction

- 1.1 In early February 2020, for the second time in little more than a week, an atmospheric depression began to form over the United States.<sup>1</sup> After bringing blizzard conditions to the midwestern US and heavy snowfall to New England, the cyclone emerged into the North Atlantic. On 11 February the Meteorological Office assigned the name Dennis to the emerging storm. By the weekend of 15-16 February, the storm spanned the Atlantic Ocean and brought high winds and heavy rain to much of the United Kingdom, particularly Wales and the western part of England. On 16 February the Meteorological Office issued a red weather warning, indicating danger to life, for South Wales;<sup>2</sup> amber warnings covered much of the rest of Wales as well as parts of England and Scotland. At least five people died in the UK as a result of the storm, two of them in South Wales.<sup>3</sup>
- 1.2 The strongest wind gust associated with the storm (91 mph) was recorded at Aberdaron in north west Wales on Saturday 15 October. Between 100 and 150 mm (approximately four to six inches) of rain fell across parts of the Brecon Beacons and the South Wales valleys.<sup>4</sup> Natural Resources Wales recorded the equivalent of half a month's rainfall in 12 hours – 87 mm of rain – and the equivalent of 85% of an entire month's rainfall in 72 hours – 170 mm of rain – at their site at Crai Resr in Powys.<sup>5</sup>
- 1.3 On Sunday 16 February the rainfall precipitated a slide of spoil from a disused coal tip on the side of the Rhondda Fach valley opposite the village of Tylorstown in Rhondda Cynon Taf.<sup>6</sup> Composed of an estimated 60,000 tonnes of spoil, the slide blocked the river, broke a foul sewer, buried a strategic water main under several metres of debris

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<sup>1</sup> Storm Dennis, which the depression became, had been preceded by Storm Ciara which unleashed heavy rain and high winds on the British Isles on 9 February 2020. See Met Office, *Storm Ciara*, <https://www.metoffice.gov.uk/weather/warnings-and-advice/uk-storm-centre/storm-ciara> (last visited 15 March 2021).

<sup>2</sup> See Met Office, *Storm Dennis triggers red rain warning* (2020), <https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2020/storm-dennis-triggers-red-rain-warning> (last visited 15 March 2021).

<sup>3</sup> See Met Office, *Storm Dennis*, <https://www.metoffice.gov.uk/weather/warnings-and-advice/uk-storm-centre/storm-dennis> (last visited 15 March 2021) and [https://en.wikipedia.org/wiki/Storm\\_Dennis](https://en.wikipedia.org/wiki/Storm_Dennis) (last visited 15 March 2021).

<sup>4</sup> M Kendon, *Storm Dennis* (2020) *Met Office National Climate Information Centre*, [https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/interesting/2020/2020\\_03\\_storm\\_dennis.pdf](https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/interesting/2020/2020_03_storm_dennis.pdf) (last visited 15 March 2021).

<sup>5</sup> Natural Resources Wales, *February 2020 Floods in Wales: Flood Event Data Summary* (2020), <https://cdn.cyfoethnaturiol.cymru/media/692376/february-2020-floods-in-wales-flood-event-data-summary-high-resolution-eng.pdf?mode=pad&rnd=132477535790000000> (last visited 15 March 2021).

<sup>6</sup> Originally called Pendyrus, the area received its English name from Alfred Tylor, who purchased the mineral rights to Pendyrus Farm in 1872: see “Tylorstown” (2018) *Rhondda Cynon Taf Libraries Heritage Trail*, <http://webapps.rctcbc.gov.uk/heritagetrail/english/rhondda/tylorstown.html> (last visited 12 May 2021). Photographs in the text reproduced from “Further information about the Tylorstown landslide” (18 February 2020) *American Geophysical Union Blogosphere*, <https://blogs.agu.org/landslideblog/2020/02/18/tylorstown-landslide-2/> (last visited 30 March 2021) as tweeted by NPAS South West Region. Additional photographs of Tylorstown and two neighbouring tips are in appendix 2.

and covered a footpath and cycle path. Fortunately, the tip being on the opposite side of the river from the village, there were no human casualties. The cost of the immediate work to remove the material from the river was £2.5 million. The cost of dealing permanently with the material left by the slide is estimated at between £10 and £12 million.<sup>7</sup>



- 1.4 It was the Tylorstown slide – to be followed in December 2020 by a further slide at Wattstown, a few miles further down the Rhondda Fach valley – that led indirectly to our undertaking the present project.<sup>8</sup>
- 1.5 Immediately following the slide the First Minister and the Secretary of State for Wales commissioned an urgent programme of work to ensure that coal tips across Wales were being managed safely and effectively. Welsh Ministers held a series of meetings which led to the creation of a Coal Tip Safety Task Force, led by the Welsh Government's Department for Environment and Rural Affairs, to deliver the programme. The other Task Force partners are the Coal Authority, its sponsoring body the UK Department for Business, Energy and Industrial Strategy, and the Welsh Office. The technical group working with the Task Force includes Natural Resources Wales, local authorities and the Welsh Local Government Association.
- 1.6 Welsh Ministers identified a number of initial strategic objectives. These included:
  - (1) establishing a central register of coal tip sites with coherent and consistent risk categorisations, clarity on responsibilities, as well as minimum standards for monitoring and management controls and oversight and enforcement of these;
  - (2) developing a robust evidence base with partners to ensure decisions on tips are based on the best available data;
  - (3) ensuring the policy and legislative framework is fit for purpose and future-proofed; and

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<sup>7</sup> Information from Lori Frater, Department for Environment and Rural Affairs, Welsh Government, and see Rhondda Cynon Taf County Borough Council, *Tylorstown landslide – remediation process*, <https://www.rctcbc.gov.uk/EN/GetInvolved/TylorstownLandslip/Tylorstownlandslip%E2%80%93remediationprocess.aspx> (last visited 15 March 2021).

<sup>8</sup> Wattstown takes its name from the colliery owner Edmund Hannay Watts. The slide occurred on 18 December 2020: see Rhondda Cynon Taf County Borough Council, *Wattstown tip landslide update – December 23 (2020)*, <https://www.rctcbc.gov.uk/EN/Newsroom/PressReleases/2020/December/WattstownTiplandslipupdate%E2%80%93December23.aspx> (last visited 4 March 2021).



- (4) improving public confidence in relation to coal tip management.
- 1.7 As part of this work, the Welsh Government commissioned the Coal Authority, as a body able to offer technical advice, resources and operational expertise, to carry out an immediate review of all coal tips in Wales on behalf of the Welsh Government.
- 1.8 The Law Commission was formally invited by the Welsh Government in October 2020 to undertake an independent review of coal tip safety legislation and to provide recommendations for reform of the law;<sup>9</sup> the project commenced on 2 November 2020.
- 1.9 The Task Force is continuing to develop policies in parallel to the work of the Law Commission, with input from across the Welsh Government.

## A BRIEF HISTORY OF COAL MINING IN WALES

- 1.10 Coal mining began in Wales in the Bronze Age and increased in scope following the Roman conquest of Britain. Coal mining on a larger scale began in the medieval period, with the digging of small shafts or adits. In the early years of the industrial revolution in the eighteenth century, coal was used to smelt metal ores for the production of lead, copper and iron. From 1850 to 1920 there was a dramatic growth in the mining industry and increasing mechanisation.<sup>10</sup>
- 1.11 The location of mines also changed over this period. Mines in the eighteenth century were situated in areas where the coal could be found closer to the surface, as the technology did not permit the driving of deep shafts. For this reason the volume of material extracted from the pits was relatively small. This changed from the 1840s, when deeper shafts were sunk into the South Wales Coalfield to extract steam coal, a type of coal suitable for railways and steamships. This served to support the explosive growth of industry, worldwide exports and the expansion of the British Empire. With the promise of prosperity came people, and the population of the mining valleys boomed. The Rhondda had a population of 1,631 in 1831. This had grown to 163,000 by 1921.<sup>11</sup>
- 1.12 Mining brought disaster as well as wealth. By 1870 over one thousand lives were being lost in mining accidents each year.<sup>12</sup> Between 1885 and 1949, mining accounted for 25% of all occupation-related deaths in Britain, with South Wales the most dangerous coal field to work in.<sup>13</sup> For example, the National Colliery, at what

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<sup>9</sup> Pursuant to Law Commissions Act 1965, s 3(1)(ea).

<sup>10</sup> Meeting with Dr Ben Curtis, Postdoctoral Research Fellow in Labour and Social History at the University of Wolverhampton. For the early origins of Welsh coal mining, see “The origins of coal mining in Wales” (15 August 2008) *BBC Wales History*, [https://www.bbc.co.uk/wales/history/sites/themes/society/industry\\_coal01.shtml](https://www.bbc.co.uk/wales/history/sites/themes/society/industry_coal01.shtml) (last visited 12 May 2021).

<sup>11</sup> T Mansel Hodges, “The Peopling of the Hinterland and Port of Cardiff 1801 – 1914” in W E Minchington (ed), *Industrial South Wales, 1750-1914: Essays in Welsh Economic History* (1969).

<sup>12</sup> UK Parliament, *Coal Mines*, <https://www.parliament.uk/about/living-heritage/transformingsociety/livinglearning/19thcentury/overview/coalmines/> (last visited 25 March 2021).

<sup>13</sup> B Curtis, “The South Wales Miners’ Federation and the perception and representation of risk and danger in the coal industry, 1898-1947” (2014) *Morgannwg*, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4582420/> (last visited 4 March 2021).

came to be known as Wattstown, lost 39 men and boys to a disaster in 1885 and 119 men and boys to a second disaster in 1905.<sup>14</sup> In 1913 the Senghenydd colliery disaster killed 439 miners, including eight 14-year old boys, and two hundred women became widows. Even in years without disasters, deaths and injuries were common. For example, in 1937, a year with no major disasters, 175 men and boys were killed and 25,947 injured in South Wales alone.<sup>15</sup> Those who survived their time in the mines often developed respiratory diseases, osteoarthritis of the knee, noise-induced hearing loss and vibration white finger.<sup>16</sup>

- 1.13 Industrialised coal mining also brought with it, and left behind it, a hazard to mining communities in the form of coal tips. These are composed of the accumulated material which remains after saleable coal has been separated from the unwanted material with which it has been extracted.<sup>17</sup> For geographical reasons they are a particular problem in the South Wales valleys. As the scale and depth of mining increased, the tips were formed and grew higher up the valleys, while excavation for the purposes of coal extraction destabilised the ground beneath them.<sup>18</sup> This combination of factors caused increasingly frequent landslides, and the coal tips themselves also began to slip. The world learned of their power to cause devastation in 1966 in Aberfan, when a coal tip slide claimed the lives of 144 people, 116 of them children. The Aberfan disaster and its aftermath, in the form of legislation in 1969, are considered in chapter 4. The more recent slides at Tylorstown and Wattstown have been touched on earlier in this chapter.
- 1.14 Coal industry nationalisation in the 1940s took the coal mining industry into public ownership and control and saw the creation of the National Coal Board (NCB), the statutory corporation created to run the nationalised industry. The process took place in two stages. On 1 July 1942, by virtue of section 3 of the Coal Act 1938, the fee simple in all coal and mines of coal in the UK was vested in the Coal Commission. Subsequently, section 1 of the Coal Industry Nationalisation Act 1946 established the NCB. The fee simple in coal and mines of coal was transferred from the Coal Commission to the NCB.<sup>19</sup> By section 1(1) of the Act the NCB was charged with the duties of:

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<sup>14</sup> See <http://webapps.rctcbc.gov.uk/heritagetrail/english/rhondda/wattstown.html> (last visited 25 March 2021).

<sup>15</sup> B Curtis, "The South Wales Miners' Federation and the perception and representation of risk and danger in the coal industry, 1898-1947" (2014) Morgannwg, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4582420/> (last visited 4 March 2021).

<sup>16</sup> Neil Stockdale, "Coal Past: the human and environmental cost" (2009) *Environmental Law and Management* 125. Legislative attempts to make mines safer for those working in them began with the Mines and Collieries Act 1842. This followed a report by the Royal Commission on the employment of women and children in mines, which "caused widespread dismay at the depths of human degradation that were revealed". It was common for children, both girls and boys, aged eight or younger to be employed. The Act prohibited all underground work for women and girls, and for boys aged under ten. A series of Acts followed over the course of the nineteenth and early twentieth centuries which aimed to make the industry safer.

<sup>17</sup> JR Leeming, HM Chief Inspector of Mines, "The Aberfan Disaster and its Legacy", paper presented at the Aberfan Disaster 50th Anniversary Commemorative Conference in Cardiff on 21 October 2016.

<sup>18</sup> A Taboga, "The development of integrated high-resolution geophysical, photogrammetric and GPS surveying applied to landslides in the South Wales Coalfield" (2011) *Cardiff University*, <https://orca.cf.ac.uk/54058/1/U585580.pdf> (last visited 4 March 2021).

<sup>19</sup> Coal Industry Nationalisation Act 1946, s 5 and sch 1.

- (1) working and getting the coal in Great Britain, to the exclusion (save as in this Act provided) of any other person;
- (2) securing the efficient development of the coal mining industry; and
- (3) making supplies of coal available, of such qualities and sizes, in such quantities and at such prices, as may seem to them best calculated to further the public interest in all respects, including the avoidance of any undue or unreasonable preference or advantage.<sup>20</sup>

1.15 The 1960s saw the beginning of a sharp decline in coal mining in the UK as the coal produced became uncompetitive in the global market, and demand shifted to new sources of energy such as gas, oil and nuclear power. The consequent pit closures were controversial and regarded as a matter for consultation between the NCB and miners' unions. In the early days of nationalisation, colliery closures were dealt with under local consultative structures, but in 1949 the NCB accepted the right of the union to take an appeal to national level. In 1967 a new procedure for closure was agreed; it was superseded in 1972 by a further agreement between the NCB and the mineworkers' unions under which a review meeting was to be held quarterly in each area to identify pits with particular problems with a view to discussing constructive ways of solving them. When a pit was closed, the whole process from the area review meeting to closure date normally took about five and a half months.<sup>21</sup>

1.16 Nevertheless, of the nearly one thousand collieries acquired by the NCB on nationalisation,<sup>22</sup> 767 were closed between 1947 and 1983. Production contracted from a post-war peak of 211 million tons in 1957 to 105 million tons in 1983.<sup>23</sup> In October 1992, British Coal<sup>24</sup> announced the impending closure of 31 of the 50 remaining deep mines, though some of the closures were initially delayed by judicial review.<sup>25</sup> By the time the industry was privatised in 1994, production had reduced to just under 21 million tons and the number of deep mine collieries had reduced to 16.<sup>26</sup>

1.17 The Coal Industry Act 1994 provided for the restructuring of the coal industry. British Coal's economic assets, with the exception of unworked coal, were privatised. The administrative functions of British Coal were transferred to the Coal Authority, by

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<sup>20</sup> *R v British Coal Corporation ex p Vardy* [1993] ICR 720, [1993] IRLR 104.

<sup>21</sup> Taken from the judgment in *R v British Coal Corporation, ex p Vardy* [1993] ICR 720, [1993] IRLR 104.

<sup>22</sup> Department of Energy and Climate Change, *Appraisal report from Department of Energy and Climate Change relating to records of the former National Coal Board (latterly British Coal Corporation) – a statutory corporation created in 1947 and wound up in 2004* (2014), <https://www.nationalarchives.gov.uk/documents/information-management/british-coal-corporation-appraisal-report.pdf> (last visited 25 March 2021).

<sup>23</sup> William Ashworth with Mark Pegg, *The History of the British Coal Industry, Vol. 5: 1946–1982, The Nationalized Industry* (1986) pp 672–5.

<sup>24</sup> The National Coal Board was renamed the British Coal Corporation, commonly known as British Coal, in 1987.

<sup>25</sup> See *R v British Coal Corporation, ex p Vardy* [1993] ICR 720, [1993] IRLR 104.

<sup>26</sup> Above. See also T Macalister et al, "The demise of UK deep coal mining: decades of decline" (2015) *Guardian*, <https://www.theguardian.com/business/ng-interactive/2015/dec/18/the-demise-of-uk-deep-coal-mining-decades-of-decline> (last visited 4 March 2021).

which they are still performed. These functions include the regulation of licensed coal mine operators, managing and mitigating the effects of past coal mining, including subsidence damage, and the holding of all remaining liabilities which are not able to be sold or given. The Coal Authority owns the majority of unworked coal in the UK and some residual land. It operates as a non-departmental public body sponsored by the Department for Business, Energy & Industrial Strategy.<sup>27</sup>

- 1.18 As of today, there are five coal mines in Wales, three of which are currently producing coal.<sup>28</sup> Planning Policy Wales stipulates that coal can only be mined for non-energy purposes, such as water filtration and cement or steel production.<sup>29</sup>

## THIS PROJECT

- 1.19 The terms of reference for the Law Commission's project agreed with the Welsh Government are:

To review the law governing coal tips in Wales and consider options for a modern legislative framework, in line with Wales' existing legislation, including the Well-being of Future Generations (Wales) Act and Environment (Wales) Act, for regulating their safety.

To recommend a coherent, standardised and future-proofed system for identifying, recording, inspecting and maintaining coal tips throughout their lifecycle, identifying an overarching set of duties and adopting a uniform approach to risk assessment.

- 1.20 It was agreed in particular that the project would:

- (1) consider the current ownership and management of coal tips in Wales, drawing on the work of the Coal Tip Safety Task Force as needed;
- (2) evaluate current legislation relating to the safety of coal tips, from the perspective of human health and safety and of environmental impact, identifying gaps, inconsistencies and approaches which are unhelpful or have become outdated;
- (3) identify options for alternative regulatory models to be adopted in Wales;
- (4) identify the features needed to ensure that any proposed system is able to provide effective enforcement, and in particular a rapid and coordinated response when emergency works become necessary;

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<sup>27</sup> See "About us", *Coal Authority*, <https://www.gov.uk/government/organisations/the-coal-authority/about>. Information also provided to the Law Commission by the Coal Authority in pre-consultation meetings.

<sup>28</sup> For further detail, see para 3.9 below.

<sup>29</sup> See Edition 10 of Planning Policy Wales. Planning Policy Wales sets out national policy guidance for making planning decisions. Information provided by Jennifer Pride and Richard Griffiths, Energy Division, Department for Environment and Rural Affairs, Welsh Government. The National Planning Policy Framework (England) has no corresponding stipulations, provided that the proposal is "environmentally acceptable": see Ministry of Housing, Communities and Local Government, *National Planning Policy Framework* (2019), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/810197/NPPF\\_Feb\\_2019\\_revised.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf) (last visited 4 March 2021). For further discussion of the operational mines, see ch 3 below.

- (5) consider how other nations of the UK, and other countries with a significant history of coal mining, particularly in the EU, approach coal tip safety, where these provide useful comparison and to the extent that such information is readily available; and
- (6) consider the impact of EU law and the effect on the existing regulatory framework of leaving the EU.

1.21 It was recognised that the project was taking place against the background that addressing coal tip safety is a priority; the Welsh Government and the Coal Tip Safety Task Force are engaged in remediation and other urgent work to mitigate the immediate risk posed by coal tips in Wales. It was agreed that the project would supplement that response by proposing a coherent and principled legislative basis for dealing with that risk in the longer term. In order to deliver that objective in an expedited timeframe, its scope was expressly limited in three important respects.

- (1) The project would focus on systematic, long term legislation to tackle the safety risk posed by coal tips; urgent or priority remediation is a matter for Government and the Task Force.
- (2) The project would focus on the law governing coal tips only.
- (3) The project would not review wider environmental law concerns except insofar as they are directly relevant to regulating the safety risk posed by coal tips.

## NEXT STEPS

1.22 It was agreed that the project would adopt an expedited timescale of 13 to 15 months. The publication of this consultation paper will be immediately followed by a three-month public consultation. We will produce a final report making recommendations for new legislation by early 2022.

## OVERVIEW OF THIS CONSULTATION PAPER

- 1.23 This consultation paper sets out, in **chapter 2**, an account of the coal tip slides which have occurred in Wales since the nineteenth century, and provides an outline of the principal dangers that tips pose to human life and health and to the environment. An understanding of these hazards is essential to the design of an effective regulatory regime for coal tip safety.
- 1.24 **Chapter 3** looks at who owns coal tips in Wales, and how this pattern of ownership developed. It considers the extent to which tips are disused and maps their distribution across local authorities and risk categories.
- 1.25 Having set out this background, the paper progresses in the next three chapters to look at law that is relevant to coal tip safety. **Chapter 4** gives a brief account of the Aberfan disaster and its aftermath, including the influence of the findings of the inquiry into the disaster on the framing of the Mines and Quarries (Tips) Act 1969 (the 1969 Act). The debates in Parliament leading up to the Act are examined to shed light on the intentions and assumptions which lay behind the legislation. The chapter then

looks in detail at the regulatory framework created by the Act, in relation both to tips associated with operational mines and to disused tips.

- 1.26 **Chapter 5** reviews other legislation of relevance to coal tip safety, including the retained EU law and the Environmental Protection Act 1990 that have shaped the environmental permit system, as well as other environmental legislation, including the overarching principles laid down in Welsh legislation to guide policy-making. It also looks at environmental legislation that is under consideration in Westminster and Cardiff in consequence of EU exit; and devolved legislative competence. **Chapter 6** considers coal tip safety from the perspective of possible civil and common law criminal liability of landowners for hazards arising from coal tips on their property.
- 1.27 The next section of the paper looks at problems with the current regulatory structure and ways in which it might be improved. In **chapter 7** we report the views that have been expressed to us in a series of pre-consultation meetings with local authorities with responsibilities under the 1969 Act and other environmental stakeholders. They shed light on the gaps and limitations in the 1969 Act regime. In summary, these seem to us to be that:
- (1) the Act does not create any duty to ensure the safety of coal tips;
  - (2) it does not create any power to intervene unless there is a concern that a tip is presently unstable;
  - (3) in consequence it does not provide a power to intervene to carry out the kind of maintenance work that would stop a tip becoming unstable;
  - (4) it does not provide powers in respect of hazards other than instability; and
  - (5) the powers that it does create are fragmented across local authorities, leading to inconsistent safety standards and risk classifications.
- 1.28 In **chapter 8** we look at the work carried out by the Coal Authority tips response team at the request of the Welsh Government since the Tylorstown slide. The chapter also refers to the views of the Coal Authority in relation to tip management, as a stakeholder with experience of managing its own tips. It considers the extent to which elements of the work commissioned could form part of the solution to the problems with the current regulatory regime that we have identified.
- 1.29 In **chapter 9** we look at legislative approaches drawn from the regulation of other environmental hazards as possible alternative models. We consider where elements of these other models might assist to redress the problems with the 1969 Act, but additionally where the characteristics of a particular hazard may make it unhelpful to draw an analogy with disused tips.
- 1.30 **Chapter 10** draws together the different perspectives we have considered in the preceding chapters and the provisional views we have formed as to the gaps and limitations of the current regulatory framework. It presents options for a new regulatory framework for disused coal tips. These include provisional proposals as to the features that should be included in a replacement regime and areas for discussion

where we have not been able to formulate a provisional proposal. We ask for views in a series of consultation questions.

- 1.31 Our provisional view is that we should not recommend any alteration of the regime governing the few remaining tips in Wales that are associated with operational mines. Stakeholder views and our review of the law in this area indicate that, while issues arise in relation to the operation of the controls in practice, the existing regulatory regime is comprehensive and is not in need of revision. We envisage that, as those mines become disused, and the legislation governing active tips ceases to apply to them, they would fall under our proposed regime.
- 1.32 There is a glossary of technical terms at the front of this paper. Appendix 2 contains some photographs illustrating coal tip problems and remedies.

## **IMPACT ASSESSMENT**

- 1.33 The Law Commission produces impact assessments in respect of its reform proposals. We are publishing alongside this consultation paper a preliminary impact assessment of the options for reform we have put forward. This draws on the early indications given to us by stakeholders as to where efficiencies may be gained by a reform of the law relating to coal tip safety. We invite consultees to comment and, where possible, contribute to the evidence base for this assessment. After consultation concludes, and we formulate our reform recommendations, we expect to publish a final impact assessment along with our report.

## **ACKNOWLEDGEMENTS**

- 1.34 Our thanks go to all those who have assisted us with the preparation of this consultation paper. We are grateful for the work, time and careful thought they have generously contributed to help shape our understanding both of the law in this area and the reality of the work needed on the ground to ensure coal tip safety. We attach a list of the people and organisations who have met with us or helped us during the pre-consultation phase of the project in appendix 1 to this paper.

## **PROJECT TEAM**

- 1.35 The following members of the Public Law and Law in Wales team have contributed to this paper: Henni Ouahes (team manager), Lisa Smith (team lawyer) and Poppy Jones (research assistant).

## Chapter 2: Coal Tip Hazards

- 2.1 This chapter describes the principal coal tip dangers to human life and health and to the environment: coal tip instability, flooding caused by coal tips, pollution arising from tips, and spontaneous combustion of tips. An understanding of these hazards will inform the identification of an effective regulatory regime for coal tip safety.
- 2.2 A small minority of the 2,000 or more coal tips in Wales have been categorised as potentially hazardous to life or property.<sup>30</sup> But even seemingly innocuous accumulations of buried spoil concealed under vegetation<sup>31</sup> have the potential to cause harm. Slides of spoil have been identified to us as the greatest of the risks involved,<sup>32</sup> but it is necessary to consider whether and how the legislative response should address all the major hazards. This chapter addresses each in turn.

### INSTABILITY

#### The history of coal tip slides in South Wales

- 2.3 The geography of South Wales makes the area particularly prone to landslides on account of heavy rainfall and the steepness of the valleys. This geography also led to spoil tips being located on steep slopes above areas of human activity, as the bottom of the valleys generally contained rivers, settlements, roads and railways as well as the mine heads themselves. Mining in the nineteenth and twentieth centuries reactivated many dormant landslides.<sup>33</sup>
- 2.4 Mining causes subsidence as a result of the voids left when coal seams are worked; and the tipping of spoil increases the strain on the land below. In this way spoil tips can contribute to slides of the underlying land as well as of the deposited spoil. In a paper published in 1990, Siddle and Bentley highlighted that most landslides in the South Wales coalfield can be “ascribed to the deleterious effects of human interference at old landslide sites”. Modelling techniques have shown that the strains caused by mining can promote movement.<sup>34</sup>
- 2.5 Apart from landslides caused by mining activities, coal tips can themselves slide as a result of heavy rainfall, poor drainage or subsidence beneath the coal tip. Siddle, Wright and Hutchinson researched coal tip slides in South Wales and found that

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<sup>30</sup> The provisional figures compiled for the Welsh Government have categorised 294 tips as Category C and D. See ch 8.

<sup>31</sup> See the photographs in appendix 2.

<sup>32</sup> Coal Authority.

<sup>33</sup> SP Bentley and HJ Siddle, “The evolution of landslide research in the South Wales Coalfield” (1990) 101 *Proceedings of the Geologists’ Association* 47, <https://vdocuments.site/the-evolution-of-landslide-research-in-the-south-wales-coalfield.html> (last visited 2 March 2021).

<sup>34</sup> Above.



between 1898 and 1967 there had been twenty-three major coal tip failures.<sup>35</sup> They only included rapid failures in their research. They concluded:

The exploitation of the South Wales Coalfield, particularly from the last quarter of the nineteenth century onward, was accompanied by numerous instances of instability within spoil heaps and their foundation materials. Sudden failures which were sufficiently rapid to overwhelm property and services and, in some instances, to threaten life, occurred on at least twenty-three occasions, details of which are provided. It is believed that these included sixteen flow slides, five debris slides and two failures caused by outbursts of groundwater.<sup>36</sup> At five sites, debris flow was a secondary failure mechanism. The locations of these failures are mostly clustered in those parts of the coalfield with the highest relief and with the highest rainfall, although antecedent rainfall conditions for the failures were variable. Most are shown to be associated with active tipping faces, but one flow slide is believed to have occurred on a tip four years after its abandonment and an outburst failure on a tip fifteen years old.<sup>37</sup>

## 2.6 The twenty three tip slides are listed below:<sup>38</sup>

Date	Site	Code†	Grid Ref	Valley	Principal reference
1898	National	NA	ST 023940	Rhondda Fach	Anon 1898
1909	Pentre	PE	SS 974960	Rhondda Fawr	Knox 1927; Halcrow 1979a, 1987
1910	Craig-y-Duffryn	CD	SO 036002	Cynon	Anderson & Trigg 1976; Halcrow 1981
1911	Maerdy	MA	SS 970991	Rhondda Fach	Knox 1927; Halcrow 1973a
1925	Cefn Glas	CG	ST 073973	Cynon	National Coal Board 1970a
1926	Bedwellty	BE	SO 155057	Sirhowy	Knox 1927; National Coal Board, 1969
1928	Fforchaman	FF	ST 005987	Cynon	Halcrow 1968a, 1973b
1928	Rhondda Main	RM	SS 939885	Ogmore	Halcrow 1971
1931	Abergorchi	AB	SS 963985	Rhondda Fawr	Anon 1931a
1935	Fforchaman	FF	ST 005987	Cynon	Halcrow 1968a, 1973b
1939	Cilfynydd	CF	ST 089936	Taff	Brynmor-Davies 1940; Bishop <i>et al.</i> 1969; Halcrow 1972, 1973c, 1992
1943	Glenrhondda	GL	SS 918983	Rhondda Fawr	Halcrow 1968b, 1974
1944	Aberfan	AF	SO 063008	Taff	Anon 1968; Bishop <i>et al.</i> 1969
1947–1960	Nantewlaeth	NL	SS 863981	Afan	Halcrow 1979b; National Coal Board 1975
1960	Parc	PA	SS 939956	Rhondda Fawr	Halcrow 1968c 1969
1960	Fernhill	FH	SN 926011	Rhondda Fawr	National Coal Board 1968b
1963	Aberfan	AF	SO 065007	Taff	Anon 1968; Bishop <i>et al.</i> 1969
1963	Mynydd Corrwg Fechan	MC	SN 883003	Corrwg Fechan	Halcrow 1979c; National Coal Board 1967
1964	Mynydd Corrwg Fechan	MC	SN 883003	Corrwg Fechan	Halcrow 1979c
1965	Mynydd Corrwg Fechan	MC	SN 883003	Corrwg Fechan	Halcrow 1979c
1965	Parc	PA	SS 937956	Rhondda Fawr	Halcrow 1968c, 1969
1966	Aberfan	AF	SO 065007	Taff	Bishop <i>et al.</i> 1969; Halcrow 1975
1967	Mynydd Corrwg Fechan	MC	SN 883003	Corrwg Fechan	Halcrow 1979c

† Code refers to sites shown in Fig. 1.

<sup>35</sup> HJ Siddle, MD Wright and JN Hutchison, "Rapid failures of colliery spoil heaps in the South Wales coalfield" (1996) 29 *Quarterly Journal of Engineering Geology* 103, <https://www.semanticscholar.org/paper/Rapid-failures-of-colliery-spoil-heaps-in-the-South-Siddle-Wright/ca3203afce60e8e14fab97df980b54aa7cf0f39f/figure/10> (last visited 2 March 2021).

<sup>36</sup> Forms of coal tip slide are discussed in paras 2.23 to 2.30 below.

<sup>37</sup> HJ Siddle, MD Wright and JN Hutchison, "Rapid failures of colliery spoil heaps in the south Wales coalfield" (1996) 29 *Quarterly Journal of Engineering Geology* 103, <https://www.semanticscholar.org/paper/Rapid-failures-of-colliery-spoil-heaps-in-the-South-Siddle-Wright/ca3203afce60e8e14fab97df980b54aa7cf0f39f/figure/10> (last visited 2 March 2021).

<sup>38</sup> Table adopted with permission from HJ Siddle, MD Wright and JN Hutchison, "Rapid failures of colliery spoil heaps in the South Wales coalfield" (1996) 29 *Quarterly Journal of Engineering Geology* 103, <https://www.semanticscholar.org/paper/Rapid-failures-of-colliery-spoil-heaps-in-the-South-Siddle-Wright/ca3203afce60e8e14fab97df980b54aa7cf0f39f/figure/10> (last visited 2 March 2021).

## 2.7 The coal tip slides studied included:

- (1) the National coal tip slide in Wattstown in 1898, which destroyed a retaining wall, six houses, and livestock;<sup>39</sup>
- (2) the Pentre coal tip slide in 1909 which destroyed five houses and killed a child;<sup>40</sup>
- (3) the Craig-y-Dyffryn coal tip slide in 1910 which blocked a canal and railway line;<sup>41</sup>
- (4) the Bedwellty coal tip slide which reached a school in 1926;
- (5) the Rhondda Main coal tip slide which slid over a stone wall embankment, destroyed telegraph poles and destroyed fifty yards of a railway line in 1928;<sup>42</sup>
- (6) the Abergorchi coal tip slide in 1931 which travelled 610 metres and entered a colliery yard, filling the boiler house and leaving barely enough steam to return the 700 miners who were underground at the time to the surface;<sup>43</sup>
- (7) the Fforchaman coal tip slide which destroyed a road and diverted a river in 1935;<sup>44</sup>
- (8) the Cilfynydd coal tip slide which cut a power line, blocked a main road, filled a canal, blocked a river, covered a railway, and entered sewage works in 1939;<sup>45</sup>

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<sup>39</sup> "Landslip at Wattstown", *Pontypridd Chronicle*, 4 November 1898, <https://papuraunewydd.llyfrgell.cymru/view/3813686/3813694> (last visited 30 March 2021).

<sup>40</sup> This is also mentioned in "The Pentre Landslide", *Evening Express and Evening Mail*, 8 February 1909, <https://newspapers.library.wales/view/4200159/4200161/38> (last visited 2 March 2021), "The Rhondda Landslide", *The Weekly Mail*, 13 February 1909, <https://papuraunewydd.llyfrgell.cymru/view/3379382/3379389/166/landslide> (last visited 30 March 2021), <http://www.womenandwar.wales/browse.php?order=&page=28> (see Annie Mary Slade) (last visited 2 March 2021) and M Johnes, "The Aberfan disaster is just one facet of the Welsh coal tragedy" *The Conversation*, <https://theconversation.com/the-aberfan-disaster-is-just-one-facet-of-the-welsh-coal-tragedy-66880> (last visited 2 March 2021).

<sup>41</sup> "Aberdare Landslide", *Cardiff Times and South Wales Weekly News*, 24 December 1910, <https://papuraunewydd.llyfrgell.cymru/view/3416346/3416354/154/landslide> (last visited 30 March 2021).

<sup>42</sup> D Price, *Coal Cultures: Picturing Mining Landscapes and Communities* (2020).

<sup>43</sup> D Giles and J Griffiths, *Geological Hazards in the UK: Their Occurrence, Monitoring and Mitigation* (2020) p 106.

<sup>44</sup> British Paramount News, *South Wales: Landslide close to village in Cwmamman 1935* (1935), <https://www.britishpathe.com/video/VLVAOD94HSEANTGMFN747ABHEPTC-SOUTH-WALES-LANDSLIDE-CLOSE-TO-VILLAGE-IN-CWMAMMAN/query/Landslide> (last visited 26 March 2021).

<sup>45</sup> SP Bentley, MCR Davies, M Gallup, "The Cilfynydd flow slide of December 1939" (1998) 3 *Quarterly Journal of Engineering Geology and Hydrogeology* 273, <https://pubs.geoscienceworld.org/qjegh/article-abstract/31/4/273/336424/The-Cilfynydd-flow-slide-of-December-1939?redirectedFrom=fulltext> (last visited 2 March 2021).

- (9) the Mynydd Corrwg Fechan coal tip slide that blocked a river in 1963; and
- (10) the Aberfan disaster in 1966 that killed 144 people, including 116 children.<sup>46</sup>
- 2.8 There have been other coal tip failures not referred to in the study. A second slide at Pentre in 1916 destroyed a row of cottages and a skating rink.<sup>47</sup> Proceedings were brought by various parties against the colliery company that had been tipping spoil on the side of the hill where the landslide occurred.<sup>48</sup> It was found that the landslide had been caused by the company's negligent tipping, particularly as it had not created a drainage system for the tips. The company was also liable under the rule in *Rylands v Fletcher*.<sup>49</sup>
- 2.9 In the debate in Parliament following the Aberfan disaster of 1966 David Gibson-Watt, the MP for Hereford, referred to:
- tip slips on Mynydd Merthyr, which could all have been seen by those in charge. In 1944 a rotational slip on tip 4 was followed by a flow slide; between 1947 and 1951 a rotational slip on Tip No. 5; in 1963 a rotational slide on Tip No. 7 followed by a flow slide. Between 1964 and October 1966 there were further slipping movements on Tip No. 7. There were also the other tip slides at Tymawr and Cilfynydd, from the neighbouring valleys.<sup>50</sup>
- The Tymawr slide mentioned was due to a failure of a tailings lagoon at the foot of a tip.<sup>51</sup>
- 2.10 Following the Cilfynydd coal tip slide in 1939, a memorandum had been produced by Powell Duffryn with precautions to prevent tips sliding.<sup>52</sup> These were as follows.
- (1) The height of a tip should be limited to avoid overloading the supporting ground.

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<sup>46</sup> The Aberfan disaster is considered more fully in paras 4.3 to 4.11 below.

<sup>47</sup> SP Bentley and HJ Siddle, "The evolution of landslide research in the South Wales Coalfield" (1990) 101 *Proceedings of the Geologists' Association* 47, <https://vdocuments.site/the-evolution-of-landslide-research-in-the-south-wales-coalfield.html> (last visited 2 March 2021).

<sup>48</sup> *A-G and others v Cory Bros & Co Ltd* [1921] 1 AC 521, [1921] 1 WLUK 139. For further proceedings see *Kennard v Cory Bros & Co Limited* [1922] 1 Ch 265, [1922] 3 WLUK 142.

<sup>49</sup> (1868) LR 3 HL 330, [1868] 7 WLUK 83. Civil liability for coal tip incidents is discussed in ch 6.

<sup>50</sup> *Hansard* (HC) 26 August 1967, vol 751, col 1920, <https://hansard.parliament.uk/Commons/1967-08-26/debates/caedc787-ddd3-4685-bf76-64170b319d12/AberfanDisaster> (last visited 2 March 2021).

<sup>51</sup> Tailings are a mixture of fine mineral particles and water. See Report of the Tribunal appointed to inquire into the Disaster at Aberfan on October 21<sup>st</sup>, 1966, <http://www.mineaccidents.com.au/uploads/aberfan-report-original.pdf> (last visited 4 March 2021).

<sup>52</sup> Report of the Tribunal appointed to inquire into the Disaster at Aberfan on October 21<sup>st</sup>, 1966, <http://www.mineaccidents.com.au/uploads/aberfan-report-original.pdf> (last visited 4 March 2021). Powell Duffryn Associated Collieries Ltd had been formed in 1935 to acquire the property of the Powell Duffryn Steam Coal Co Ltd and of Welsh Associated Collieries Ltd: see <https://archiveshub.jisc.ac.uk/search/archives/54813a01-3233-3693-845e-cd184826a322> (last visited 25 March 2021).

- (2) Where a slide would cause damage to property, no tip over 20 feet high should be placed on a hillside unless the ground is a compact gravel or of better quality than this.
- (3) The advancing tip should be so aligned, along a sloping surface, that water draining off the ground above it can be collected, if necessary, by a system of drains cut in the ground, and led past and clear of the tip. Along the uphill advancing edge of the tip no bays or recesses should be formed in which water can collect.
- (4) On the dip side of the tip, deep drains (not less than 18 inches) should be cut leading downhill to prevent water accumulating and to keep the ground dry.
- (5) Tipping should never be extended over springs of water, whether continuous or intermittent, or over-bogged and waterlogged land.

2.11 This document was never distributed, and the practices suggested never adopted. However, after the Tymawr slide in 1965, the divisional Chief Engineer of the National Coal Board (NCB) discovered the 1939 document and adopted it, adding his own recommendations regarding tailings (that they should not be tipped and instead contained within enclosures). This memorandum was circulated to the Area Chief Engineers with a suggestion that they examine their tips. Significantly, this memorandum never reached the Area Manager in charge of the Merthyr Vale Colliery which tipped above Aberfan, nor the London headquarters of the NCB.<sup>53</sup>

2.12 Between 1969 and 1989 there were no reported “falls of ground” attributable to the collapse of a spoil tip, but “dangerous occurrences” continued. Twelve such occurrences on NCB tips were reported to the Mines Inspectorate in 1970, and three in 1971.<sup>54</sup> In 1973, a coal tip slide struck a row of houses in Cwmaman. The residents could not be safely returned, and eventually the houses had to be demolished.<sup>55</sup> In total there were 74 dangerous occurrences across the UK involving spoil tips between 1969 and 1989, with one in three involving damage to property, though no loss of life was reported.<sup>56</sup>

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<sup>53</sup> Report of the Tribunal appointed to inquire into the Disaster at Aberfan on October 21<sup>st</sup> 1966, <http://www.mineaccidents.com.au/uploads/aberfan-report-original.pdf> (last visited 4 March 2021).

<sup>54</sup> G McKechnie Thompson and S Rodin, “Colliery Spoil Tips – After Aberfan: Discussion” (1973) *Institution of Civil Engineers*, <https://www.icevirtuallibrary.com/doi/pdf/10.1680/icep.1973.4702> (last visited 2 March 2021).

<sup>55</sup> N Bevan, “The entire Valleys street demolished to prevent another Aberfan” (2020) *Wales Online*, <https://www.walesonline.co.uk/news/wales-news/entire-valleys-street-demolished-prevent-17534531> (last visited 2 March 2021).

<sup>56</sup> British Geological Survey and Environment Agency, *The nature of waste associated with closed mines in England and Wales* (2014), <http://nora.nerc.ac.uk/id/eprint/10083/1/OR10014.pdf>, citing DETR 1999, “Stability in surface mineral workings and tips, Department of the Environment Transport and the Regions, Mineral Planning Guidance 5” (London: DETR) (last visited 2 March 2021).

- 2.13 There was a coal tip slide in 1981 at Abernant colliery.<sup>57</sup> In 2011 a remediated coal tip slipped into the playground and classrooms of a school in Tredegar. Fortunately, it happened outside school hours and no one was hurt.<sup>58</sup>
- 2.14 Increased rainfall has had a significant impact on coal tips.<sup>59</sup> Old drainage systems, which have often fallen into disrepair, are inadequate to handle the amount of water falling on them.<sup>60</sup> During Storm Callum in 2018, the centre of a coal tip at Tower Colliery in the Cynon Valley collapsed, only 600 metres away from houses.<sup>61</sup> The council found that the collapse was a “scour” and did not constitute a landslide.<sup>62</sup> The intense rainfall was said to have exceeded the capacity of the surface water controls, and the run-off contributed to flooding of a major road. Tower Colliery had closed in 2008, and the tip had undergone restoration the previous year, in 2017.
- 2.15 In February 2020, during Storm Dennis, a number of coal tip slides occurred. The worst was in Tylorstown, where an estimated 60,000 tonnes of waste slid down the mountainside into a river.<sup>63</sup> Fortunately, there were no fatalities. Other slides occurred at the same time in Clydach Vale, on the railway line to Aberdare, Wattstown and Pontygwaith. In December 2020, Wattstown suffered a slide of 2,000 tonnes of material.<sup>64</sup>

### Causes of coal tip instability

- 2.16 A coal tip is likely to slide or fail if the disturbing forces (forces that promote sliding) are bigger than the resisting forces (forces that resist sliding).<sup>65</sup> An example of a disturbing force is water pressure in the tip.<sup>66</sup> The factor of safety of a tip is equal to the ratio of resisting forces to disturbing forces: the higher the factor, the safer the tip. If the factor is below one, the disturbing forces are stronger than the resisting forces. Richards et al have set out suggestions for minimum factors of safety based on the

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<sup>57</sup> MD Wright, “The distribution and engineering significance of superficial deposits in the Upper Clydach Valley, South Wales” (1983) 16 *Quarterly Journal of Engineering Geology and Hydrogeology* 319, <https://qjgeh.lyellcollection.org/content/16/4/319> (last visited 2 March 2021).

<sup>58</sup> T Kelsey and T Heath, “Mine memorial saves school in slurry landslide” (2011) *The Independent*, <https://www.independent.co.uk/news/uk/mine-memorial-saves-school-in-slurry-landslide-1561121.html> (last visited 2 March 2021).

<sup>59</sup> See further paras 2.18 and 2.19 below.

<sup>60</sup> Rhondda Cynon Taf County Borough Council, *Strategic Flood Assessment, section 5*, <https://www.rctcbc.gov.uk/EN/Resident/PlanningandBuildingControl/LocalDevelopmentPlans/LDPEvidenceBase/aseLibraryandAnnualMonitoringRe/RelateddocumentsEvidenceBase/EB59b.pdf> (last visited 4 March 2021).

<sup>61</sup> T Deacon, “Storm Callum coal tip ‘collapse’ raises fear over safety at Tower Colliery site” (2018) *Wales Online*, <https://www.walesonline.co.uk/news/wales-news/storm-callum-coal-tip-collapse-15297720> (last visited 2 March 2021).

<sup>62</sup> Above.

<sup>63</sup> See para 1.3 above.

<sup>64</sup> Rhondda Cynon Taf County Borough Council, *Wattstown tip landslip update – December 23 (2020)*, <https://www.rctcbc.gov.uk/EN/Newsroom/PressReleases/2020/December/WattstownTipLandslipupdate%E2%80%93December23.aspx> (last visited 4 March 2021).

<sup>65</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 188.

<sup>66</sup> Above.

design of the tip and the potential impact of failure of the tip. An important factor in deciding the minimum factor of safety is the shear strength (or resistance to slippage) of the coal tip.<sup>67</sup>

2.17 Water is a particularly important risk factor. Water has the potential to impact tip stability in numerous ways:<sup>68</sup>

- by reducing the strength of the material in the tip or the material on which the tip is founded;
- by increasing the weight of tip material thereby providing additional disturbing forces;
- by generating water pressures in the tip, thereby reducing the effective shear strength of the tip material; and
- by generating seepage pressures leading to piping (internal erosion).

2.18 Rainfall is thus a significant cause of coal tip slides. A number of coal tip slides, such as at Cilfynydd in 1939, have coincided with heavy rainfall.<sup>69</sup> As a result of climate change, the amount of rain falling on the South Wales coalfields has increased by 13% since the 1960s, and has also shifted towards the winter months, meaning that rainfall is less spread out throughout the year.<sup>70</sup> The current predictions are for this increase to continue.<sup>71</sup>

2.19 Globally, the 2018 Intergovernmental Panel on Climate Change *Special Report on Global Warming of 1.5 C* refers to substantial evidence that global warming has already resulted in increases in the frequency, intensity and/or the amount of heavy precipitation in regions which include northern Europe, and will lead to further such

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<sup>67</sup> Above.

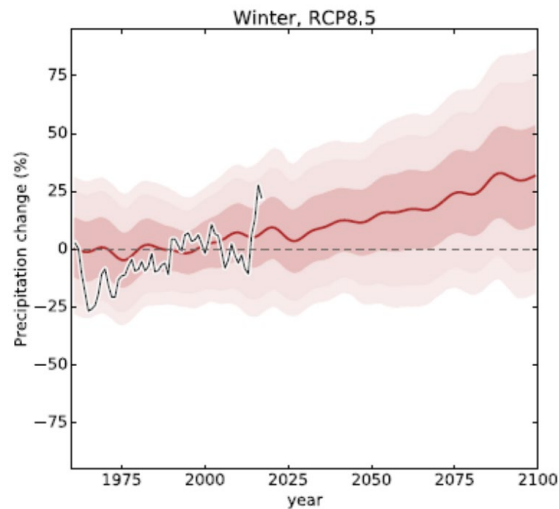
<sup>68</sup> Above.

<sup>69</sup> SP Bentley, MCR Davies, M Gallup, "The Cilfynydd flow slide of December 1939" (1998) 3 *Quarterly Journal of Engineering Geology and Hydrogeology* 273, <https://pubs.geoscienceworld.org/qjegh/article-abstract/31/4/273/336424/The-Cilfynydd-flow-slide-of-December-1939?redirectedFrom=fulltext> (last visited 2 March 2021).

<sup>70</sup> Forest Research, *Recorded Changes in the Climate of Wales*, <https://www.forestresearch.gov.uk/research/climate-change-adaptation/adapting-forests-and-woodlands-in-wales-to-a-future-climate/recorded-changes-in-the-climate-of-wales/> (last visited 2 March 2021). For projections of future increases in Wales, see Committee on Climate Change, *UK Climate Change Risk Assessment 2017 Evidence Report: Summary for Wales* (2017), <https://www.theccc.org.uk/wp-content/uploads/2016/07/UK-CCRA-2017-Wales-National-Summary.pdf> (last visited 2 March 2021).

<sup>71</sup> Committee on Climate Change, *UK Climate Change Risk Assessment 2017 Evidence Report: Summary for Wales* (2017), <https://www.theccc.org.uk/wp-content/uploads/2016/07/UK-CCRA-2017-Wales-National-Summary.pdf> (last visited 2 March 2021).

increases.<sup>72</sup> The figure below shows changes in winter rainfall for the UK since 1975, as well as predictions for the increase in winter rainfall until 2100.<sup>73</sup>



2.20 Anything that increases the disturbing forces of a tip will make it less stable. Richards et al summarise other causes of tip instability as:

- (1) additional loading on the top edge of a slope;
- (2) steepening of the slope due to excavation, erosion or mining subsidence;
- (3) removal of support at the toe of the slope by excavation or water erosion;
- (4) disturbance of the tip at its foundations;
- (5) internal erosion within the tip; and
- (6) spoil heap combustion (this may cause the formation of voids which could result in local collapse).

2.21 The experts we spoke with in the preparation of this consultation paper agreed that almost all tip slides were caused either by faults in their original construction or by problems with drainage. Some older tips have no formalised drainage system. They were simply built by tipping material onto open, often sloping, ground.<sup>74</sup> In addition, more modern tips, or older tips which have been re-profiled, are engineered structures

<sup>72</sup> Intergovernmental Panel on Climate Change, *Special Report on Global Warming of 1.5 C* (2018), <https://www.ipcc.ch/sr15/> (last visited on 2 March 2021).

<sup>73</sup> UKCP18, *National Climate Projections* (2018), <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-overview-slidepack-march21.pdf> (last visited 22 March 2021). The projections are based on the Representative Concentrations Pathway 8.5, which models for radiative forcing of 8.5 watts per metre square by 2100.

<sup>74</sup> Meeting with Paul Maliphant, member of the Welsh Government Expert Group on Coal Tip Safety, and Tim Marples, Coal Authority.

with a design life.<sup>75</sup> They were not engineered to withstand the recent heightened level of rainfall. The effect of the increased rainfall is to reduce their design life.<sup>76</sup>

- 2.22 The impact on tip stability of inadequate drainage is aggravated by erosion. The felling of trees that have grown on coal tips can impact on their stability as tree roots act to anchor the soil. Wildfires that kill the vegetation on a tip also have an impact. There were wildfires on both Tylorstown and Wattstown over the years before the 2020 tip slides occurred.<sup>77</sup>

### Types of failure

- 2.23 Coal tip slides are a unique type of landslide. They are composed of coal waste, which is different from natural rock and soil.<sup>78</sup> They are also distinct because of the possibility of spontaneous combustion (and some coal tip slides can be of hot or burning spoil).<sup>79</sup> The causes of coal tip slides are often different from the causes of landslides. However, the causes may interact. Some coal tips have been formed in the vicinity of historic geological landslides. One example is of three coal tips and a quarry tip that have been tipped just below a geological landslide.<sup>80</sup> The geological landslide slipped in January 2021 onto the quarry tip. The interaction of landslides and coal tip slides can be very complicated.
- 2.24 There are different types of tip failure. These can be rotational slips, surface slips, biplanar slips, flow slides, piping failure, cavitation collapse, mud runs or settlement and heave.<sup>81</sup> Of these, rotational slips and flow slides are the most significant in terms of risk to life and property.<sup>82</sup>
- 2.25 In a rotational slip, movement takes a form of rotation about an axis that is generally outside the slope itself.<sup>83</sup> The strength of the forces that a rotational slip can exert on the underlying land are illustrated in the effects of a rotational slip that occurred in a tip in Hatfield Colliery, South Yorkshire in February 2013. The pressure of the slide displaced a row of growing trees and raised the soil beneath the adjoining railway line by some 5 metres, as depicted below.<sup>84</sup>

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<sup>75</sup> The design life of a structure is the period of time during which it is expected by its designers to work within its specified parameters.

<sup>76</sup> Meeting with Tim Marples, Coal Authority.

<sup>77</sup> Craig Hope, South Wales Fire and Rescue.

<sup>78</sup> Meeting with Professor Karen Hudson-Edwards, Camborne School of Mines, University of Exeter.

<sup>79</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 216. Spontaneous combustion is discussed at paras 2.50 to 2.68 below.

<sup>80</sup> At Pentre; meeting with Lori Frater, Department of Environment and Rural Affairs, Welsh Government.

<sup>81</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 191.

<sup>82</sup> Meeting with Tim Marples, Coal Authority.

<sup>83</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993), p 216.

<sup>84</sup> Photograph reproduced with the permission of the Coal Authority.





- 2.26 Rotational slips can precipitate flow slides. Flow slides are generally the most severe type of slide, as the material can travel long distances. They occur when the pore pressure inside the tip increases so much that the particles become independent and the material behaves like a slurry instead of a solid. Aberfan and Tylorstown are both examples of flow slides:

Flow slides occur when the soil mass is transformed into a liquified state as a result of disturbance following saturation. Disturbance may occur due to rotational failure, mining subsidence or vibration from earthquakes, blasting or heavy plant. Collapse of the soil structure takes place, but closer packing of the grains of spoil material is prevented by the viscosity of the water, and liquefaction occurs allowing the spoil to flow downhill as a slurry. Flow slides typically occur in poorly compacted or saturated spoil heaps consisting of sand or silt sized material, and are a common failure mode in lagoon materials following breaching of the lagoon bank. Flow slides occur rapidly and material can travel significant distances.<sup>85</sup>

- 2.27 Although these are the most important types of slide for the purposes of this consultation paper, it is useful to understand other types of tip failure. These are set out below.

- (1) In the case of surface slips, the failure is parallel to the front face of the tip:

Such slides tend to take place in dry, cohesionless, granular material tipped at or above the angle of repose, and may occur as the surface layer dries out and temporary cohesion is lost.<sup>86</sup>

- (2) Biplanar slips “involve shearing along two planes of differing orientation, with the formation of an upper active wedge of material and a lower passive wedge. The upper wedge displaces the lower wedge and shearing occurs at the tip

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<sup>85</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 192.

<sup>86</sup> Above, p 191.

foundation. Such failures are common in tips where the foundation material is soft and weak”.<sup>87</sup>

- (3) A piping failure is a localised failure caused by internal erosion within the tip as soil particles are washed out by the passage of water leaving a tubular void. Collapse due to piping may trigger other forms of failure.<sup>88</sup>
- (4) A cavitation collapse is a localised collapse of underground voids created by events such as piping collapse, collapse of culverts or underground combustion. General tip stability is not usually affected, except sometimes for lagoon embankments, although sudden collapse may be a source of danger to life if anyone is at the surface.<sup>89</sup>
- (5) A mud run is a localised failure caused by a rapidly moving flow of water-borne soil having the consistency of mud. This is brought about following heavy rainfall by flows or issues of water creating gullies in the side slopes and forming mud runs at the base of the tip.<sup>90</sup>

2.28 Settlement and heave may occur to varying degrees within different parts of a tip, sometimes giving rise to differential movement.<sup>91</sup> Settlement occurs as a result of loading. Collapse settlement may sometimes occur as a result of a reduction in strength of a material following saturation.

2.29 Heave may take place for a variety of reasons, such as:

- (1) rotational failure;
- (2) shear failure of weak material in the tip foundations;
- (3) upward seepage pressures;
- (4) following removal of surcharge loading, for example when a tip is removed;
- (5) chemical changes of the tip materials;
- (6) the action of frost; and
- (7) rehydration of desiccated clay, for example following the removal of trees.<sup>92</sup>

2.30 Richards et al suggested that “existing tips originally formed by tipping over high faces but which stand with slopes less than about 20° are likely to have been unstable at

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<sup>87</sup> Above, p 192.

<sup>88</sup> Above.

<sup>89</sup> Above, p 193.

<sup>90</sup> Above.

<sup>91</sup> Settlement is the downward movement of a structure due to subsidence of the ground beneath. Heave is a type of movement on a tip which occurs when tip material becomes unstable and bulges.

<sup>92</sup> Above, p 194.

some time in the past, and may still be unstable”.<sup>93</sup> Tip stability in South Wales is therefore affected by the steep slopes which characterise the topography of the area.

## FLOODING

- 2.31 Tips can also cause or contribute to flooding. The mechanisms by which they do this include the way in which they change the landscape, their lack of vegetation (and therefore decreased ability to hold water), the impact of tip drainage on water courses and (where run-off water contains solid particles) the siltation of rivers causing floodplains.<sup>94</sup>
- 2.32 TEXMIN<sup>95</sup> is an EU funded research project consisting of nine institutions from six European countries (including Camborne School of Mines, part of the University of Exeter) studying the impact of climate change and extreme weather events on areas in Europe affected by mining activity. This involves using climate projections and modelling to identify and quantify impacts brought about by increases in precipitation, temperature and sudden changes in atmospheric pressure. These will focus on issues such as minewater, gas emissions and structural stability.
- 2.33 An element of this project involves the study of the impact of increased rainfall on coal tips in the UK. This includes looking at the geochemical composition of the tip and water run-off (which could relate to stability), as well as the impacts relating to flooding.<sup>96</sup>
- 2.34 In the decades preceding the tip slide disaster, Aberfan was regularly flooded in a way that put local residents at risk. Between 1952 and 1965 eleven major flooding events occurred. The floodwater was filthy and left a black slimy residue. The residents complained regularly and attributed the flooding to a drainage issue with the tips. Because of the flooding, children had to walk to school over the tips, which was extremely dangerous due to the ropeways and haulage tram. Despite many years of complaints from residents, the flooding was only remedied after the disaster, when the NCB built a culvert to divert the water coming off the tips into the River Taf.<sup>97</sup>
- 2.35 When, later on, the tips were removed from the mountainside above Aberfan, tip material was moved to Grove Field near the village. The area, which ran alongside the River Taf, was filled and raised by between ten and twelve feet in height.<sup>98</sup> This in turn caused major flooding to adjacent houses, which had to be evacuated in 1979 – with

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<sup>93</sup> Above, p 188.

<sup>94</sup> Meeting with Professor Karen Hudson-Edwards, Camborne School of Mines, University of Exeter, and see <https://www.netregs.org.uk/environmental-topics/water/more-ways-to-prevent-water-pollution/managing-silt-and-sediment-in-discharges-from-quarries-or-mines/> (last visited 25 March 2021).

<sup>95</sup> “TEXMIN” is derived from “The impact of EXtreme Weather events on MINing operations”: see <https://www.gig.eu/en/international-projects/texmin> (last visited 17 May 2021).

<sup>96</sup> Meeting with Professor Patrick Foster and Professor John Coggan, Camborne School of Mines, University of Exeter. For further information on the TEXMIN project, see <https://www.gig.eu/en/international-projects/texmin> (last visited 25 March 2021).

<sup>97</sup> Report of the Tribunal appointed to inquire into the Disaster at Aberfan on October 21<sup>st</sup>, 1966, <http://www.mineaccidents.com.au/uploads/aberfan-report-original.pdf> (last visited 2 March 2021).

<sup>98</sup> *Arscott and Ors v The Coal Authority and Anr* [2004] EWCA Civ 892, [2005] Env LR 6, para 17.

some residents being rescued in dinghies and boats – and again in 1998. The residents later brought a claim in nuisance against the Coal Authority,<sup>99</sup> arguing that the raising of the land was the cause of the flooding. The Coal Authority and Merthyr Council conceded that the flooding was caused by the raising and filling of the land, but escaped liability as it was found not to have been a foreseeable consequence of the raising and filling. Further, had it been foreseeable, Laws LJ explained that the “common enemy” rule would have applied, and the Coal Authority would therefore still not have been liable.<sup>100</sup>

- 2.36 Flood events are happening regularly in South Wales and underground mining features are also contributing to this, for example with the recent collapse of a mine shaft in Skewen.<sup>101</sup>

## POLLUTION

- 2.37 CL:AIRE<sup>102</sup> explain that many of the worst quality waters in England and Wales are caused by drainage from spoil tips:

The Environment Agency recently concluded, as part of its River Basin Characterisation exercise, that some 1,800 km of England and Wales’ watercourses were “at risk” from mining-related pollution. Many of the worst quality waters arise as drainage from spoil heaps, wherein the processes of sulphide mineral oxidation and dissolution which are the root cause of mining-related pollution, are particularly vigorous.<sup>103</sup>

- 2.38 The most common pollutants released by coal tips are acidity, iron, manganese, aluminium and sulphate.<sup>104</sup> Because coal tips are long-lasting structures, this is a persistent form of pollution. Drainage from tips can remain polluted for centuries.<sup>105</sup> Further:

The metal contaminants associated with mine water pollution will persist in the environment if not removed and, even in those mine waters with the very highest metal concentrations, recovery and re-use has not proven economically feasible to date.<sup>106</sup>

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<sup>99</sup> *Arscott and Ors v The Coal Authority and Anr* [2004] EWCA Civ 892, [2005] Env LR 6.

<sup>100</sup> *Arscott and Ors v The Coal Authority and Anr* [2004] EWCA Civ 892, [2005] Env LR 6, paras 53 and 62. See further paras 6.13 to 6.15 below.

<sup>101</sup> L Clements, “Mine shaft ‘blow out’ likely flooded Skewen village - Coal Authority” (2021) *Wales Online*, <https://www.walesonline.co.uk/news/wales-news/mine-shaft-blow-out-likely-19682313> (last visited 3 March 2021).

<sup>102</sup> CL:AIRE (Contaminated Land: Applications in Real Environments) is an independent non-for-profit organisation which aims to stimulate the regeneration of contaminated land in the UK by raising awareness of sustainable remediation technologies.

<sup>103</sup> A P Jarvis and P L Younger, “CL:AIRE Technology project demonstration report: TDP13: Passive treatment of severely contaminated colliery spoil leachate using a permeable reactive barrier” (2006) *CL:AIRE*.

<sup>104</sup> Above.

<sup>105</sup> Above.

<sup>106</sup> Above.

- 2.39 Richard et al list suspended mineral particles, salinity and acidity as the most significant forms of water pollution associated with coal mining.<sup>107</sup> Suspended mineral particles are present in surface run-off from colliery spoil,<sup>108</sup> and can contribute to siltation of rivers, turning deep rivers into salt marshes, clogging the gills of fish, destroying fish spawning sites and invertebrate habitats, hindering the growth of aquatic plants and causing localised flooding.<sup>109</sup>
- 2.40 This run-off, known as acid mine drainage, is largely due to the presence of pyrite (iron sulphide) in spoil, although other metals, such as aluminium, manganese and arsenic may also be present.<sup>110</sup> Pyrite oxidation occurs when the pyrite is exposed to oxygen and water (bacteria contribute to the process).<sup>111</sup> This creates a precipitate of ferric oxide, which “coats the beds of watercourses, rendering them unsuitable as habitats for benthic organisms”.<sup>112</sup> This is the cause of orange water in affected watercourses. Also, “the high concentrations of other metals, notably aluminium, may also be toxic to aquatic life, particularly fish”.<sup>113</sup> In consequence, watercourses impacted by acid drainage are “usually without fish, and sometimes devoid of any aquatic life”.<sup>114</sup> The acid drainage is also corrosive and degrades soil.<sup>115</sup> Revegetation of the spoil, along with the diversion of surface water can “reduce acid production by approximately 50%”.<sup>116</sup> This prevents the oxidation of pyrite by isolating the waste from oxygen.<sup>117</sup>
- 2.41 Climate change is exacerbating this pollution. The Environment Agency highlighted this and explained how it changes the nature of the pollution:

Our climate is changing and this is set to continue. The UK Climate Change projections (UKCP18) show that hotter drier summers, milder wetter winters, rising sea levels and more extreme weather events are expected. Diffuse sources of metals become more significant after heavy rain and at higher river flows since more erosion of mine wastes occurs, and percolation of rain through these wastes mobilises metals. Diffuse sources contribute most of the metals found in rivers at higher river flows. Climate change is expected to make these diffuse sources even

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<sup>107</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 369.

<sup>108</sup> Above.

<sup>109</sup> 4R Group, *Mine Spoil: Lasting impacts of mining operations on the environment* (2018), <https://www.4r-group.co.uk/> (last visited 25 March 2021).

<sup>110</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 370.

<sup>111</sup> Meeting with Professor Karen Hudson-Edwards, Camborne School of Mines, University of Exeter.

<sup>112</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 370.

<sup>113</sup> Above.

<sup>114</sup> Above.

<sup>115</sup> Meeting with Professor Karen Hudson-Edwards, Camborne School of Mines, University of Exeter.

<sup>116</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 390.

<sup>117</sup> Above, p 387.

more significant causes of pollution. Lower river flows, like those experienced in the hot summer of 2018, mean that mine water discharges (which tend to flow all year round) provide a greater proportion of baseflow. The severity of pollution is therefore increased because there is less dilution by cleaner water.<sup>118</sup>

- 2.42 For example, the coal mine water discharge in the Holme Valley in Yorkshire “blows out” after heavy rainfall every couple of years, temporarily increasing the length of orange staining of the water from 5 to 60 kilometres,<sup>119</sup> as illustrated below.



- 2.43 Global warming could also increase the severity of acid mine drainage as chemical reactions tend to proceed much more quickly at higher temperatures. As a result, more acid will be produced.<sup>120</sup>
- 2.44 The Environment Agency explains that, despite having polluting effects, some of the older sites are given protected status:

Abandoned mines and waste heaps do provide benefits to society. Hundreds are protected for their heritage value as Scheduled Monuments and UNESCO recognises parts of the Cornwall and West Devon mining landscape as a World Heritage site. The high metal concentrations left in some mining wastes and river sediments downstream of abandoned mines have encouraged distinctive metallophyte floras, many of which are protected as ‘Sites of Special Scientific Interest (SSSI)’, and represent an important part of Britain’s biodiversity.<sup>121</sup>

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<sup>118</sup> Environment Agency, *2021 River Basin Management Plan: Mine Waters Challenge* (2019), [https://consult.environment-agency.gov.uk/environment-and-business/challenges-and-choices/user\\_uploads/pollution-from-abandoned-mines-challenge-rbmp-2021-1.pdf](https://consult.environment-agency.gov.uk/environment-and-business/challenges-and-choices/user_uploads/pollution-from-abandoned-mines-challenge-rbmp-2021-1.pdf) (last visited 3 March 2021).

<sup>119</sup> Above.

<sup>120</sup> Professor Karen Hudson-Edwards, Camborne School of Mines, University of Exeter.

<sup>121</sup> Environment Agency, *2021 River Basin Management Plan: Mine Waters Challenge* (2019), [https://consult.environment-agency.gov.uk/environment-and-business/challenges-and-choices/user\\_uploads/pollution-from-abandoned-mines-challenge-rbmp-2021-1.pdf](https://consult.environment-agency.gov.uk/environment-and-business/challenges-and-choices/user_uploads/pollution-from-abandoned-mines-challenge-rbmp-2021-1.pdf)



- 2.45 An example of an SSSI for metallophyte flora is a mining waste site at Nenthead in Cumbria. This site is causing pollution, and the nearby River Nent is one of the most polluted rivers in England.<sup>122</sup>
- 2.46 Pollution from abandoned coal mines and other mines contributes to seven percent of failures of bodies of water in the UK to be awarded good status.<sup>123</sup> An example of this is Kellingley colliery in North Yorkshire. Kellingley colliery closed in December 2015. The coal tip associated with it caused severe pollution of a nearby lagoon. Tipping continued well beyond the formal closure of the mine. Nigel Adams MP raised this in the House of Commons:
- The adjacent and nationally renowned diving centre, the Blue Lagoon, is now a stinking black pond due to polluted run-off from the UK Coal tip. A plan agreed between the Environment Agency and UK Coal has achieved nothing. The toe drain is still incomplete, and many of the sections already completed are full of silt or have a damaged liner and are therefore ineffective. The owner of the site of the Blue Lagoon, Martin Ainsworth, is suffering severe stress and struggling to run his business. After tipping is complete, the mineral content will continue to leach from the tip for many years to come. I urge the Minister to ensure that UK Coal and Harworth Estates take their environmental responsibilities seriously and ensure that restoration is completed fully.<sup>124</sup>
- 2.47 Mining waste has also been tipped in the sea and on beaches in the UK, which has caused severe pollution.<sup>125</sup> The run-off from coal tips can also pollute rivers for many years, causing orange, acidic water in streams and increasing the percentage of heavy metals in bodies of water. They also contribute to siltation of rivers, turning deep rivers into salt marshes, clogging the gills of fish, destroying fish spawning sites and invertebrate habitats, hindering the growth of aquatic plants and causing localised flooding.<sup>126</sup>

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choices/user\_uploads/pollution-from-abandoned-mines-challenge-rbmp-2021-1.pdf. (last visited 3 March 2021).

<sup>122</sup> Above.

<sup>123</sup> Environment Agency, *Inventory of closed mining waste facilities* (2014) p 2, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/288582/LIT\\_6797\\_7d390c.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/288582/LIT_6797_7d390c.pdf) (last visited 3 March 2021). See also Environment Agency, "Abandoned mines and the water environment" (2008), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/291482/LIT\\_8879\\_df7d5c.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/291482/LIT_8879_df7d5c.pdf) (last visited 15 March 2021).

<sup>124</sup> *Hansard* (HC), 9 December 2015, vol 603, col 1115, <https://hansard.parliament.uk/Commons/2015-12-09/debates/15120955000002/KellingleyColliery?highlight=kellingley%20coal%20tip#contribution-15120955000786> (last visited 3 March 2021).

<sup>125</sup> *Hansard* (HC), 30 January 1974, vol 349, col 365, <https://hansard.parliament.uk/Lords/1974-01-30/debates/a09ff511-ce4e-4040-8f5c-c1a693630133/CoalWasteTippingOnDurhamForeshore?highlight=coal%20tip%20sea#contribution-9abd503b-e30e-4229-b2ad-0eb9df66608> (last visited 3 March 2021).

<sup>126</sup> 4R Group, *Mine Spoil: Lasting impacts of mining operations on the environment* (2018), <https://www.4r-group.co.uk/> (last visited 25 March 2021).

- 2.48 The Coal Authority is currently treating many mine waters from abandoned coal mines.<sup>127</sup> This usually involves using settlement lagoons and reed beds to remove iron from the water. The Taf Merthyr scheme, pictured below, is one of the Coal Authority's largest schemes. The site was third on the Environment Agency's priority list for sites that needed treatment. It was described in 1998 as "largely unvegetated – mainly large, abandoned terraces of bare ground enclosing the old mine workings and associated colliery spoil" and polluted four kilometres of river. The site supports a "mosaic of habitats" and bird numbers have increased. The river now runs clear and supports fish such as brown trout; and there is evidence of otter activity.<sup>128</sup>



- 2.49 Coal tips do not only impact on watercourses. Dust from coal tips can also be detrimental to human health, for example if it contains silica, and have an impact on the quality of surrounding soil. There may also be toxic elements mixed in with the dust.<sup>129</sup>

## SPONTANEOUS COMBUSTION

- 2.50 Coal tips can spontaneously ignite and remain alight for years. These fires can occur on tips which have been disused for decades. Coal smoke is known to be harmful to health; the fumes from coal-fired power stations are linked with "asthma, cancer, heart and lung ailments, neurological problems, acid rain, global warming and other severe environmental and public health impacts".<sup>130</sup> An American study found that burning coal tips emit hydrogen sulphide and that sulphur itself forms on the surface of the burning tip.<sup>131</sup> Source sampling also found sulphur dioxide, carbon monoxide and

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<sup>127</sup> Coal Authority, *Case Study: Taff Merthyr mine water treatment scheme* (2019), <https://www.gov.uk/government/case-studies/taff-merthyr-mine-water-treatment-scheme> (last visited 3 March 2021).

<sup>128</sup> Above.

<sup>129</sup> Meeting with Professor Karen Hudson-Edwards, Camborne School of Mines, University of Exeter.

<sup>130</sup> Union of Concerned Scientists, *Coal and Air Pollution* (2008) (updated 2017), <https://www.ucsusa.org/resources/coal-and-air-pollution> (last visited 3 March 2021).

<sup>131</sup> V H Sussman and J Mulhern, "Air Pollution from Coal Refuse Disposal Areas" (1964) *Journal of the Air Pollution Control Association* 279, <https://www.tandfonline.com/doi/pdf/10.1080/00022470.1964.10468282> (last visited 3 March 2021).



ammonia. It also found that the emissions interfered with visibility and were likely to have impacted on the health of the local communities.

- 2.51 Richards et al cited carbon monoxide, carbon dioxide, sulphur dioxide and hydrogen sulphide as gases produced by burning coal tips. These gases were described as hazardous to health and able to travel “considerable distances” and “enter and accumulate within nearby buildings thereby putting residents or users of the building at risk”.<sup>132</sup> The gases are very dangerous, and increased exposure to them can cause headaches, irritation to the nose and throat, unconsciousness and even death.<sup>133</sup>
- 2.52 Combustion can also cause subsidence and “hidden cavities are thus formed which may subsequently be subject to sudden collapse”.<sup>134</sup> For this reason, Richards et al suggest that personnel on foot working on a burning coal tip are provided with harnesses and lifelines. However, combustion does not always make a tip unstable, as the fusion of materials within the tip can increase the strength of the material.<sup>135</sup>
- 2.53 The construction and composition of a tip affects the likelihood of combustion. Older tips formed by “loose tipping over the edge of the heap” are particularly susceptible to combustion because this method created gaps in the tip which increased the availability of oxygen.<sup>136</sup> Thin layer tips are not likely to combust.<sup>137</sup>
- 2.54 Richards et al list the factors that contribute to the likelihood of combustion:
- (1) the composition of the spoil;
  - (2) the grading of the spoil;
  - (3) the compaction of the spoil;
  - (4) the method by which the spoil heap has been formed;
  - (5) the size of the spoil heap;
  - (6) whether the spoil heap has steep faces exposed to the wind; and
  - (7) whether the spoil heap has been capped with dense non-combustible material.<sup>138</sup>

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<sup>132</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 220.

<sup>133</sup> Above, p 221.

<sup>134</sup> Above, p 220.

<sup>135</sup> Above, p 221.

<sup>136</sup> Meeting with Professor Karen Hudson-Edwards, Camborne School of Mines, University of Exeter and I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 214.

<sup>137</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 186.

<sup>138</sup> Above, p 217.

- 2.55 The presence of pyrite increases the likelihood of combustion, and lower rank coals are more susceptible to self-heating. In the past, this has led to people believe that anthracite, the highest rank coal, is not able to undergo spontaneous heating. However, evidence from the Pennsylvania Department of Health<sup>139</sup> and from a coal tip made of a high percentage of anthracite in Swansea that was on fire for three years<sup>140</sup> have demonstrated that this is not the case. A high percentage of moisture in the tip also increases the likelihood of combustion.<sup>141</sup> Tips can also be ignited by bonfires, underground electric cables or grass fires.<sup>142</sup>
- 2.56 In order to assess the combustibility of a tip, its calorific value is assessed (the higher the calorific value, the more likely that it will combust). Richards et al explain that “colliery spoil deposited in the nineteenth century and early twentieth century are likely to have higher calorific values ... because of their higher coal content”.<sup>143</sup> Further, in comparison to spoil in Germany, Spain and France, the UK spoil had higher calorific values.<sup>144</sup> This is because the coal seams in the UK contain a higher proportion of higher-grade denser coal than in mainland Europe.
- 2.57 There are different methods for treating coal tip fires, depending on the circumstances of the tip and the fire. These methods are excavation, trenching, blanketing and grout injection. Treating burning tips is hazardous, and there have been fatal accidents.
- 2.58 There have been historical attempts to control coal tip fires. The Public Health (Coal Mine Refuse) Bill was placed before Parliament in 1938 in an attempt to control the fires. It was a one clause Bill worded as follows:
- For the purposes of section ninety-two of the Public Health Act 1936, an accumulation or deposit of refuse from a coal mine which is liable to spontaneous combustion shall be deemed to be an accumulation or deposit which is prejudicial to health or a nuisance and liable to be dealt with summarily in manner provided by that Act.<sup>145</sup>
- 2.59 The Bill sought to ensure that local authorities acted to put out a tip that was on fire. At the time, 226 coal tips were on fire in England and Wales, causing severe nuisance to

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<sup>139</sup> V H Sussman and J Mulhern, “Air Pollution from Coal Refuse Disposal Areas” (1964) *Journal of the Air Pollution Control Association* 279, <https://www.tandfonline.com/doi/pdf/10.1080/00022470.1964.10468282> (last visited 3 March 2021).

<sup>140</sup> *Anthony and Ors v The Coal Authority* [2005] EWHC 1654 (QB), [2006] Env LR 17.

<sup>141</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 219.

<sup>142</sup> Above, p 219.

<sup>143</sup> Above, p 223.

<sup>144</sup> Above, p 224.

<sup>145</sup> *Hansard* (HC), 25 November 1938, vol 341, col 2118, [https://hansard.parliament.uk/Commons/1938-11-25/debates/ab1744f4-0ce4-4968-90b0-a46d473bf453/PublicHealth\(CoalMineRefuse\)Bill](https://hansard.parliament.uk/Commons/1938-11-25/debates/ab1744f4-0ce4-4968-90b0-a46d473bf453/PublicHealth(CoalMineRefuse)Bill) (last visited 3 March 2021).

the local communities.<sup>146</sup> In the Parliamentary debate, John Parkinson MP (Wigan) recalled a tip burning since his childhood:

To my knowledge, that heap has been burning for at least 50 years, and I am not sure whether or not it is now extinct, but I remember when I was a boy seeing the same heap burning, and that is considerably over 50 years ago.<sup>147</sup>

- 2.60 The Durham County Health Inspector described the impact coal tip fires in the following terms:

In the course of burning pit heaps inquiries I have found conditions where food (for example, the week-end joint) had to be cooked immediately to prevent its spoliation by fumes, where brassware and paintwork were badly attacked by the same cause, and even where windows had to be kept more or less permanently closed lest any veering of the wind should flood the premises with noxious vapours.<sup>148</sup>

- 2.61 Schools were also affected and had to keep their doors and windows shut or the schools would fill with fumes. There was also concern at the time that the burning tips would impact on the attempts to black out the country during the Second World War.
- 2.62 Tip fires could also cause loss of life. This is evidenced by Joshua Ritson MP (Durham) in a discussion of burning coal tips which took place in the House of Commons in 1936 during an earlier attempt to introduce the Bill.

Adults and children have lost their lives on these heaps. They are burning continually and no one really knows what happens. They are hollow inside, and in Durham within the last four or five years adults have been lost; they have dropped through the hollow slag-heaps while searching for coal or cinders for their fires.<sup>149</sup>

- 2.63 The Bill was passed in 1939 with amendments. Section 92 of the Public Health Act 1936 was amended so as to provide that “an accumulation or deposit of refuse from a coal mine in respect of which there is reasonable cause to believe that spontaneous combustion is likely to occur shall be deemed to be an accumulation or deposit which is prejudicial to health or a nuisance”. Under the Act, an accumulation or deposit prejudicial to health was a statutory nuisance. This enabled local authorities to serve an abatement notice on the person causing the nuisance, or the owner or occupier of the affected premises, requiring them to abate the nuisance and to execute works necessary for that purpose.<sup>150</sup>

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<sup>146</sup> *Hansard* (HC), 25 November 1938, vol 341, col 2120.

<sup>147</sup> *Hansard* (HC), 25 November 1938, vol 341, col 2181.

<sup>148</sup> *Hansard* (HC), 25 November 1938, vol 341, col 2121.

<sup>149</sup> *Hansard* (HC), 14 May 1936, vol 312, col 703, [https://hansard.parliament.uk/Commons/1936-05-14/debates/eb0c4688-1658-4d8b-bdbd-817637f4c34e/CoalMines\(RefuseHeaps\)?highlight=slag%20heaps#contribution-e2dae4f9-cae7-431f-af49-e6755d8a1a5d](https://hansard.parliament.uk/Commons/1936-05-14/debates/eb0c4688-1658-4d8b-bdbd-817637f4c34e/CoalMines(RefuseHeaps)?highlight=slag%20heaps#contribution-e2dae4f9-cae7-431f-af49-e6755d8a1a5d) (last visited 3 March 2021).

<sup>150</sup> Both ss 92 and 93 of the Public Health Act 1936 were repealed by the Environmental Protection Act 1990. See para 5.25 below.

- 2.64 The problem of spontaneous tip fires nevertheless continued. Historically, this was a very common occurrence. In 1967 the NCB owned 2,000 tips, of which 15% were classified as “burnt out” and over 50% as “burning”.<sup>151</sup> As we mention later, Tip 5 above Aberfan was on fire for several years.<sup>152</sup> In the debate on the Mines and Quarries (Tips) Bill in 1969<sup>153</sup> Fred Evans MP (Caerphilly) spoke of a tip that caught fire in his constituency:

The Bill will receive a general welcome in the House. It will be particularly welcome in South Wales because of the topography of our valleys, with houses clustered around the collieries and the colliery tips either on the fringe of the built-up area on a precipitous slope or, in some cases, dumped in the middle of the built-up area, as in my own village which achieved television fame four years ago when the whole thing went to fire. For a couple of months on television we saw pictures of the green and red ten-foot-high flames which, standing above and looking down, reminded me of Dante's Inferno. In moments of wild imagination I sometimes dreamed that at the bottom I could see the shrivelled souls of the coal owners who originally put the stuff there. When this dreadful tip went afire in my own village, the content of lethal gas in the atmosphere was about 1,000 per cent greater than the level necessary to kill. A section of the village had to be evacuated as a matter of emergency.<sup>154</sup>

- 2.65 There have been many other such fires. An underground fire in Scotland burned for 45 years, causing subsidence of buildings above and noxious fumes.<sup>155</sup> In November 1985, a coal tip associated with Polkemmet Colliery caught fire and remained on fire at least until the end of January 1986.<sup>156</sup> The fumes were such a nuisance to the local community that their MP requested a ministerial visit to the tip.<sup>157</sup> Following the visit, the Minister reported to Parliament that he had been assured by the NCB and the local authority that all measures possible were being taken to rectify the situation. The local MP, Sir Thomas Dalyell responded in the following terms:

I thank the Minister publicly, as I have privately, for making the detour there. Will he give this copper piping that I am holding, which I was given yesterday by a

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<sup>151</sup> R K Taylor, “Colliery Spoil Heap Materials – Time Dependent Changes” (1974) 7 *Ground Engineering*, [https://cdn.ca.emap.com/wp-content/uploads/sites/13/1974/07/1974-07\\_Pages\\_24-27.pdf](https://cdn.ca.emap.com/wp-content/uploads/sites/13/1974/07/1974-07_Pages_24-27.pdf) (last visited 3 March 2021).

<sup>152</sup> See para 4.9 below.

<sup>153</sup> The Bill is discussed in paras 4.12 to 4.29 below.

<sup>154</sup> *Hansard* (HC), 7 November 1968, vol 772, col 1159, [https://hansard.parliament.uk/Commons/1968-11-07/debates/c1ce43ba-6c55-4d71-a319-f0a0796daaa8/MinesAndQuarries\(Tips\)Bill?highlight=coal%20tip#contribution-d098fc37-a2dc-40f3-9fb2-05581eaefe2d](https://hansard.parliament.uk/Commons/1968-11-07/debates/c1ce43ba-6c55-4d71-a319-f0a0796daaa8/MinesAndQuarries(Tips)Bill?highlight=coal%20tip#contribution-d098fc37-a2dc-40f3-9fb2-05581eaefe2d) (last visited 3 March 2021).

<sup>155</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 215.

<sup>156</sup> *Hansard* (HC), 13 November 1985, vol 86, col 551, <https://hansard.parliament.uk/Commons/1985-11-13/debates/6c72868b-643a-4f04-b5eb-59aa578e204d/PolkemmetBing?highlight=polkemmet%20bing#contribution-5860c56a-eb34-43da-b2ee-ec86b218317a> (last visited 3 March 2021).

<sup>157</sup> *Hansard* (HC), 25 November 1985, vol 87, col 597, <https://hansard.parliament.uk/Commons/1985-11-25/debates/5a731fbd-4105-453e-8710-cb9d8de7b106/CoalIndustry?highlight=polkemmet%20bing#contribution-85db5e2c-ac49-4719-b06a-fe7f5d4fe593> (last visited 3 March 2021).

constituent, Mr Alec Gibson, to his analysts, because if the sulphur emissions do that to copper, what do they do to the guts and intestines of my constituents? Will he provide resources for continuous 24-hour work to rectify this desperate problem? I saw the Bing<sup>158</sup> yet again yesterday, and it is a serious health hazard.<sup>159</sup>

- 2.66 A coal tip in Swansea caught fire in 1996 and was on fire for over three years until the local authority extinguished it at a cost of £1 million. Proceedings were brought against the Coal Authority by residents impacted by the fumes.<sup>160</sup> It was held that the fire was caused by spontaneous combustion and not, as contended by the Coal Authority, children setting it alight. It was also held that the Coal Authority was liable, despite the tip having been sold by the British Coal Corporation years previously and never owned by the Coal Authority. The judgment discussed nearby tip fires at Garngoch, Broadoak, Caeduke, Mountain and Morlais collieries. There was also evidence of heating within the tip itself for years before it caught fire as well as in neighbouring tips and underground waste. An underground coal tip fire in Keele burned for 13 years until it was put out in 2018, which involved closing a road for seven months.<sup>161</sup>
- 2.67 The fires can occur many years after the tips are abandoned. For example, a fire of underground spoil started in 2015 in a mine abandoned in 1966.<sup>162</sup> It was still burning in 2020.<sup>163</sup> A coal tip near Ogmores Vale burned for many years.<sup>164</sup>
- 2.68 More recently formed tips are less likely to combust than older tips, because the method of construction of tips changed so that the spoil is compacted before being tipped.

## REMEDICATION AND RECLAMATION OF TIPS

- 2.69 The remediation of coal tips aims to ensure the safety of the tips. Richards et al categorise remedial measures as follows.

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<sup>158</sup> Bing is another word for 'tip'.

<sup>159</sup> *Hansard* (HC), 16 December 1985, vol 89, col 3, [https://hansard.parliament.uk/Commons/1985-12-16/debates/eab7532a-2e02-4783-a996-33c37bfe445f/PolkemmetBing\(MinisterialVisit\)?highlight=polkemmet%20bing#contribution-09d3dab1-bbe7-4b25-987a-77ba6a1cb117](https://hansard.parliament.uk/Commons/1985-12-16/debates/eab7532a-2e02-4783-a996-33c37bfe445f/PolkemmetBing(MinisterialVisit)?highlight=polkemmet%20bing#contribution-09d3dab1-bbe7-4b25-987a-77ba6a1cb117) (last visited 3 March 2021).

<sup>160</sup> *Anthony and Ors v The Coal Authority* [2005] EWHC 1654 (QB), [2006] Env LR 17.

<sup>161</sup> BBC News, *Keele underground fire to be extinguished after 13 years* (2018), <https://www.bbc.co.uk/news/uk-england-stoke-staffordshire-45353666> (last visited 3 March 2021).

<sup>162</sup> A Hawken, "Underground fire still burning more than a year after it was found in a disused mine and experts have no idea when it will stop" (2016) *Mail Online*, <https://www.dailymail.co.uk/news/article-3565312/Underground-fire-burning-YEAR-disused-experts-no-idea-stop.html> (last visited 15 March 2021).

<sup>163</sup> H Sodan, "Underground fire in old mine workings still burning five years after it was discovered" (2020) *Northern Echo*, <https://www.thenorthernecho.co.uk/news/local/northdurham/18136221.underground-fire-old-mine-workings-still-burning-five-years-discovered/> (last visited 15 March 2021).

<sup>164</sup> Penllwyngwent Colliery, Wyndham, Bridgend, <https://www.mindat.org/loc-11750.html>.

- (1) Precautionary work: “required where stability analysis indicates that a tip may become unstable, or where features observed on a site suggest a failure may occur”.<sup>165</sup>
- (2) Remedial work: “required where slippage has occurred or where movement of the tip indicates that it is unstable”.<sup>166</sup>
- (3) Maintenance work: which is required on all tips. An example of this is maintenance of drainage systems or of vegetation.<sup>167</sup>

2.70 Richards et al explain that “the following precautionary or remedial works may be carried out to increase or restore stability”:<sup>168</sup>

- Construction of a berm<sup>169</sup> one third or halfway up the slope to increase the resisting forces;
- Reduction of the height of the tip;
- Reducing the gradient of a slope by introducing new material;
- Lowering the water table in the tip by improving the existing drainage system or by installing a deep drainage system using relief wells or bored filter drains;
- Construction of a retaining wall, or the installation of sheet piling at the toe of the tip. For sheet piling, consideration should be given to the possible adverse effects of pile driving on tip stability; and
- Preventing surface erosion through the use of vegetation.

2.71 What is required in each case depends on an understanding of the individual tip. There is no “one size fits all” solution.<sup>170</sup> It has been explained to us that the most important thing is to control the surface water and the surface water run-off. As much as possible, it is important to try to prevent water from entering the tip by using deflection channels or preferential water channels. Developing flow channels through the material is more effective than a concrete structure. It is also important to control the groundwater pressure. Reprofilling to reduce the angle of the tip slope or using

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<sup>165</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 200.

<sup>166</sup> Above, p 201.

<sup>167</sup> Above, p 205.

<sup>168</sup> Above, p 203.

<sup>169</sup> This is an engineered barrier consisting of a horizontal shelf or ledge formed part way up the slope of tip to improve stability.

<sup>170</sup> Professor Karen Hudson-Edwards, Camborne School of Mines, University of Exeter.

bunds (embankments) could also be necessary. The most appropriate approach will depend on the risk profile of the tip – remove, reprofile, stabilise.<sup>171</sup>

2.72 Reclamation or landform remodelling aims are different to the aims of remediation. The aims of landform remodelling are to ensure that:<sup>172</sup>

- (1) the land is safe;
- (2) the land is usable;
- (3) the land can be managed economically;
- (4) the quality of the local environment is enhanced; and
- (5) economic regeneration is accelerated by creating new landforms which can accommodate a particular new development.

2.73 A good example of a land reclamation scheme is the work done in the 1970s to reclaim the Blaina valley and Nant y Glo in South Wales.<sup>173</sup> The valley had both steelworks and a number of collieries, the last of which closed in 1975. There were numerous slurry ponds and large coal tips. There were two large, unstable tips on the hillside which were directly above housing. One of the tips was removed and used to raise the valley floor. The other tips present were stabilised, regraded and revegetated. This provided 67.5 hectares of reclaimed land for amenity, grazing, housing and industrial use. The cost of the scheme was £7.25 million.

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<sup>171</sup> Meeting with Professor Patrick Foster and Professor John Coggan, Camborne School of Mines, University of Exeter. See para 8.25 below for the hierarchy of remediation options applied by the Coal Authority.

<sup>172</sup> I G Richards, J P Palmer and P A Barratt, *The Reclamation of Former Coal Mines and Steelworks* (1993) p 427.

<sup>173</sup> Above, p 587.

## Chapter 3: Mapping the coal tips of Wales: activity status, ownership and risk categories

- 3.1 Provisional figures indicate that there are 2,144 identified coal tips in Wales. Just over 70% of tips, 1,574 in total, are on private land or of unknown ownership. Local authorities own 354 tips (17%), and 183 are managed by Natural Resources Wales (NRW) (9%). The Coal Authority owns 33 tips (2%).<sup>174</sup>
- 3.2 This chapter will provide a profile of these tips. It will consider the extent to which they are disused, their ownership categories, and their distribution across local authorities and risk categories.

### ACTIVE MINES

- 3.3 Very few of the coal tips in Wales are now associated with active mines. There are a small number of open cast coal mines remaining in Wales, at three sites in South Wales, and two mining operations categorised as deep coal mines.
- 3.4 All active mines require a licence from the Coal Authority under the Coal Industry Act 1994; variation of a licence in time or space also requires authorisation by the Coal Authority. Under section 26A of the 1994 Act, as amended by the Wales Act 2017, Welsh Ministers must approve any new or varied licence before it takes effect. The procedure is for mine operators to obtain a Coal Authority licence and any necessary planning permissions in addition to Welsh Ministers' approval.
- 3.5 The Welsh Ministers and the Coal Authority have significantly different criteria for approving a licence. The Coal Authority has a duty under the 1994 Act to carry out its licensing functions so as to secure "an economically viable coal mining industry in Great Britain".<sup>175</sup> In contrast, it is Welsh Government policy to avoid the continued extraction of coal. Further, Welsh Planning Policy places fossil fuels at the bottom of the energy hierarchy and does not permit the mining of coal for energy production. Coal may be extracted for non-energy purposes such as the production of steel and cement and for water filtration.<sup>176</sup>

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<sup>174</sup> Provisional figures provided by the Welsh Government. Final figures will not be available until autumn 2021. See further paras 3.42 and 3.43 below.

<sup>175</sup> Coal Industry Act 1994, s 2(1)(a).

<sup>176</sup> Planning Policy Wales 10 sets out the new targets outlined by the Minister in 2016 of 70% of Wales's electricity consumption to come from renewable energy by 2030. Planning Policy Wales 11 provides a strong presumption against coaling, with the exception of wholly exceptional circumstances. The Welsh Government has also published its response to a consultation on coal policy: <https://gov.wales/coal-policy-statement> and <https://gov.wales/coal-policy-wales> (last visited 25 March 2021). This states that Welsh Ministers do not intend to authorise new Coal Authority mining operation licences or variations to existing licences. The statement acknowledges that coal licences may be needed in wholly exceptional circumstances and each application will be decided on its own merits, but the presumption will always be against coal extraction.



- 3.6 Neither the formation of significant numbers of new coal tips in Wales nor significant expansion of the few currently active tips in the future are at all likely. Only two underground mines remain in operation, one of them producing relatively modest amounts of spoil. Open cast mines produce significant volumes of spoil, but it is generally a condition of the planning permission that the spoil is returned to the void after the completion mining operations.<sup>177</sup>
- 3.7 A mining licence is specific to the mining operation and does not of itself authorise the creation of coal tips; these are regulated by planning control and environmental permits issued by NRW covering matters such as waste and drainage.<sup>178</sup> As a matter of planning control, obligations are set out in site-specific section 106 agreements made under the Town and Country Planning Act 1990. These include matters such as restoration work and aftercare after the completion of mining operations, its agreed cost and provision for payment by the operator into a future restoration fund held by the planning authority in escrow over the lifetime of the mine. These funds are used following completion of mining operations to pay for the aftercare of the mine.
- 3.8 Required restoration work after the closure of an open cast mine may include a requirement to return the waste to the mining void when mining operations cease.<sup>179</sup> Mining operators may apply for permission to store excavated materials permanently in a tip above the void, which is a cheaper option than moving the material back into the void.<sup>180</sup>

### Operational coal mines in Wales

- 3.9 There are five mines, with associated coal tips, operating in Wales. Only three are currently producing coal.<sup>181</sup>
- (1) Aberpergwm is a drift mine that is accessed through the side of a mountain. It creates a significant amount of spoil deposited in tips. The mine has estimated reserves of 42 million tonnes and the mining licence runs until 2097. Planning permission for further coal extraction was granted in 2018; a section 106

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<sup>177</sup> Where the open cast mine is operational, it is defined as a quarry under the Quarries Regulations 1999. See para 4.74 below. Where excavated material is to be returned to the mining void, it is not treated as extractive waste for which a permit is required under the Environmental Permitting Regulations. Instead, an Extractive Mineral Statement confirms how the materials will be managed. See Environment Agency, *Position Statement, Regulatory Framework for the implementation of the Mining Waste Directive* (2010), [https://webarchive.nationalarchives.gov.uk/20140328135419/http://www.environment-agency.gov.uk/static/documents/Research/PS019-MWD\\_Regulatory\\_Framework.pdf](https://webarchive.nationalarchives.gov.uk/20140328135419/http://www.environment-agency.gov.uk/static/documents/Research/PS019-MWD_Regulatory_Framework.pdf) (last visited 15 March 2021) and Natural Resources Wales, *Mining Waste: Do you need to apply for a permit?* <https://naturalresources.wales/permits-and-permissions/waste-permitting/apply-for-a-waste-permit/mining-waste/?lang=en> (last visited 15 March 2021). See ch 5 below for a discussion of the Environmental Permitting Regulations.

<sup>178</sup> See ch 5.

<sup>179</sup> Meeting with Colin Mew, HM Inspector of Quarries.

<sup>180</sup> This was the case at Nant Helen. See below at para 3.9(5).

<sup>181</sup> Information provided by Jennifer Pride and Richard Griffiths, Energy Division, Department for Environment and Rural Affairs, Welsh Government.

agreement provides for a financial restoration guarantee to ensure the restoration and aftercare of the site.<sup>182</sup>

- (2) Dan y Graig is a very small underground mine. The current mining licence expired in March 2021 and mining has ceased. Any extension would require an application to the Coal Authority and approval from the Welsh Ministers.
- (3) Ffos y fran is a reclamation project in respect of a very large former surface mine, which has left a large void containing spoil. Coal is being recovered from the spoil as part of reclaiming the area. It is estimated that some 11 million tonnes will be extracted in total over the course of the reclamation scheme.<sup>183</sup> The operation is conducted under a licence granted in 1994 by the Coal Authority which runs until the end of the present century, but planning permission expires in 2022 and the operation is close to closing.
- (4) Glan Lash is a surface mine which has recently completed its current mining operations. It is now seeking permission to extract a further 110,000 tonnes of coal. Extraction will involve the creation of tips, but the nature of the mine means that the tips will not be of great size. The purpose of the extraction is expressed to be primarily for water filtration rather than for fuel. Planning permission has not yet been granted. A new coal mining licence will be required for any expansion of time or space.
- (5) Nant Helen is a still active surface mine at the point of transitioning to restoration. Approval of a licence extension granted by the Coal Authority was refused by the Welsh Government in May 2020, but subsequently approved in January 2021 to allow for the safe closure of the mine and transition to restoration. It has large tips which are covered by environment permits. Under the terms of the planning consents for the mine, these tips will remain in place; the restoration is mainly focused on the mine void. The mine has a restoration fund and provision for a ten-year aftercare period. The aftercare period ensures that, following site restoration, the land is brought up to the standard required for its intended after-use. In the case of Nant Helen, this will include a programme of activities and monitoring to ensure the long-term success of restoration, including monitoring the condition of vegetation, soil structure and drainage to achieve the standards required for agricultural land, conservation and woodland restoration.

## DISUSED MINES

3.10 As mines have closed, tips have become disused. The pattern of ownership of these tips reflects the history of the coal mining industry. This part of the chapter looks at how this pattern of ownership developed; the next part draws on the work of the Coal Tip Safety Task Force to set out a more detailed account of the incidence and

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<sup>182</sup> Welsh Government, *Coal Extraction in Wales: The Existing Impact Evidence* (2019), <https://gov.wales/sites/default/files/consultations/2020-06/wardell-armstrong-coal-extraction-impact-report.pdf> (last visited 15 March 2021).

<sup>183</sup> Merthyr (South Wales) Ltd, *Ffos-y-fran: The project*, <https://www.merthyrsw.com/projects/ffos-y-fran/> (last visited 15 March 2021).

ownership of tips across local authorities and their risk classifications. Finally, we discuss problems that have emerged over enforcing restoration of closed mines.

### **Ownership of disused mine tips**

- 3.11 Three sets of events – the nationalisation and the subsequent privatisation of coal mining and the marked decline of coal mining activity in the last half century – have had a profound effect on the ownership profile of coal tips in Wales. This part of this chapter discusses these in some detail, beginning with the earlier legacy of tipping associated with pre-industrial mining activity.

### **Early mining**

- 3.12 Some older tips associated with coal mines were already disused at the time of nationalisation. Mine workings, and the associated tips, which had already been abandoned at the time of nationalisation of the coal industry never came into the ownership of the National Coal Board (NCB). They had typically been worked by private mine operators over the centuries before nationalisation; many of the tips are very small, reflecting the early days of coal mining, which began with the exploitation of easily accessible deposits by local communities – at first prior to, and later in tandem with, the evolving iron industry.<sup>184</sup> They may be found on land under any type of ownership.

### **Changes in ownership of coal mines and tips as a result of nationalisation and privatisation of the coal industry**

- 3.13 The main recent influences upon tip ownership have been, or been associated with, the nationalisation and subsequent privatisation of the coal industry in Great Britain.

### **Nationalisation**

- 3.14 As was noted in chapter 1, coal industry nationalisation in the 1940s took the coal mining industry into public ownership and control and saw the creation of the NCB, the statutory corporation created to run the nationalised industry.<sup>185</sup> Following nationalisation, the NCB owned nearly one thousand collieries, including their associated tips, as well as 250,000 acres of farmland and 140,000 houses and had responsibility for several ancillary activities. The NCB was renamed the British Coal Corporation, commonly known as British Coal, in 1987.<sup>186</sup>
- 3.15 Nationalisation was followed by an accelerated process of closure of mines. Some 767 coal mines were closed between 1947 and 1983. From the point that a mine closed, it became possible for ownership of the disused mineshaft and ownership of the disused tip to diverge.

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<sup>184</sup> See paras 1.10 and 1.11 above.

<sup>185</sup> See para 1.14 above.

<sup>186</sup> See Department of Energy and Climate Change, *Appraisal report relating to the records of the former National Coal Board* (2014), <https://www.nationalarchives.gov.uk/documents/information-management/british-coal-corporation-appraisal-report.pdf>

## Privatisation

3.16 The Coal Industry Act 1994 privatised the economic assets of the, by then, much shrunken coal industry, with the exception of unworked coal. Under the 1994 Act, the land owned by British Coal was sold. Some of the land was disposed of directly by British Coal. All of its other property interests were disposed of by way of Restructuring Schemes made by the Secretary of State for Trade and Industry pursuant to section 12 of the Act.<sup>187</sup> The Schemes dealt with the following types of property.

- (1) Operational land associated with working collieries or opencast sites (either working or prospective). There were at least two such Schemes.
- (2) Liability sites and land which British Coal could not itself sell prior to 20 December 1997.<sup>188</sup> This land transferred to the Coal Authority. There have been ten such Schemes, including land in Scotland.
- (3) Disused colliery sites. A number of disused sites in England were transferred under a Scheme to the Urban Regeneration Agency, known as English Partnerships.
- (4) Recreational land was transferred under a Scheme to the Coal Industry Social Welfare Organisation, a UK-wide charity providing support to former coal miners and their families.
- (5) Rescue Stations transferred on 31 March 1996 to the new Coal Mines Rescue Stations Company, a company limited by guarantee set up by the newly privatised coal mining companies for the purpose of taking over the operations of the Mines Rescue Service previously undertaken by British Coal.

3.17 The first Scheme of transfer to the Coal Authority took effect from 31 December 1994. The seventh such Scheme transferred (with very limited exceptions) all of British Coal's remaining land and property interests with effect from 20 December 1997. During the period between October 1994 and December 1997 British Coal undertook a programme of disposals of its retained land and property interests which had not been included in any of the Restructuring Schemes. Some of these sales were to community groups or other organisations. Some sites were sold off, for example for wind farm development.<sup>189</sup> The sites which could not be sold were retained by the Coal Authority. These included problematic tip sites, which accounts for the current ownership of tips by the Coal Authority.

3.18 The cost of maintaining the tips was calculated at the time of sale and British Coal in some cases gave sums of money to purchasers to contribute to the costs of managing

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<sup>187</sup> Information provided by Clare Wasteney, Head of Legal and Governance, Coal Authority.

<sup>188</sup> Under s 12(6) of the Coal Industry Act 1994, the Secretary of State is required, where liabilities are to be transferred, to have regard to the ability of the purchaser to finance their discharge. Where the cost of remediation work on a coal tip was likely to be very high, the land would have been very difficult or impossible to sell.

<sup>189</sup> Meeting with Stephen Smith and Howard Siddle, members of the Welsh Government Expert Group on Coal Tip Safety.

the tips. Where the calculation of the contribution was higher than British Coal could afford, British Coal and subsequently the Coal Authority retained ownership.<sup>190</sup>

- 3.19 British Coal produced a binder of information for every sale containing extracts from the relevant Restructuring Schemes, copies of relevant underground rights deeds and an Explanatory Note. This information was provided with the intention that it would be passed to any subsequent landowner.
- 3.20 Covenants were imposed on purchasers by the NCB and, subsequently, British Coal to comply with obligations in respect of the remediation of tips. The Coal Authority, as successor in title to the NCB and British Coal, was a party to these transfers, both in order to take the benefit of covenants in the transfers of title and to ensure that not only the new owner but their successors in title would be bound by covenants in favour of the Coal Authority to comply with the tips remediation provisions.
- 3.21 Where tips remained on the land, the disposition of the land to another party would normally contain a covenant for the new owner to comply with the relevant legislation relating to tips at that time or any enactment or future legislation.<sup>191</sup> It would have been normal practice to create an obligation within the disposition for any future owner to provide the Coal Authority with a deed of covenant which would indemnify the Coal Authority for any breach of the restrictions relating to tips.
- 3.22 When the land is remediated and the local authority provides a letter of discharge, or where the tips provisions have been included in the disposition in error, because there are no tips on the land, the Coal Authority can remove the tips provisions.<sup>192</sup>
- 3.23 Where a tip was transferred by British Coal into third party ownership during the restructuring period, the Coal Authority does not have duties as an owner to maintain the tip but, as successor to British Coal, is answerable for the liabilities of British Coal arising out of its former ownership.<sup>193</sup>

### **Tips owned by the Coal Authority**

- 3.24 Owner's liability for the tips which passed to the Coal Authority under the Restructuring Schemes continues. The Coal Authority continues to own 40 coal tips across the UK, of which 33 are in Wales. Its functions include tip inspection and management in respect of tips for which it is responsible as owner. The Authority also provides "consultancy services" of tip inspection and management in respect of tips for which it is not directly responsible; for example, NRW have contracted the Coal Authority to provide inspection and maintenance services for the coal tips on their

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<sup>190</sup> Paul Maliphant, member of the Welsh Government Expert Group on Coal Tip Safety.

<sup>191</sup> If tips remained on the land transferred, the practice of the Coal Authority was to include a link to their guidance on legal requirements: <https://www.gov.uk/guidance/coal-mining-title-deed-covenants-and-legal-requirements> (Clare Wasteney, Head of Legal and Governance, Coal Authority).

<sup>192</sup> The information provided by the local authority is usually drawn from planning conditions. The Coal Authority will also request a mining report to address any mining feature still present on the land. If a tip has been remediated, the letter will include evidence of the work completed (Clare Wasteney, Head of Legal and Governance, Coal Authority).

<sup>193</sup> See, for example, *Anthony and Ors v The Coal Authority* [2005] EWHC 1654 (QB), [2006] Env LR 17.

land.<sup>194</sup> If the Coal Authority disposes of a tip, potential liability to contribute to the cost of remedial works continues for 12 years from the disposal under section 19(1)(a) of the Mines and Quarries (Tips) Act 1969.<sup>195</sup>

### Local authority ownership and the Land Reclamation Programme

3.25 There have been a number of routes by which coal tips have passed into local authority ownership. Some have been acquired by local authorities through compulsory purchase, particularly under the Land Reclamation Programme which began in 1966, when the Welsh Office set up a Derelict Land Unit; it was taken over by the Welsh Development Agency (WDA) from 1976 and transferred to the Welsh Government in 2006. These purchases followed the closure of an increasing number of coal mines from the 1970s onwards. Other tips were bought by local authorities from the Coal Authority at the time of privatisation in the expectation that grants from the WDA would cover the cost of remediation.<sup>196</sup>

3.26 The statutory objectives of the WDA included the improvement of the environment of Wales, to be achieved by means which included the bringing of derelict land into use.<sup>197</sup> This process has been described in the following terms:

The traditional definition adopted in the UK for derelict land is “land so damaged by past industrial or other activity that it is incapable of beneficial use without treatment”. This definition places a clear emphasis on the future use of the land and underpins the distinction between addressing liabilities and securing regeneration. Reclamation is the process by which derelict, despoiled or contaminated land is brought back into a specified beneficial use. Within this process, there is often a need for remediation, which is the process by which health and environmental risks associated with the presence of contamination are reduced to an acceptable level.<sup>198</sup>

3.27 The Land Reclamation Programme was tasked with realising “after value” by the reclamation of land. In order to realise this value, the land was first transferred into local authority ownership, although the WDA provided the funding and exercised supervisory control. When the projects came to an end in 2012, local authorities in

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<sup>194</sup> See paras 3.31 to 3.35 below for further information about the tips managed by Natural Resources Wales.

<sup>195</sup> Mines and Quarries (Tips) Act 1969, s 19, empowers a court, on application by a person served with a notice under s 14 or 17 of the Act, to direct a contribution to the cost of remedial works from, amongst others, any person who has had an interest in the land on which the tip is situated within the previous 12 years. Factors to be taken into account in awarding contribution are set out in s 19(4). For further discussion, see ch 4.

<sup>196</sup> Meeting with Stephen Smith and Howard Siddle, members of the Welsh Government Expert Group on Coal Tip Safety. Stephen Smith was Head of Land Reclamation at the Welsh Development Agency and later the Welsh Government from 2004 to 2012. Howard Siddle worked as an engineer for the National Coal Board in safety-related programmes which included inspecting tips and designing remedial work. For a list of schemes completed between 1966 and 1969, for example, see [https://hansard.parliament.uk/Commons/1969-12-16/debates/a9ae062d-2fa2-42c5-b0a9-da1e2ea8c197/DerelictLand\(ClearanceSchemes\)](https://hansard.parliament.uk/Commons/1969-12-16/debates/a9ae062d-2fa2-42c5-b0a9-da1e2ea8c197/DerelictLand(ClearanceSchemes)).

<sup>197</sup> Welsh Development Agency Act 1975, s 1.

<sup>198</sup> S Smith, “The industrial legacy of Wales – from blight to asset”, paper published in the Proceedings of the 2008 Pennsylvania Abandoned Mine Reclamation and Coal Mining Heritage Conference held at State College, Pennsylvania in August 2008.



some cases still held sites which had not yet been remediated, for which grants were no longer available, and which they were unable to sell on.<sup>199</sup> This means that many of the tips which today remain in local authority ownership are those with the least redevelopment potential. One authority described them to us as “the runts of the litter”.<sup>200</sup> The number of tips benefitting from the programme was relatively low when compared with the overall number of coal tips in Wales.

- 3.28 In the case of many tips which were successfully reclaimed under the Land Reclamation Programme, particularly in the 1980s, contractors were engaged to “wash” the coal out of the spoil, funding the work through the sale of the coal retrieved in the operation. The tips with the highest coal content were removed in this way, but the practice came to an end when the value of the coal retrieved fell and there was no longer an economic incentive to do the work.<sup>201</sup> As a result of the remediation programmes, some local authorities, for example Swansea and Bridgend, have a high proportion of remediated tips in their area. Many are unrecognisable as tips; some have been built over, and the material from some has been removed entirely. For example in the Swansea area, some original tip material is now under roads and the M4 motorway.<sup>202</sup>
- 3.29 The pattern of local authority ownership has been made more complicated by the restructuring of local authorities and the redrawing of boundaries over the years. At the time of the 1969 Act, there were two local authorities spanning the South Wales coalfields: Monmouthshire and Glamorgan. In 1972, local government reorganisation in Wales split these authorities into a two-tier system. Glamorgan was divided into West, Mid and South Glamorgan County Councils, underpinned by a number of district councils. During this time, some tips were owned by the county councils, and some by the lower tier councils.
- 3.30 The Local Government (Wales) Act 1993 abolished the upper tier of councils and created the current structure of 22 local authorities with effect from 1996. The effect of these changes was, on current provisional figures, to spread nearly 80% of the coal tips in Wales across seven local authorities. Tips may have been owned originally at county council or borough council level. In some cases it can be difficult for current local authorities to trace their ownership of tips as land plans may refer only to the original owner.<sup>203</sup>

### **Tips managed by Natural Resources Wales**

- 3.31 NRW manages the coal tips owned by the Welsh Government on the Woodland Estate. This comprises the land formerly managed by the three legacy bodies of the

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<sup>199</sup> Meeting with Stephen Smith and Howard Siddle, members of the Welsh Government Expert Group on Coal Tip Safety.

<sup>200</sup> See para 7.7 below. The Tylorstown tip, referred to in paras 1.3 and 1.4 above, was one of the sites left on the programme when it came to an end. Although investigative work had already begun with a view to remediation, it was not possible to complete the work. The mine with which the tip was associated had been abandoned before nationalisation, with the result that the tip had never been owned by the National Coal Board.

<sup>201</sup> Meeting with HM Inspector of Mines, Bob Leeming.

<sup>202</sup> Meeting with Swansea Council.

<sup>203</sup> Meeting with Neath Port Talbot Council; meeting with Huw Williams, Chief Legal Adviser to the Senedd.

NRW: the Forestry Commission Wales, the Countryside Council for Wales and the Environment Agency Wales.<sup>204</sup> The land covers some 6.5 to 7% of Wales.

- 3.32 The tips on this land date in many cases from the earliest years of the decline of the coal industry. As the land became available, it was acquired and re-planted with trees as part of efforts to boost wood sources, particularly after the First and Second World Wars when timber was scarce. From the 1950s to the 1970s there was further expansion of public forestry. The Forestry Commission acquired sites by compulsory purchase as well as private purchase where available for the purpose of expanding timber reserves.<sup>205</sup> A work on forestry published in 1961 referred to the possibilities of planting trees on former tips:

It appears quite possible that disused opencast sites can be put back under crops most economically by planting them with trees. Corsican pine promises to be the best species ... but several others are thriving in an experimental area at Aberpergwm.<sup>206</sup>

- 3.33 A significant period of public acquisition accompanied the tip inspection and remediation work that followed the Aberfan disaster. In many cases the approach taken to remediation was to plant woodlands, particularly conifers, to provide a better use for the land. Much of this was purchased from landowners and the NCB by the UK Government and managed by the Forestry Commission. A Forestry Commission bulletin published in 1994 contained the following advice on reclamation:

In Wales almost 11,000 hectares were affected by mineral working or waste disposal (Welsh Office 1991). Modern legislation means that the majority of the land affected by mineral workings now has conditions attached to the planning permission which should ensure proper reclamation to an appropriate after-use. Land affected by mineral workings or dereliction may support a vegetation cover. In most circumstances, it is unacceptable to leave despoiled land 'to nature', and intervention, in the form of reclamation, is necessary. There are many reasons to consider forestry as a land-use after the reclamation of derelict land or mineral workings.<sup>207</sup>

- 3.34 The land acquired by the UK Government in Wales passed upon devolution in 1999 to the then Welsh Assembly Government.<sup>208</sup>
- 3.35 NRW manages some coal tips on land leased to them by other bodies, such as water company land (for example around large reservoirs such as Talbont in the Usk

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<sup>204</sup> National Assembly for Wales, *Woodlands in Wales: a quick guide* (2017), available at: <https://senedd.wales/research%20documents/17-008-woodlands/17-008-web-english.pdf> (last visited 16 March 2021).

<sup>205</sup> Information from Robert Vaughan, Natural Resources Wales.

<sup>206</sup> H L Edlin, *Glamorgan Forests* (1961) p 27.

<sup>207</sup> FC Bulletin 110, *Reclaiming Disturbed Land for Forestry* (1994) pp 3 to 5; information from John Browne, Natural Resources Wales.

<sup>208</sup> The transfer of property was made pursuant to the Government of Wales Act 1998, s 23.



catchment) and local authority land with an industrial background (such as Llynfi in the Bridgend County Borough Council area).<sup>209</sup>

### Unknown or fragmented ownership

- 3.36 In some cases it is very difficult to establish ownership of a tip. This is a problem in some cases where a remediated tip has been built over, such as where a housing estate has been built over a tip: ownership will have passed to multiple owners through the purchase of the individual properties. It is possible that a small part of the tip will still need inspection, for example in a recreation area. The planning process should have removed all risk of instability or environmental harm, although in practice it is possible that that has not been the case.
- 3.37 Local authorities have sometimes found it difficult to identify the owner of a tip in their area. An officer of Neath Port Talbot Council recalled that a now retired colleague with responsibility for the tips in the past would ascertain ownership by walking over the tips and greeting those he met.<sup>210</sup> The officer used this example to illustrate the extent to which local knowledge has been lost with changes in staff, restructuring of local authorities and reductions in the workforce. An exercise conducted by the authority recently, to try to identify owners by writing to landowners to ask for records of coal tips on their land, received very few responses.<sup>211</sup> Privately owned tips may be on unregistered land.

### Tips on common land or land with open access rights

- 3.38 Ownership can also be made more complex by rights in common, such as grazing rights, held over areas such as upland areas in Wales where coal tips may be situated. A right in common held by inhabitants of an area passes with individual properties. Landowners may not restrict these rights, so that in practice the land must be kept open.<sup>212</sup> The rights are registered.<sup>213</sup>
- 3.39 Examples quoted to us of common land containing coal tips are the East Merthyr open cast site and the Cilfynydd site.<sup>214</sup> Some of the land is common land of long standing; in other cases common ownership has arisen in recent decades when land was

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<sup>209</sup> Information from Robert Vaughan, Natural Resources Wales.

<sup>210</sup> Paul Ransome, Neath Port Talbot Council and see the further discussion of problems encountered by local authorities in ch 7.

<sup>211</sup> Neath Port Talbot Council.

<sup>212</sup> Under s 38 of the Commons Act 2006, Welsh Ministers must give consent to carry out any restricted works on common land. Restricted works include any works that prevent or impede access to or over the land such as fencing, buildings, structures, ditches, trenches, and embankments.

<sup>213</sup> In accordance with the requirements of the Commons Registration Act 1965, each local authority in Wales is a Commons Registration Authority and holds registers established under the Act. See <https://law.gov.wales/environment/countryside-and-access/common-land/?lang=en#/environment/countryside-and-access/common-land/?tab=overview&lang=en> (last visited 26 March 2021).

<sup>214</sup> Meeting with Stephen Smith and Howard Siddle, members of the Welsh Government Expert Group on Coal Tip Safety.

purchased following the closure of mines and privatisation of the coal industry for the benefit of local communities.<sup>215</sup>

- 3.40 The Countryside and Rights of Way Act 2000 gives broader open public access rights over land mapped as “open country” (mountain, moor, heath and down) and the coastal margin, as well as registered common land.<sup>216</sup> The owner of the land cannot obstruct access but is insulated from liability under the Occupiers’ Liability Act 1957.<sup>217</sup>

## **DISTRIBUTION OF COAL TIPS ACROSS LOCAL AUTHORITIES AND RISK CATEGORIES: PROVISIONAL FIGURES**

- 3.41 Coal tips are concentrated in a small number of local authority areas in South Wales. Sixty percent of tips are in Neath Port Talbot, Rhondda Cynon Taf, Caerphilly and Swansea. Merthyr Tydfil, Bridgend and Blaenau Gwent also have high numbers. Together these authorities are responsible, on provisional figures, for 78% percent of all coal tips in Wales.<sup>218</sup>
- 3.42 The tips in South Wales, their ownership type and their provisional risk assessment have been provisionally mapped by the Coal Authority, in work commissioned by the Welsh Government and conducted with the support of local authorities, with a view to the compilation of a complete database of tips. The Coal Authority team has also adopted a provisional risk categorisation system under which levels of risk are categorised in ascending order from category A to category D, with a further category R for restored tips and NR for tips to which a category has not yet been allocated. This work is discussed in detail in chapter 8.
- 3.43 The great majority of tips fall into the lower risk categories. The diagram below illustrates the relative proportions of category A to D tips within the group of tips to which a provisional category has been assigned.

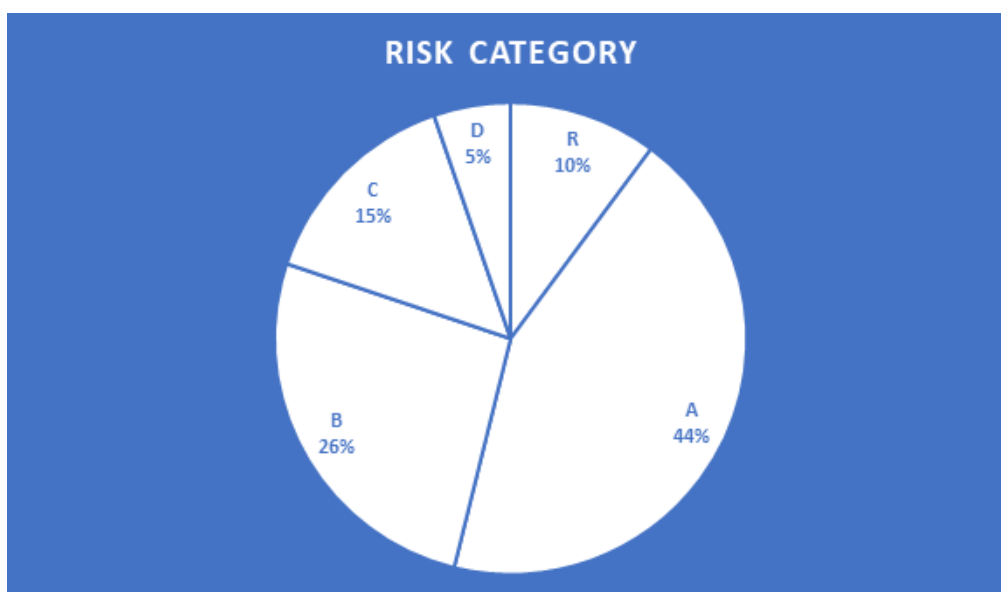
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<sup>215</sup> See, for example, *Anthony and Ors v The Coal Authority* [2005] EWHC 1654 (QB), [2006] Env LR 17, where a tip which subsequently caught fire was on land that had been sold to a group of commoners. The case is discussed further at paras 6. 16 to 6.20 below.

<sup>216</sup> Countryside and Rights of Way Act 2000, s 1.

<sup>217</sup> Countryside and Rights of Way Act 2000, s 13.

<sup>218</sup> Provisional figures provided by the Welsh Government. Local authorities are undertaking a data cleanse of the figures so far available. Final figures will not be available until autumn 2021.



- 3.44 A breakdown of provisional tip numbers by local authority, derived from this work and set out below, shows that the proportion of ownership types and of risk categories varies widely across each local authority.<sup>219</sup> The authorities with the highest numbers of tips are listed first. These figures, including data for tips currently classified as NR, will not be in final form until autumn 2021.

#### Neath Port Talbot

- 3.45 Neath Port Talbot has 584 coal tips, 67% of which are in private ownership, 10% are in local authority ownership, 23% are in NRW ownership and 0.7% are in Coal Authority ownership. Three percent are in category D, 3% percent in category C, 20% in category B, 55% in category A and the remaining 20% are NR or R category tips.
- 3.46 Nine per cent of category C and D tips are in local authority ownership, 17% are in NRW ownership, 11% are in Coal Authority ownership and 63% are in private ownership.

#### Rhondda Cynon Taf

- 3.47 Rhondda Cynon Taf has 286 tips within its jurisdiction. Of these, 57% are in private ownership, 32% are in local authority ownership, 8% in NRW ownership and 3% in Coal Authority ownership. Eight percent are in category D, 14% in category C, 36% in category B and 20% in category A. Twenty-two percent are NR or R category tips.
- 3.48 Of the category C and D tips, 40.6% are in private ownership, 34% in local authority ownership and the remaining 25% are in Coal Authority or NRW ownership.

#### Caerphilly

- 3.49 Caerphilly has 205 coal tips. Of these, 55% are in private ownership, 42% are in local authority ownership, 1% are in NRW ownership and 2% are in CA ownership. Two

<sup>219</sup> The work of the Coal Authority on behalf of the Welsh Government is discussed at paras 8.2 to 8.20 below.

percent are category D tips, 32% are category C tips, 25% are category B tips and 25% are category A tips. Fifteen percent are category NR tips.

- 3.50 Of the category C and D tips, 20% are in local authority ownership, 7% are in NRW or CA ownership and 73% are in private ownership.

#### Swansea

- 3.51 Swansea has 201 coal tips. All coal tips in Swansea are in private or unknown ownership. Swansea has no category D tips and only 4% of its tips are category C. Seventy percent of Swansea's coal tips are NR or R category tips. The remaining 26% of tips are category A or B tips.

#### Merthyr Tydfil

- 3.52 Merthyr Tydfil has 119 coal tips. Of these, 82% of are in private ownership, 13% are in local authority ownership, and the remaining 4% are in NRW or Coal Authority ownership. Fifteen percent are category D tips, 34% are category C tips, 17% are category B tips and 19% are category A tips. The remaining 14% of tips are NR category tips.
- 3.53 Of the category C and D tips, 11% are in local authority ownership, 5% are in Coal Authority ownership, 2% are in NRW ownership and the remaining 81% are in private ownership.

#### Bridgend

- 3.54 Bridgend has 159 coal tips. Of these, 55% are in private ownership, 31% are in local authority ownership, 11% are in NRW ownership and 3% in Coal Authority ownership. Six percent are category D tips, 21% are category C tips, 20% are category B tips and 47% are category A tips. The remaining 7% of the tips are NR category tips.
- 3.55 Of the category C and D tips, 26% are in local authority ownership, 29% are in NRW ownership, and 45% are in private ownership.

#### Blaenau Gwent

- 3.56 Blaenau Gwent has 125 coal tips. Of these, 64% are in private ownership, 31% are in local authority ownership, 4% are owned by the Coal Authority and 1% by NRW. Three percent are category D tips, 10% are category C tips, 30% are category B tips and 23% are category A tips. The remaining 34% is made up of NR and R category tips.
- 3.57 Of the category C and D tips, 25% are in local authority ownership, 37.5% are in private ownership and the final 37.5% are in NRW or Coal Authority ownership.
- 3.58 In the past, the mapping of ownership has been made more complicated by the practice in some areas of categorising tips by tip complex rather than as individual tips. In some cases the tip complexes had multiple owners. The register compiled by the Coal Authority as part of the Task Force work counts each tip individually.

#### Others

- 3.59 The remainder of the local authorities with tips do not as yet have any category C and D tips. Carmarthenshire has 170 tips. They are all in categories A, NR or R.

- 3.60 Monmouthshire has two category B and two category A tips. The remainder of its tips are category NR. Torfaen has two category B tips, one of which is owned by the Coal Authority, and one by NRW. The remainder of its 173 tips are category A, R or NR. Cardiff has four category B tips, as well as some NR tips. Powys has one category B and one category A tip, as well as some NR tips. Wrexham, Gwynedd, Flintshire and Pembrokeshire all have NR tips only. All are in private ownership.

## REGULATORY PROBLEMS WITH RECENTLY CLOSED MINES

- 3.61 Regulatory problems have been encountered in recent years in enforcing the remediation of land adversely affected by coal mining. Remediation has been frustrated by inadequate financial provision and by the transfer of the liabilities to shell companies.

### Inadequate financial provision

- 3.62 Problems have arisen as a result of the setting of restoration bonds at levels well below the amount needed for restoration.<sup>220</sup> This occurred in particular following privatisation of the industry in 1994, when companies were given greater leeway than is current practice. For example, some were given a ten-year “holiday” from contributions to restoration funds in exchange for taking over the mines, leading to restoration bonds falling short of the required level. In South Wales, the British Coal opencast operation was taken over by Celtic Energy Ltd, which acquired operational sites managed by British Coal and licences for sites which had yet to obtain planning consent. The company acquired the sites on terms which did not require restoration bonds:

Celtic Energy Ltd, the new private operator, was bound by conditions of planning permissions for these sites. However, no restoration bonds were required of the new operator nor were restoration bonds applied to sites obtaining planning permission (or extensions to permissions) during the decade following privatisation in 1995. Sites and site extensions obtaining planning permission since 2005 have been the subject of various types of restoration bond and with varying amount of monies accrued.<sup>221</sup>

- 3.63 The problem has been marked across the whole of the UK in relation to the restoration of open cast mines, with many instances of shortfall in the level of the restoration bond needed to restore mining site.<sup>222</sup> Tips intended to be temporary

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<sup>220</sup> A restoration bond is a form of financial instrument to guarantee provision of the funds necessary to effect restoration.

<sup>221</sup> Welsh Government, *Coal Extraction in Wales: The Existing Impact Evidence*, (2019) p 9, <https://gov.wales/sites/default/files/consultations/2020-06/wardell-armstrong-coal-extraction-impact-report.pdf> (last visited 15 March 2021).

<sup>222</sup> See, for example, the debate in Parliament in 2015 on the problem: *Hansard* (HC) 29 January 2015, col 591, col 1090, [https://hansard.parliament.uk/Commons/2015-01-29/debates/15012952000001/Open-CastCoalSites\(Restoration\)](https://hansard.parliament.uk/Commons/2015-01-29/debates/15012952000001/Open-CastCoalSites(Restoration)) (last visited 16 March 2021). Examples given include Dynant Fawr in Wales, and East Ayrshire in Scotland. In the case of East Ayrshire, almost 20 square km of unrestored land had been abandoned by 2015. The cost of restoring the area was estimated at £160 million, and the bond available was £28 million.

become permanent when the bond provided by the mine operators is insufficient to cover the cost of backfilling the void.<sup>223</sup>

- 3.64 Recent practice to prevent this has been to include a condition in section 106 planning agreements preventing sale by the operator until after completion of the after-care requirements for the mine. Recent section 106 agreements include an agreed cost of restoration and set a figure for annual contributions to a restoration fund.

### Shell companies

- 3.65 Another problem has been the sale of the land and liabilities associated with open cast mines to foreign-owned shell companies.<sup>224</sup> The tips have been abandoned without compliance with any of the duties set out in the mining licence, planning consents and environmental permits; enforcement of the duties against the shell company has not been possible.
- 3.66 Four open cast mining sites formerly operated by Celtic Energy in the Kenfig area provide an example. When the company ceased mining, large depressions containing spoil were left in the land. The cost of restoring just one of the sites, East Pit site, was estimated at £115 million. In 2010 the company sold the land rights and liabilities at East Pit and three other mines to a company in the British Virgin Islands called Oak Regeneration for £1 per mine. Oak Regeneration passed the liabilities to Pine Regeneration, Beech Regeneration and Ash Regeneration, none of which had assets available for restoration work. Those involved in the transfer, including two directors of Celtic Energy, were charged with conspiracy to defraud Neath Port Talbot, Bridgend and Powys Councils and the Coal Authority, but the prosecution failed.<sup>225</sup> The judge found that while some might regard their actions as dishonest, they were not illegal. Liability to restore the land was avoided.<sup>226</sup>

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<sup>223</sup> The tips then become disused tips within the definition of Part 2 of the Mines and Quarries (Tips) Act 1969. See ch 4.

<sup>224</sup> See for example Welsh Government, *Research into the failure to restore opencast coal sites in South Wales* (2014) p 35, <https://gov.wales/sites/default/files/publications/2019-07/failure-to-restore-opencast-coal-sites-in-south-wales.pdf> (last visited 16 March 2021). The report sets out the need for performance bonds to cover the cost of restoration and after-care of mine sites.

<sup>225</sup> BBC News, *Celtic Energy and M & A Solicitors staff cleared as fraud case is thrown out* (2014) <https://www.bbc.co.uk/news/uk-wales-south-east-wales-26245865> (last visited 16 March 2021).

<sup>226</sup> G Monbiot, "Big Coal's big scam: scar the land for profit, then let others pay to clean up"(2015) *Guardian*.

## Chapter 4: The Aberfan disaster and the Mines and Quarries (Tips) Act 1969

- 4.1 This chapter will focus on the development of the first legislation to provide for the stability and safety of mineral waste in the UK, the Mines and Quarries (Tips) Act 1969, enacted in response to the Aberfan disaster. It will consider how the disaster shaped the Act, and the extent to which its distinction between tips associated with active and with abandoned mines still governs coal tip safety. The chapter summarises the original provisions of the Act, in particular Part 2 (still in force) governing disused tips. Finally, the chapter sets out the regime under the Mines Regulations 2014<sup>227</sup> and the Quarries Regulations 1999,<sup>228</sup> which have replaced Part 1 of the Act.
- 4.2 The chapters which follow will build on this by looking at two further themes. The first of them will consider other areas of law of relevance to coal tip safety, and the impact on future reforms of recent legislation in Wales setting overarching principles for policy-making in relation to the environment and future development. The second looks at the position of a tip owner from the perspective of civil and criminal liability in the event of an incident.

### THE ABERFAN DISASTER AND THE DISASTER TRIBUNAL

- 4.3 There were seven coal tips above the village of Aberfan in the Taf valley, formed between 1914 and 1966. Tip seven was the final tip to be formed; it contained 297,000 cubic yards of waste and was 111 feet high, equivalent to a ten-storey building. The biggest tip was tip five, which measured 706,000 cubic yards and 171 feet in height.
- 4.4 On the morning of 21 October 1966, a stream of slurry from tip seven slid rapidly down the side of Merthyr Mountain. It overwhelmed two farm houses, killing the occupants, before destroying a school and eighteen houses and damaging another school. One hundred and nine children, mostly between the ages of seven and ten, and five teachers were killed inside Pantglas school. Residents, miners and first responders rushed to the school and began digging through the rubble and rescuing children. Nobody was dug out alive after 11 am. Five children were rescued having been shielded by the body of Nansi Williams, the dinner lady. In total, 144 people were killed.
- 4.5 In response to the disaster, the Government established the Aberfan Disaster Tribunal which was chaired by Lord Justice Edmund Davies.<sup>229</sup> The tribunal found that the biggest contributing factor to the tip slide was the water that flowed through the tip from the streams below it, together with rainfall. The streams beneath the tip were well

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<sup>227</sup> Mines Regulations 2014/3248.

<sup>228</sup> Quarries Regulations 1999/2024.

<sup>229</sup> Report of the Tribunal appointed to inquire into the Disaster at Aberfan on October 21st, 1966, <http://www.mineaccidents.com.au/uploads/aberfan-report-original.pdf> (last visited 4 March 2021).



known; as the tribunal pointed out, the tipping team used to drink water from the bottom of tip seven and children used to dig ponds at the bottom of the tip. In addition, subsidence beneath the tip caused by mining operations was found to have allowed water to collect under the tip.

- 4.6 The tribunal found that fears about the stability of the tip had been expressed prior to the disaster, and that fear of the colliery closing had dissuaded many (such as the then MP for Merthyr Tydfil) from pursuing these concerns. It also found that there had been no regular inspection of the tips, and that the inspections that had occurred were not concerned with stability. The National Coal Board (NCB) had lied about this to the Merthyr Tydfil Borough Council.
- 4.7 It was also found that no tip safety legislation existed in the world other than in West Germany and South Africa. The most recent British mining legislation at the time was the Mines and Quarries Act 1954, which did not cover tip safety. The 1954 Act was based on the 1938 report of the Royal Commission on Safety in Mines, which did not mention tips at all (and by the time of the Act was extremely outdated, setting standards for pit ponies instead of the conveyor belts in widespread use by 1954).<sup>230</sup> The Mines Inspectorate was also found not to have considered tip safety, which it said was because no loss of life had occurred until 1966. This statement was incorrect; as mentioned in chapter 2, there had been a fatality due to a tip slide in 1909 in Pentre; the tribunal was not aware of this. The tribunal also found that a senior inspector was entirely unaware of the 1944 major tip slip at Aberfan until after the 1966 disaster.
- 4.8 The tribunal concluded that the legal liability of the NCB was incontestable under the rule in *Rylands v Fletcher*.<sup>231</sup> In discussing the blameworthiness of the NCB, the tribunal examined letters sent between the local authority and the NCB, expressing fear that the slurry being tipped above Pantglas school could slip. In addition, in 1963 an engineer had expressed concerns over the stability of the tips in stormy weather. Twice in 1963, a slide occurred from tip seven itself. The NCB denied that any slides had occurred, stating that there had merely been a “tailings run”. Further, it was found that, in 1966, the tip had been moving and sinking for months before the disaster. The tribunal found that the blame for the disaster rested upon the NCB, its South Western Divisional Board and other individuals mentioned in the report.
- 4.9 The tribunal recommended, first, that immediate work be done to secure the remaining tips above Aberfan (which was complicated by the fact that tip 5 was still burning).<sup>232</sup> It was suggested to the tribunal that no further tips should be created above Aberfan and that the waste should be stored underground; the tribunal felt unable to recommend this as it would be too costly for the mining industry and the dust created could cause respiratory diseases. The tribunal highlighted, however, that all tips should be regarded as potentially dangerous and treated as engineering

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<sup>230</sup> Report of the Royal Commission on Safety in Coal Mines (1938) Cmd 5890.

<sup>231</sup> *Rylands v Fletcher* (1866) LR 1 Ex 265, (1868) LR 3 HL 330. The tribunal also quoted the 1921 case of the Pentre landslide discussed at paras 6.7 to 6.9 below. For a further discussion of liability under this rule, see ch 6.

<sup>232</sup> Coal tip combustion at Aberfan is discussed at para 2.64 above.



structures. It further suggested an overhaul of the system of communication within the NCB.

- 4.10 In addition, the tribunal recommended the creation of a National Tip Safety Committee, which would introduce guidance on standards of safety, and made several other recommendations to ensure the future safety of tips.
- 4.11 The NCB paid out £500 for each fatality plus compensation for damaged property and traumatised survivors.

#### **PARLIAMENTARY DEBATES LEADING TO THE MINES AND QUARRIES (TIPS) ACT 1969**

- 4.12 The Mines and Quarries (Tips) Act 1969 was enacted in response to the tribunal's findings. Consideration of the context in which the Bill was drafted is important in order to understand how and why the Act has aged.
- 4.13 From debates on the Bill in 1968 it was clear that the Bill was intended to complement an active mining industry. Part 1 set standards for tips associated with active mines, whereas Part 2 dealt separately with disused mines. The Minister of Power (Roy Mason MP) presented the Bill as follows:

The Bill is designed to deal with all accumulations of solid or liquid refuse from mines and quarries. Part I is in effect an extension of the Mines and Quarries Act, 1954, and deals with all tips whether working or not, associated with mines and quarries at present subject to the Act and as such under the supervision of HM Inspectors of Mines and Quarries. Part II of the Bill is concerned with tips belonging to mines and quarries which have been abandoned and are no longer under that supervision. The provisions of each Part, are therefore, somewhat different though the objective is the same—to eliminate hazards arising from the sort of instability which caused the disaster at Aberfan.<sup>233</sup>

- 4.14 It was clear in the debate that active tips were considered to be more dangerous than disused tips. In relation to Part 2 of the Bill the Minister of Power said:

It covers the many thousands of tips belonging to abandoned mines and quarries from earliest times—the chalk heaps made by Stone Age man in his search for flints, the spoil left by the Phoenicians in search of tin, and the large pit heaps made before and since the Industrial Revolution. Many tips are no longer recognisable as such; they have been overgrown with vegetation and have long formed part of the landscape. Others are more recent. But with the passage of time, most of these tips have become increasingly stable, thanks to natural consolidation. The surveys that have been carried out since Aberfan indicate that only a very small proportion could present any hazard to members of the public. But because nothing can be certain,

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<sup>233</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1139, [https://hansard.parliament.uk/Commons/1968-11-07/debates/c1ce43ba-6c55-4d71-a319-f0a0796daaa8/MinesAndQuarries\(Tips\)Bill?highlight=coal%20tip#contribution-d098fc37-a2dc-40f3-9fb2-05581eaefe2d](https://hansard.parliament.uk/Commons/1968-11-07/debates/c1ce43ba-6c55-4d71-a319-f0a0796daaa8/MinesAndQuarries(Tips)Bill?highlight=coal%20tip#contribution-d098fc37-a2dc-40f3-9fb2-05581eaefe2d) (last visited 16 March 2021).

we have felt it necessary to give local authorities powers to identify and deal with any tips that give grounds for anxiety and to make provision for Exchequer grants.<sup>234</sup>

4.15 Colonel CG Lancaster MP (South Fylde) expressed the view that:

We should be ill-advised to take the attitude from Aberfan onwards that tips are immensely dangerous things; they are not.<sup>235</sup>

4.16 However, there was a dissenting opinion voiced by Arthur Probert MP (Aberdare):

[T]here are a number of coal tips in my area, one of which recently started to move, thereby causing great anxiety.

My right hon. Friend the Minister of Power has said that trouble is invariably caused by active working tips. I have a theory that many tips which are now 40 or 50 years old are reaching a stage at which trouble can arise. The tip to which I have referred already was last tipped upon 50 years ago. It still has trees between 50 ft. and 100 ft. high on it. We should look more closely at tips which are not actively working, as well as keeping under observation those which are.<sup>236</sup>

4.17 The only member to contradict the belief that prior to Aberfan there had been no fatalities was Fred Evans MP (Caerphilly):

Although hon. Members have pointed out that there have not been disasters before on the scale of Aberfan—indeed, there have been instances of loss of life—there have been great social disasters arising from these tips—flooding of houses with mounds of slurry carried down, the destruction of furniture and the blocking of roads and sewers—and huge sums have had to be paid by local authorities to deal with these matters.<sup>237</sup>

4.18 Also, in discussing the Bill, many Members expressed the hope that it would be a first step only, with more legislation to follow to combat the environmental and landscaping issue of coal tips. Fred Evans MP said:

I, too, hope that the Bill is only a first step. The basis of this Measure is security. I hope that there will be a second stage, when we can make an imaginative approach to the whole business of industrial scars, and consider, in particular, my country with its glorious valleys. Sometimes when I look at it, and in my imagination get rid of the industrial scars, I see some of the most desirable commuter country that I have ever seen. I welcome the Bill, but I ask my right hon. Friend to consider the points which I have raised.<sup>238</sup>

4.19 Emlyn Hooson QC MP (Montgomery) echoed this:

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<sup>234</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1141.

<sup>235</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1153.

<sup>236</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1164.

<sup>237</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1159.

<sup>238</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1160.

There should be a national campaign to restore these areas to their former greenness.... The hon. Member for Bassetlaw (Mr. Ashton) said that he did not have the same problem, because the land around his constituency is level. But when I look at the valleys in Wales I always think how beautiful they must have been. I am sure that with modern techniques and determination they can be restored to their former beauty. The community has a duty to see that this is done.<sup>239</sup>

- 4.20 Further, it was envisaged that assistance would be provided to local authorities. Arthur Probert MP suggested the following approach:

In the general supervision of tip removal I suggest that the officers of the National Tip Safety Committee should have power to assist local authorities in enforcing the observance of certain conditions. This would be of considerable assistance to local authorities. I know that the Committee is considering a standard code of practice....<sup>240</sup>

- 4.21 The National Tip Safety Committee (the Committee) was established in March 1968, and was composed of engineers, surveyors and members of the NCB.<sup>241</sup> However, the Committee was never written into the Bill: the clause to effect this was not passed. The reason for this was set out by the Minister of Power:

I want to spell out briefly that there is no need for the Clause. First, the Tip Safety Committee will remain in being as long as there is work for it to do. It will be helping with the preparation of regulations. Then it will be advising on any changes that may be necessary in the light of its experience or knowledge. Secondly, I gave strong assurances in Standing Committee—I refer hon. Members to columns 16–17 of the OFFICIAL REPORT of 19th November—that the Committee would be consulted on the many regulations that we may have to frame following the Bill. These regulations will necessarily be drafted against a civil engineering background. It is in their preparation that the Committee can make one of its most effective contributions.

The hon. Member for Bournemouth, West (Sir J. Eden) argued that because of its background the Committee can be useful as distinct from the Mines Inspectorate. Therefore, it will be kept on as long as it can give advice and guidance to me, and possibly long after the regulations have been framed. Thirdly, it is unusual for advisory committees to be mentioned in a Statute. My Nuclear Safety Advisory Committee and my Advisory Committee on Research and Development have no statutory existence, but they are none the worse for that. Fourthly, the present arrangement allows the maximum flexibility both in the Committee's terms of reference and in its composition to meet the changing circumstances.

Therefore, although fears may be expressed based on the Committee's not having a statutory base, I assure the House that the Committee will remain in being for as long as there is work for it to do. It is pressing ahead with its notes for guidance of local authorities, which will be an extensive and detailed document. I hope that it will

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<sup>239</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1158.

<sup>240</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1165.

<sup>241</sup> *Hansard* (HC) 20 March 1968, vol 761, col 123.

not be long before it is available. The National Coal Board has already produced its code of practice on tipping operations, which in itself is a mammoth document.<sup>242</sup>

4.22 We have not been able to find any other reference to the Committee or to guidance produced by it. It may be that the Committee was disbanded soon after the Act was passed.

4.23 Peter Emery MP (Honiton) suggested that the Mines Inspectorate should be on hand to assist local authorities. It appears that this was envisaged as an acceptable alternative safeguard:

Where remedial action is required by a local authority I consider that the views of the Inspectors of Mines and Quarries should be obtained. What I have in mind as a suggestion is that, before the service of any notice under Part II by a local authority for remedial action, or before any action is taken on remedial work by or on behalf of a local authority, the local authority should obtain the agreement of the Inspectorate of Mines and Quarries to the specific work in question.<sup>243</sup>

4.24 The Secretary of State for Wales (George Thomas MP) agreed that “local authorities will be able to call on the full expertise of Her Majesty’s Inspectorate of Mines and Quarries”, envisaging a future in which there would be significant support afforded to local authorities and expertise available. This expertise was to be further assured by the inclusion of tip safety in the programmes of technical colleges and universities:

The Mining Qualifications Board, which I appoint, has been looking into the wider question of training in soil mechanics and related subjects for those engaged in mining and quarrying. The co-operation of universities, technical colleges, the Institution of Mining Engineers and the Institute of Quarrying will ensure that engineers in these industries will in future receive instruction in soil mechanics as part of their normal training.<sup>244</sup>

4.25 If a tip was privately owned, it was intended that the tip owners would bear responsibility:

The powers which the Bill will confer on local authorities are powers to obtain information, enter land and carry out tests to determine whether a tip constitutes a hazard by reason of its instability. If it does, there is power for the local authority to require the owner to carry out remedial operations, or, if the authority prefers to do the work itself, it may do so. The cost of such remedial operations, and of any damage caused by them, will fall upon the owner of the tip, but the Bill also provides that the owner or the local authority may recover the whole or part of these costs from other persons whose action may have contributed to the unsatisfactory condition of the tip.<sup>245</sup>

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<sup>242</sup> *Hansard* (HC) 21 January 1969, vol 776, col 395.

<sup>243</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1187.

<sup>244</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1139.

<sup>245</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1141.

- 4.26 The Secretary of State for Wales was categorical that “the intention of the Bill is that the main responsibility must fall on the owners of the tip”.<sup>246</sup> Arthur Probert MP, however, envisaged problems for local authorities if ownership of tips was uncertain or owners disengaged:

I am a little perturbed at the possibility of Part II presenting a problem in respect of the responsibilities of local authorities. If an owner cannot be traced, or knows nothing about his tip being made safe, the local authority will have to use its default powers. If it is subsequently shown to be dilatory, technically speaking, and a serious accident occurs, the local authority will be blamed. Acceptance by local authorities of liability must be conditional on their having the services of the Mines Inspectorate for reports on the condition of disused pits.<sup>247</sup>

- 4.27 In response to the Aberfan disaster the Mines (Notification of Dangerous Occurrences) Order 1959 was amended to require that any movement of tips was reported to the Mines Inspectorate:

On 1st November, last year, two Orders came into force amending the Mines (Notification of Dangerous Occurrences) Order 1959, and the corresponding Order relating to quarries. They require that any movement of material, or any fire, or any other event indicating that a tip or settling pond belonging to a mine is or is likely to become unstable, must be reported to Her Majesty's Inspector of Mines and Quarries for the district. Even that is quite an advance. Many is the time when we in mining areas have glanced anxiously at smouldering muck stacks near our villages.<sup>248</sup>

- 4.28 This emphasises the role envisaged for the Mines Inspectorate and the assistance it was to give to local authorities or private owners.
- 4.29 It is against this backdrop that the Act was created; faith in the help provided by an active industry, particularly to local authorities, the belief that disused tips were unlikely to slide, and the hope that there would be further legislation to combat the environmental issues caused by the tips. Parliament could not have predicted the changes that would lead to nearly all tips becoming disused. It also could not have foreseen the environmental challenges that have affected their stability.

## THE MINES AND QUARRIES (TIPS) ACT 1969

- 4.30 The Mines and Quarries (Tips) Act 1969 applied to all tips associated with mines and quarries, not only to coal tips. The 1969 Act was to be construed as one with the Mines and Quarries Act 1954, itself a consolidation of previous mining legislation dating back to 1842. The 1954 Act provided for the management and control of mines and quarries and for securing the safety, health and welfare of those employed in them. It included provision for fencing abandoned and disused mines and of quarries. It did not specifically apply to coal tips. The only reference to a tip was in an interpretation section, which stated that “premises for the time being used for

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<sup>246</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1198.

<sup>247</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1166.

<sup>248</sup> *Hansard* (HC) 7 November 1968, vol 772, col 1138 (the Minister of Power).

depositing refuse from a ... mine or quarry ... shall be deemed to form part of that mine or quarry”.<sup>249</sup> Most of the 1954 Act has now been repealed.

4.31 The 1969 Act defined a tip as:

an accumulation or deposit of refuse from a mine or quarry (whether in a solid state or in solution or suspension) other than an accumulation or deposit situated underground, and where any wall or other structure retains or confines a tip then, whether or not that wall or structure is itself composed of refuse, it shall be deemed to form part of the tip for the purposes of this Act.<sup>250</sup>

4.32 The distinction drawn in Parts 1 and 2 of the 1969 Act, between tips associated with active and with disused mines set in place an approach to the regulation of tips which continues to this day. Part 1 of the Act set out detailed duties for the inspection and management of “active tips” and “closed tips”.<sup>251</sup> Active tips were defined as those on premises forming part of an operational mine or quarry. Closed tips were defined as those not on such premises but where the mine or quarry with which the tip is associated has not been abandoned and the premises on which it is situated continue to be occupied exclusively by the owner of that mine or quarry.<sup>252</sup> The successor legislation is discussed below.<sup>253</sup>

### **The Mines and Quarries (Tips) Regulations 1971**

4.33 The Mines and Quarries (Tips) Regulations 1971 (which are no longer in force) were made under the Mines and Quarries Acts 1954 and 1969 and set out duties in relation to the drainage, supervision, maintenance and inspection of all active and closed tips to which Part 1 of the 1969 Act applied. They also created an enhanced regime for “classified” tips, which were those which, by reason of their size or location, were more likely to present a potential hazard. These were defined in Regulation 2 as any tip falling into the following classes:

- (a) the tip consists of refuse accumulated or deposited wholly or mainly in a solid state and not in solution or suspension and—
  - (i) the superficial area of the land covered by the refuse exceeds 10,000 square metres; or
  - (ii) the height of the tip exceeds 15 metres; or

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<sup>249</sup> Mines and Quarries Act 1954, s 180(4).

<sup>250</sup> Mines and Quarries (Tips) Act 1969, s 2(1). This definition includes mine tailings lagoons. The Reservoirs Act 1975 distinguishes mine or quarry lagoons from reservoirs. The 1975 Act defines a “reservoir” as “a reservoir for water as such (and accordingly does not include a mine or quarry lagoon which is a tip within the meaning of the Mines and Quarries (Tips) Act 1969)”.

<sup>251</sup> Part 1 was repealed and replaced by the Mines Regulations 2014, which are considered at paras 4.63 to 4.72 below.

<sup>252</sup> Mines and Quarries (Tips) Act 1969, s 2(2).

<sup>253</sup> See paras 4.63 to 4.75 below.

- (iii) the average gradient of the land covered by the refuse exceeds 1 in 12;
- (b) the tip consists of refuse accumulated or deposited wholly or mainly in solution or suspension and—
  - (i) any part of the tip (other than any wall or other structure retaining or confining it but including any liquid in it) is more than 4 metres above the level of any part of the neighbouring land within 50 metres of the perimeter of the tip; or
  - (ii) the volume of the tip (other than any wall or other structure retaining or confining it but including any liquid in it) exceeds 10,000 cubic metres:

Provided that for the purposes of determining whether refuse has been accumulated or deposited wholly or mainly in a solid state or wholly or mainly in solution or suspension any wall or other structure retaining or confining the tip shall be excluded.

4.34 The Regulations imposed stricter requirements for the design, construction, operation and closure of classified tips. Where a classified tip was proposed, accurate plans were to be prepared and a report from a competent person obtained to confirm the suitability of the land for the proposed operation.<sup>254</sup> For those tips which fell within the category of active classified tip, there was a weekly duty of inspection, including of drainage and of all matters required by the tipping rules made for active classified tips pursuant to the regulations.<sup>255</sup> For closed classified tips, there was a duty to inspect the tips at intervals of either six or twelve months, depending on the material composition of the tip.<sup>256</sup> Provision was also made in respect of active classified tips for reports on specified matters, records of the refuse tipped, and notification of changes to design or specification.<sup>257</sup> For closed classified tips, reports on specified matters were to be made at intervals of 5 or 10 years, depending once again on the composition of the tip, and specified records and plans kept.<sup>258</sup>

4.35 While these Regulations are no longer in force, they are regarded by the Coal Authority as establishing best practice and are followed in maintaining the disused coal tips for which they are responsible.<sup>259</sup>

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<sup>254</sup> Mines and Quarries (Tips) Regulations 1971, reg 9.

<sup>255</sup> Mines and Quarries (Tips) Regulations 1971, reg 11.

<sup>256</sup> Under reg 17, inspections were required at six month intervals if the tips were mainly refuse in solution and every twelve months if the tip was mainly solid.

<sup>257</sup> Mines and Quarries (Tips) Regulations 1971, regs 12 to 15.

<sup>258</sup> Mines and Quarries (Tips) Regulations 1971, regs 18 to 20.

<sup>259</sup> Information provided to the Law Commission by the Coal Authority and see <https://www.gov.uk/government/publications/disused-colliery-tips-owned-and-inspected-by-the-coal-authority> (last visited 26 March 2021).

## The Part 2 regime for disused tips

4.36 Part 2 of the 1969 Act, which remains in force, introduced rules around the “prevention of public danger from disused tips”. A disused tip was originally defined as a tip to which Part 1 of the Act did not apply.<sup>260</sup> In sum, a disused tip is one associated with a mine or quarry that has been abandoned.

4.37 Part 2 confers powers on local authorities to ensure that disused tips do not, by reason of instability, pose a threat to the public.<sup>261</sup> Under these powers local authorities can gain access to information about tips and have a right of entry to carry out exploratory tests. Section 36 provides, for the purposes of Part 2, that a disused tip is to be treated as unstable

if and only if there is, or there is reasonable ground for believing that there is likely to be, such a movement of the refuse which makes up the tip as to cause a significant increase in the area of land covered by the tip.

4.38 Section 12(1) provides:

For the purpose of enabling a local authority to assess whether a disused tip which is situated wholly or partly within its area is stable and whether any instability of the tip is or is likely to constitute a danger to members of the public, the local authority may, by notice served on the owner of the tip or on any other person who the authority has reason to believe may be able to assist it, require him, within such time, not being less than fourteen days, as may be specified in the notice, to produce to the authority such documents in his possession or control (whether in the form of maps, surveys, plans, records of work or otherwise and whether relating to the tip itself or the land on which it is situated) as may be so specified.

4.39 A failure to comply with a notice without reasonable excuse is punishable by a fine. There is further provision for criminal liability if false information is produced knowingly or recklessly.<sup>262</sup>

4.40 Section 13 provides a right of entry to carry out exploratory tests to determine whether the tip poses a threat to public safety:

(1) ... a person duly authorised in writing by a local authority may at any reasonable time enter upon the land on which a disused tip is situated or upon any neighbouring land—

(a) for the purpose of investigating whether any instability of the tip might constitute a danger to members of the public;

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<sup>260</sup> Mines and Quarries (Tips) Act 1969 s 11. The section was amended by the Mines Regulations 2014 so as (a) to define a disused tip as a tip to which the Quarries Regulations 1999 and the Mines Regulations 2014 do not apply and (b) to bring the definition of a tip from the (repealed) section 2 into this section.

<sup>261</sup> Mines and Quarries (Tips) Act 1969 s 11, as amended by the Local Government (Wales) Act 1994, defines a local authority in Wales as the council of a county or county borough.

<sup>262</sup> Mines and Quarries (Tips) Act 1969, s 12(2).



(b) for the purpose of carrying out any operations (in this Part of this Act referred to as “exploratory tests”) which, in the opinion of the local authority, are necessary to determine whether the tip is unstable; and

(c) for the purpose of inspecting any operations which are being carried out on that land where those operations may affect the stability of the tip;

but, subject to the following provisions of this section, a person so authorised shall not demand admission as of right to any land which is occupied unless at least forty-eight hours' notice in writing of the intended entry has been given to the occupier.

4.41 There is also a power to apply for a warrant if admission is refused or apprehended, or the owner is temporarily absent. The warrant permits entry by force if necessary.<sup>263</sup>

4.42 For the purposes of Part 2, the “owner” is defined in England and Wales as the person who has a legal estate in the land on which the tip is situated which:

(1) is either the fee simple or a tenancy for a specific term which has not less than one year unexpired and is not a mortgage term; and

(2) is not in reversion expectant on the termination of such a tenancy.<sup>264</sup>

The effect of this is that the “owner” can be (a) a freeholder who has not granted a lease, (b) a tenant who has been granted a tenancy for a term of any length, provided that, at the relevant date, the term has at least a year to run or (c) a freeholder who holds the reversion of a lease which, at the relevant date, has less than year to run.<sup>265</sup> The grant of a 99-year lease will make the leaseholder the “owner” for the first 98 years and the freeholder the “owner” for the final year but, equally, the grant of a two-year lease will make the leaseholder the “owner” for the first of those years and the freeholder the “owner” for the second.

4.43 Where there is reasonable ground to believe that a disused tip is unstable and immediate entry is required, section 13 (4) gives the local authority the power to enter the land without giving notice or obtaining a warrant:<sup>266</sup>

If a local authority has reasonable ground for believing that a disused tip is unstable and that possible danger to members of the public requires an immediate entry on to any such land as is referred to in subsection (1) for one or more of the purposes specified in that subsection, a person duly authorised in writing by the local authority may, at any time and without giving notice or obtaining a warrant under this section, enter upon the land for that purpose (or those purposes).

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<sup>263</sup> Mines and Quarries (Tips) Act 1969, s 13(2).

<sup>264</sup> Mines and Quarries (Tips) Act 1969, s 36(3)(a). The term “reversion” refers to control of the land reverting to the freeholder when a lease expires.

<sup>265</sup> For simplicity, this assumes that there are no intermediate leases. An intermediate leaseholder could be the “owner” where their lease had more than a year to run and a sub-lease had less.

<sup>266</sup> Mines and Quarries (Tips) Act 1969, s 13.

4.44 Wilful obstruction of entry is punishable by a fine.<sup>267</sup>

4.45 Where “it appears to a local authority that a disused tip situated wholly or partly within its area is unstable and, by reason of that instability, constitutes or is likely to constitute a danger to members of the public”,<sup>268</sup> section 14 empowers the authority to serve a notice on the owner, as defined by section 36, requiring them to carry out remedial works within a stipulated time to ensure the stability of the tip. The period within which the works are to be carried out must begin no earlier than 21 days after the date of service of the notice. The notice must also be served on any other person in occupation of the whole or part of the land on which the works are to be carried out, and any other person who, to the knowledge of the local authority, has an interest in the land, or had such an interest in any time within 12 years preceding the date of the service of the notice on the owner of the tip. It must also be served on any other person who, to the knowledge of the local authority, has an interest in the material comprised in the tip, has used the tip for the purpose of depositing refuse from a mine or quarry within the previous 12 years, or has, within the same period, caused or contributed to the instability of the tip.<sup>269</sup>

4.46 Section 14(5) permits the owner to serve a counter-notice requiring the local authority to use its own powers (under section 17, considered further below) to carry out the work:

Where a local authority serves a notice under this section on the owner of a disused tip, then, within the period of twenty-one days beginning with the day on which the notice was served, the owner may serve a counter-notice under this subsection in the prescribed form requiring the local authority to exercise its powers under section 17; and where such a counter-notice is served—

(a) the local authority shall serve a copy of the counter-notice on every person on whom, under subsection (4), it served a copy of the notice under this section;

(b) the notice under this section and any copy thereof served under subsection (4) shall be deemed for the purposes of the following provisions of this Part of this Act never to have been served; and

(c) the local authority shall, as soon as reasonably practicable, exercise its powers under section 17 in relation to the disused tip in question.

4.47 Section 15 gives the owner a right of appeal against a section 14 notice, exercisable within 21 days of the service of the notice, in the form of an application to the court<sup>270</sup> for an order to vary or cancel the notice on one or more of the following grounds:

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<sup>267</sup> Mines and Quarries (Tips) Act 1969, s 13(6).

<sup>268</sup> Mines and Quarries (Tips) Act 1969, s 14(1).

<sup>269</sup> Mines and Quarries (Tips) Act 1969, s 14(4).

<sup>270</sup> Originally defined as the High Court (Mines and Quarries (Tips) Act 1969, s 28(1)), but extended to include the county court by the Courts and Crime Act 2013.

(a) that there is no reasonable ground for believing that the tip is unstable or that, by reason of instability, the tip constitutes or is likely to constitute a danger to members of the public;

(b) that the remedial operations specified in the notice are more extensive than is necessary to secure the safety of members of the public;

(c) that the stability of the tip could be ensured by the carrying out of operations different, in whole or in part, from the remedial operations specified in the notice and that the owner is prepared to undertake those alternative operations;

(d) that the owner or some other person has already begun, or has entered into a contract with a third party to begin, operations different, in whole or in part, from the remedial operations specified in the notice and those alternative operations will ensure the stability of the tip;

(e) that the time within which the remedial operations are to be carried out is not reasonably sufficient for the purpose;

(f) that there is some defect or error in, or in connection with the notice.

4.48 If the court is satisfied that the ground or any of the grounds is made out, it may make an order varying or cancelling the notice. The period specified in the notice for completion of the works is extended until the final determination of the application.

4.49 Section 17 provides the local authority with a power to carry out works itself, subject to service of a notice on the owner and a 21 day notice period, save where it considers that there is immediate danger to the public:<sup>271</sup>

(1) Where a local authority considers that such circumstances exist as are specified in section 14(1) then, instead of serving a notice under that section requiring the owner of the disused tip in question to carry out remedial operations, the authority may itself carry out remedial operations and any works of reinstatement reasonably necessary in consequence of the carrying out of those remedial operations.

(2) Subject to subsection (3), where a local authority proposes to carry out remedial operations under subsection (1) in relation to a disused tip it shall, not less than twenty-one days before the operations are begun, serve notice on the owner of the tip of its intention to carry out the operations, specifying the nature and extent of the operations and of any consequential works of reinstatement which it proposes to carry out.

(3) If a local authority has reasonable ground for believing that a disused tip is unstable and that possible danger to members of the public requires the immediate carrying out of remedial operations, it may begin operations under subsection (1) forthwith, notwithstanding that no notice under subsection (2) has been served or that less than twenty-one days has elapsed since the service of such a notice; but if no such notice has been served at the time the remedial operations are begun, then, as soon thereafter as is reasonably practicable, the local authority shall serve notice

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<sup>271</sup> Mines and Quarries (Tips) Act 1969, s 17.

on the owner of the tip of the commencement of the operations, specifying the nature and extent of the operations and of any consequential works of reinstatement which it proposes to carry out.

- 4.50 The local authority has a right of entry to carry out the remedial works. Notice in writing of the intended entry must be given to the occupier 24 hours in advance, with a power to apply for a warrant if entry is refused or the owner is temporarily absent, save where the local authority considers that there is an immediate danger within the terms of section 17(3).<sup>272</sup>
- 4.51 The Act makes somewhat complicated provision regarding payment for the cost of inspections and works. Its main relevant features are as follows. First, under section 23(1) and (2), the local authority has power to recover from the owner the expenses of (among other things) remedial operations carried out by it under section 17, and of exploratory tests which led either to those operations or to a notice under section 14 requiring the tip owner to carry out remedial operations. There is provision for an appeal against a local authority demand.<sup>273</sup>
- 4.52 An owner or local authority carrying out operations under sections 14 or 17 can remove and sell material belonging to others, but must account to them for the proceeds of sale.<sup>274</sup> If a local authority cancels a notice under section 14, the owner may claim expenditure incurred in carrying out operations under it and the provisions on third party contributions (discussed next) are modified.<sup>275</sup> Owners and local authorities are liable to compensate third parties for damage to or disturbance of enjoyment of land in consequence of tests or remedial operations.<sup>276</sup> Local authorities can reclaim this from owners.<sup>277</sup>
- 4.53 A contribution order may be made under section 19, on application by the owner, requiring a contribution from three other categories of parties:
- Where a notice relating to remedial operations at a disused tip has been served on the owner of the tip under section 14 or section 17 and an application is made to the court under this section, the court may order that a contribution towards the expenses otherwise falling to be borne by the owner of the disused tip as a result of the carrying out of the remedial operations shall be made by any one or more of the following persons on whom notice of the application has been served ...<sup>278</sup>
- 4.54 The categories are: any person who has tipped mine or quarry waste onto the tip in the previous 12 years; any person who within those 12 years has, by act or unreasonable omission, contributed to the instability of the tip; and

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<sup>272</sup> Mines and Quarries (Tips) Act 1969, s 18.

<sup>273</sup> Mines and Quarries (Tips) Act 1969, ss 23 and 24.

<sup>274</sup> Mines and Quarries (Tips) Act 1969, ss 14(7), 17(6).

<sup>275</sup> Mines and Quarries (Tips) Act 1969, s 16(4) and sch 4.

<sup>276</sup> Mines and Quarries (Tips) Act 1969, s 20.

<sup>277</sup> Mines and Quarries (Tips) Act 1969, s 23(1)(d).

<sup>278</sup> Mines and Quarries (Tips) Act 1969, ss 19, 21 and 22.

any person who at the date of the service of the notice under section 14 or section 17 had an estate or interest, otherwise than as a mortgagee, in the land on which the tip is situated and any person who had such an estate or interest at any time within the period of twelve years immediately preceding that date.<sup>279</sup>

- 4.55 The court decides whether or not to make a contribution order and fixes the proportions. Section 19(4) sets out a non-exhaustive list of circumstances to which the court is to have regard. These include the extent of the person's use of the tip for tipping, the extent of their contribution to its instability, the nature of their estate or interest in the land containing the tip, whether they disposed of that interest for the purpose of evading liability in relation to the tip and the terms of any covenant, agreement or statutory provision affecting the relative rights and obligations of them and the "owner". This enables the court to mitigate the effect of section 23 upon, for example, a tenant under a short lease.
- 4.56 Where a court has made a contribution order in favour of an owner under section 19, a local authority which has carried out works can claim the contribution directly from the contributory;<sup>280</sup> where the owner who has obtained a contribution order carries out works under section 14, the owner can recover the contribution.<sup>281</sup> Both an owner and a local authority claiming against a contributory must first serve a demand.<sup>282</sup> The demands are appealable.<sup>283</sup>
- 4.57 Section 20 provides for applications for compensation for damage or disturbance caused by remedial operations. It is supplemented by further provision in schedule 3.
- 4.58 The appropriate Minister, with the consent of the Treasury, may make a grant to a local authority towards the expenditure incurred by the local authority in conducting exploratory tests or remedial operations or any consequent works of reinstatement.<sup>284</sup> In Wales, these powers have been transferred to Welsh Ministers and there is no need for consent of the Treasury.<sup>285</sup>
- 4.59 Schedule 2 modifies the provisions of Part 2 in various respects in cases where a local authority is the owner of a disused tip situated wholly or partly within its area.
- 4.60 Crucially, the 1969 Act does not confer a duty on local authorities to inspect and secure disused tips, but merely provides a permissive regime which affords the authorities a wide margin of discretion. A circular issued jointly by the Ministry of Housing and Local Government and the Welsh Office to local authorities in June 1969 underlines the intention behind the legislation. It records that the Advisory Committee on Tip Safety had emphasised the need for regular inspection of disused tips where there would be a danger to the public if they moved. The circular recommended that

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<sup>279</sup> Mines and Quarries (Tips) Act 1969, s 19(1).

<sup>280</sup> Mines and Quarries (Tips) Act 1969, s 23(3).

<sup>281</sup> Mines and Quarries (Tips) Act 1969, s 21.

<sup>282</sup> Mines and Quarries (Tips) Act 1969, ss 21(3) and 23(4).

<sup>283</sup> Mines and Quarries (Tips) Act 1969, ss 22 and 24.

<sup>284</sup> Mines and Quarries (Tips) Act 1969, s 25.

<sup>285</sup> The National Assembly for Wales (Transfer of Functions) Order 1999/672.

local authorities “maintain a list of tips and lagoons which would in their view constitute a danger to members of the public if they failed; and arrange for them to be inspected from time to time for evidence of instability”. The frequency of inspections “should be governed by the possible consequences of failure and by the history and condition of the tip”.

- 4.61 Local authorities were told that they should “so far as possible, rely on their own staff or engage consultants to advise on the stability of a suspect tip”. The circular emphasised that HM Inspectors of Mines and Quarries could give only limited assistance on matters such as the carrying out of exploratory tests, but would not be able to carry out the tests themselves or to supervise remedial measures. Ultimately, the circular explained, the stability of a tip is the responsibility of its owner, who would normally be expected to meet the cost of remedial work. In exceptional circumstances a grant might be available to support remedial work undertaken by local authorities, at the discretion of the Minister and with the consent of the Treasury.<sup>286</sup>

## THE CURRENT REGIME FOR TIPS ASSOCIATED WITH ACTIVE MINES AND QUARRIES

- 4.62 This project covers all coal tips in Wales, including the small number still associated with active mining operations. We therefore set out the legislation that currently applies to those tips.

### Mines Regulations 2014

- 4.63 The Mines Regulations 2014, made under the Health and Safety at Work Act 1974, repealed Part 1 of the 1969 Act.<sup>287</sup> The Regulations brought mining legislation into line with most other health and safety provisions, in that the more prescriptive approach adopted by the 1971 Regulations was replaced by goal-setting provisions.<sup>288</sup>

- 4.64 The definition of a tip given in regulation 2 is similar to that used in the 1969 Act:

an accumulation or deposit of any refuse from a mine (whether in a solid or liquid state or in solution or suspension) other than an accumulation or deposit situated underground, and includes, but is not limited to (a) overburden dumps, backfill, spoil heaps, stock piles and lagoons, and (b) any wall or other structure that retains or confines a tip.

- 4.65 Broadly speaking, as was the case for Part 1, the Regulations apply to tips which form part of an operational mine and the distinct regime created by the 1969 Act for the management of disused tips remains in place. Regulation 4(3) identifies two situations in which a tip falls within their remit:

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<sup>286</sup> Circular 38, 69 (Welsh Office), 25 June 1969.

<sup>287</sup> SI 2014 No 3248. The 2014 Regulations repealed ss 1 to 7 and 10 of the 1969 Act. Ss 8 and 9 had already been repealed by the Mines and Quarries Acts 1954 to 1971 (Repeals and Modifications) Regulations 1974. The effect of the repeal of s 1 (together with the repeal of a saving provision in relation to provisions of the 1971 Regulations made by the 1974 Regulations) was to revoke the 1971 Regulations.

<sup>288</sup> JR Leeming, HM Chief Inspector of Mines, *The Aberfan Disaster and its Legacy*, paper presented at the Aberfan Disaster 50th Anniversary Commemorative Conference in Cardiff on 21 October 2016.

- (1) the tip is on premises which are deemed to form part of a mine; or
  - (2) the tip is not on such premises but the mine with which it is associated has not been abandoned and the premises on which the tip is situated continue to be occupied exclusively by the owner of that mine.
- 4.66 A mine is defined as an excavation or system of excavations made for the purpose of, or in connection with, the extraction, wholly or substantially by means involving persons working below ground.<sup>289</sup>
- 4.67 For tips that fall within the remit of the Regulations, Part 8 imposes a general duty to ensure safety.<sup>290</sup> A mine operator must ensure that a suitable appraisal of all existing or proposed tips is undertaken by a competent person to establish whether the tip is or would be a “significant hazard”.<sup>291</sup> Records must be kept of the findings made during the appraisal. If the tip is not a significant hazard, further appraisals must be carried out at “appropriate intervals”, or whenever there is reason to suspect there has been or will be a change in circumstances affecting the stability of the tip.<sup>292</sup>
- 4.68 If a tip is deemed a “significant hazard”, thus becoming a “notifiable” tip, there is a duty to have a geotechnical assessment by a “geotechnical specialist” repeated every two years. The assessment must include the specialist’s view on safety and stability, including whether it represents a significant hazard by way of instability or movement, whether remedial work is required, the time frame within which this should be completed, and the date by which the next assessment must take place.<sup>293</sup> There is a further duty on the mine operator to conduct a further geotechnical assessment if there is reason to suspect that there has or will be a significant change to relevant considerations or reason to doubt the conclusion of the current assessment.<sup>294</sup>
- 4.69 The mine operator must keep sufficient records of the nature, quantity and location of all substances deposited on a notifiable tip to enable an accurate assessment of stability to be made.<sup>295</sup>
- 4.70 Tips rules must be made by the mine operator which provide for the safe construction and operation of the tips. These must include provision for the nature and extent of

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<sup>289</sup> Mines and Quarries Act 1954, s 180 as substituted by sch 5 to the Mines Regulations; Mines Regulations 2014, reg 3.

<sup>290</sup> Defined by reg 60 as “a duty to ensure that (a) instability or (b) movement which is likely to give rise to a risk to the health and safety of any person is avoided”.

<sup>291</sup> Defined by reg 63 as “a significant hazard by way of instability or movement”.

<sup>292</sup> Mines Regulations 2014, reg 61. A competent person is defined in reg 2 as a person “with sufficient training and experience, or knowledge and other qualities, to enable that person properly to undertake the duties assigned to that person”.

<sup>293</sup> Mines Regulations 2014, reg 62. For the purposes of Part 8, reg 62 stipulates that a “geotechnical assessment” means an assessment carried out by a geotechnical specialist identifying and assessing all factors liable to affect the stability and safety of a proposed or existing tip; and a “geotechnical specialist” means a person who is suitably qualified and competent to perform a geotechnical analysis to determine the hazard and risk arising from the tip being assessed.

<sup>294</sup> Mines Regulations 2014, reg 63.

<sup>295</sup> Mines Regulations 2014, reg 64.

supervision of their construction and operation, and the precautions to be taken to ensure both health and safety and the safety and stability of the tip.<sup>296</sup>

- 4.71 The Regulations cease to apply once, on the direction of the Health and Safety Executive, the tip ceases to be part of the mine,<sup>297</sup> or notice of abandonment of the mine has been given,<sup>298</sup> which leaves a disused tip under the regulatory framework set out in Part 2 of the 1969 Act. However, the mine operator must keep every report or record made under the Regulations at the mine or other suitable place for at least three years from the date it was made,<sup>299</sup> and, at the time of the abandonment of a tip, an accurate plan of the abandoned tip must be provided to the Health and Safety Executive.<sup>300</sup>
- 4.72 HM Inspectorate of Mines, a part of the Regulatory Directorate of the Health and Safety Executive, is responsible for the inspection of mines and the correct implementation of the Regulations.

### Quarries Regulations 1999

- 4.73 The Quarries Regulations 1999, also made under the Health and Safety at Work Act 1974 and overseen by the Health and Safety Executive (HSE), provide a parallel framework of regulation for quarry tips.<sup>301</sup> They were used as a model for the Mines Regulations and operate in a similar way. Under Part VI, an overarching duty is placed on a quarry operator to ensure that tips covered by the Regulations are designed, constructed, operated and maintained so that instability or movement likely to cause risk to health and safety of any person is avoided.<sup>302</sup> Tipping rules set out every aspect of how the tip will be constructed and maintained.<sup>303</sup> The tips covered by the Regulations are defined as those where persons work. They do not apply to quarries where there has been no extraction or preparation for sale of minerals within the previous 12 months or those in relation to which notice of abandonment or ceasing of operations has been given to the HSE.<sup>304</sup> In this way, a similar distinction is drawn between tips associated with operational quarries and those which are disused as that which distinguishes the regulation of mining tips.
- 4.74 Quarries are defined by the Regulations as excavations for the purpose of the extraction of minerals which are not mines, wells or boreholes.<sup>305</sup> This includes an open cast mine, which does not involve persons working below ground. The definition

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<sup>296</sup> Mines Regulations 2014, reg 66.

<sup>297</sup> Mines Regulations 2014, reg 4(5) and (6).

<sup>298</sup> Mines Regulations 2014, reg 67, with an exception in reg 4(8) that the Regs continue to apply where the tip is on premises occupied exclusively by the owner of an abandoned mine and used for depositing refuse from another mine.

<sup>299</sup> Mines Regulations 2014, reg 68.

<sup>300</sup> Mines Regulations 2014, reg 69.

<sup>301</sup> SI 1999 No 2024.

<sup>302</sup> Quarries Regulations 1999, reg 30.

<sup>303</sup> Quarries Regulations 1999, reg 31.

<sup>304</sup> Quarries Regulations 1999, reg 4.

<sup>305</sup> Quarries Regulations 1999, reg 3(1)(a).



also includes any disused tip “from which minerals are being extracted for sale or further use”.<sup>306</sup> This covers the re-working of a disused tip to extract minerals including coal; such tips in effect become quarries.

- 4.75 The Regulations provide for an initial appraisal of a quarry tip to determine whether it is a “significant hazard”. If it is not found to be such a hazard, the operator has a duty to ensure that a further appraisal is carried out at appropriate intervals and where there is any reason to suspect significant change. If it is found to be a significant hazard, a geotechnical assessment must be carried out.<sup>307</sup> The geotechnical assessment must be repeated at least every two years, or more frequently if there is cause for concern.<sup>308</sup> Duties are placed on the operator to give notice to the Health and Safety Executive of such a tip and to include specified information about the tip in this notice.<sup>309</sup> The initial appraisal must be carried out by a “competent person”. The geotechnical assessment is to be carried out by a “geotechnical specialist”.<sup>310</sup>

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<sup>306</sup> Quarries Regulations 1999, reg 3(1)(c).

<sup>307</sup> Quarries Regulations 1999, reg 32. Tips which are found to represent a significant hazard become known under the Regulations as “notifiable tips”.

<sup>308</sup> Quarries Regulations 1999, regs 33 and 34.

<sup>309</sup> Quarries Regulations 1999, reg 37.

<sup>310</sup> These terms are defined in reg 2. “Competent person” means “a person with sufficient training, experience, knowledge and other qualities to enable him properly to undertake the duties assigned to him”. A “geotechnical specialist” means a chartered engineer or chartered geologist who has (a) three or more years relevant experience in soil mechanics, rock mechanics or excavation engineering; and (b) is competent to perform a geotechnical analysis to determine the hazard and risk arising from the excavation or tip being assessed.

## Chapter 5: Other law relevant to coal tip safety

- 5.1 This chapter reviews other legislation of relevance to the project. Its purpose is to explain the wider statutory context within which the tip safety regime outlined in chapter 4 operates. This helps to explain some of the ways in which the 1969 Act does not work well. It also sets out the principles with which the new legislation will need to be aligned, and the accountability mechanisms to which it will be subject. It is not our intention to suggest reform of any of the areas discussed.
- 5.2 The chapter is divided into the following topics:
- (1) it is convenient to begin with three EU Directives that have contributed to shaping the domestic legislation, and the Regulations that have implemented them in England and Wales; discussion of these is followed by:
  - (2) relevant environmental and similar legislation enacted by the UK Parliament;
  - (3) relevant environmental and similar legislation enacted by the Senedd;
  - (4) environmental legislation that is under consideration in Westminster and Cardiff in consequence of EU exit; and
  - (5) devolved legislative competence.<sup>311</sup>

### EU DIRECTIVES

#### The Mining Waste Directive

- 5.3 Mining waste, from all types of extractive mining including of coal, makes up 30% of EU waste. The EU adopted the Mining Waste Directive (MWD)<sup>312</sup> in 2006 following a number of disasters caused by mining waste across the EU and the recognition that mining and quarrying activities were largely exempt from existing EU legislation.<sup>313</sup> It

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<sup>311</sup> We have been greatly assisted by Professor Robert Lee, member of the Welsh Government Expert Group on Coal Tip Safety, in the preparation of this chapter.

<sup>312</sup> Directive 2006/21/EC of the European Parliament and Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC. This is now retained EU law under s 2 of the European Union (Withdrawal) Act 2018, having been implemented in domestic legislation before EU exit, and thus continues to have effect in domestic law after exit day. It was mostly implemented by the Environmental Permitting (England and Wales) Regulations SI 2010 No 675, replaced by the Environmental Permitting (England and Wales) Regulations SI 2016 No 1154. Art 6 (accident prevention) was implemented by the Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations SI 2009 No 1927.

<sup>313</sup> See further <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52016DC0553> (last visited 26 March 2021) and <https://ec.europa.eu/environment/waste/mining/index.htm> (last visited 26 March 2021). Notable disasters, in addition to Aberfan in 1966, occurred at Stava, Italy in 1985, when a tailings dam collapsed and killed 268 people; Aznalcóllar, Spain in 1998, when a tailings dam at a gold, copper, lead and zinc mine failed and released almost 2 million tonnes of highly toxic tailings into ecologically significant waterways; and Baia Mare and Baia Borsa, Romania, in 2000, when tailings dams at a gold mine and a lead and zinc mine both failed, releasing in total 200,000 cubic metres of contaminated water and 40,000 tonnes of tailings, including 50 to 100 tonnes of cyanide, into a major tributary of the Danube. See

has been argued that, historically, “strategic industries such as the mineral extractive industry received specific treatment in the community legislation with a low control on its environmental impacts”.<sup>314</sup> The overall objective of the MWD is to provide for measures to prevent, or reduce as far as possible, any adverse effects on the environment as well as any resultant risk to human health from the management of waste from the extractive industries.<sup>315</sup>

- 5.4 The MWD defines extractive waste as waste resulting from the prospecting, extraction, treatment and storage of mineral resources and the working of quarries.<sup>316</sup> It introduced measures to reduce the environmental impact and risk to human health of all extractive waste within this definition, and a more stringent category of measures for “Category A” facilities such as those which could cause a major accident.<sup>317</sup>
- 5.5 Although extractive waste is defined broadly, there are significant restrictions on the Directive’s scope. Article 24 contains provisions whose broad effect is that the Directive applies partially to waste facilities that were in operation on or after 1 May 2006 and fully to waste facilities that were in operation on or after 1 May 2008.
- 5.6 In addition, certain types of extractive waste are excluded or partially excluded. Extractive waste categorised as non-hazardous “inert waste and unpolluted soil” is excluded from many of the measures, including in relation to permits, competent management and post-closure procedures, unless deposited in a Category A facility.<sup>318</sup> Inert waste is defined as waste that does not enter into chemical reactions or cannot dissolve in water, but the definition does not take into consideration that inert waste can have an impact by reason of its existence in large quantities.<sup>319</sup> This in practice constitutes the bulk of EU mining waste production. A further category of waste, “non-hazardous non-inert” waste, is also introduced. The member states may

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<https://www.tailings.info/casestudies/stava.htm> (last visited 11 May 2021),  
<https://www.grida.no/resources/11433> (last visited 26 March 2021), and  
<https://www.grida.no/resources/11432> (last visited 26 March 2021).

- <sup>314</sup> T Hamor, “Sustainable Mining in the European Union: The Legislative Aspect” (2004) 33(2) *Environmental Management* 252-261,  
[https://www.researchgate.net/publication/8425377\\_Sustainable\\_Mining\\_in\\_the\\_European\\_Union\\_The\\_Legislative\\_Aspect](https://www.researchgate.net/publication/8425377_Sustainable_Mining_in_the_European_Union_The_Legislative_Aspect) (last visited 9 March 2021).
- <sup>315</sup> Preamble to Directive 2006/21/EC of the European Parliament and Council of 15 March 2006 at (4).
- <sup>316</sup> Directive 2006/21/EC of the European Parliament and Council of 15 March 2006, art 2.
- <sup>317</sup> For a more detailed discussion of the Mining Waste Directive, see Department for the Environment, Food and Rural Affairs, *Environment Permitting Guidance - The Mining Waste Directive* (2010),  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69323/pb13636-ep2010miningwaste.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69323/pb13636-ep2010miningwaste.pdf) (last visited 9 March 2021), and R Burnett-Hall and B Jones (eds), *Burnett-Hall on Environmental Law* (3rd ed 2012) paras 14-145 to 14-149.
- <sup>318</sup> Art. 2(3): “Inert waste and unpolluted soil resulting from the prospecting, extraction, treatment and storage of mineral resources and the working of quarries and waste resulting from the extraction, treatment and storage of peat shall not be subject to arts 7, 8, 11(1) and (3), 12, 13(6), 14 and 16, unless deposited in a Category A waste facility”. Arts 4, 5, 10, 11(2) and 13(1) to (5) continue to apply.
- <sup>319</sup> Art 3(3) defines inert waste: “‘Inert waste’ means waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater”.

reduce or waive certain requirements for the deposit of this type of waste, again unless deposited in a Category A facility.<sup>320</sup>

5.7 A facility is in Category A if:

- (1) a “failure or incorrect operation” could cause a major accident (for example, the collapsing of a coal tip);
- (2) it contains hazardous waste; or
- (3) it contains dangerous substances.<sup>321</sup>

5.8 Accordingly, if the waste in a tip presents a clear physical hazard, it should be classed in Category A, and will be covered by all provisions of the MWD regardless of the type of waste stored.<sup>322</sup>

5.9 The MWD lays down basic provisions for the day-to-day storage and treatment of mining waste.<sup>323</sup> Other measures include requiring the operator of an extractive waste facility to draw up a waste management plan<sup>324</sup> and for Category A facilities to prepare a major accident prevention policy.<sup>325</sup> It also introduces a requirement for all waste facilities to possess a permit granted by a competent authority.<sup>326</sup> Public participation in the permitting process is required.<sup>327</sup>

5.10 Standards are set for the creation of a new waste facility, ensuring that the facility is constructed in a way that reduces the environmental impact and any risks to human health.<sup>328</sup> Suitable arrangements must also be made for the “after-closure phase” of the facility. The operator of the facility is made responsible for the monitoring and

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<sup>320</sup> S Moroz, “The Mining Waste Directive – will it address the toxic burden?” (2007) 19(5) *Environmental Law and Management* 232.

<sup>321</sup> Annex III.

<sup>322</sup> S Moroz, “The Mining Waste Directive – will it address the toxic burden?” (2007) 19(5) *Environmental Law and Management* 232 at 239.

<sup>323</sup> Art 4.

<sup>324</sup> Art 5. The objective of the plan is to prevent or reduce waste, to promote back-filling and the recovery of waste, and to ensure short and long-term safe disposal. Art 5 sets out specific minimum requirements for the plans.

<sup>325</sup> Art 6.

<sup>326</sup> Art 7, with the exception of those facilities that were closed by 1 May 2008, those that have stopped accepting wastes, and those that will be completed by December 2010.

<sup>327</sup> Art 8.

<sup>328</sup> Art 11. Under art 4(1) of the Environmental Impact Assessment Directive 2011/92/EU, an environmental impact assessment is mandatory for open cast mines in excess of a specific size (as listed in Annex 1). Under art 4(2), smaller area open cast and underground mines (as listed in Annex II) may need an assessment where Member States consider that they are likely to have significant effects on the environment.

maintenance of the site following closure unless taken over by the competent authority.<sup>329</sup> Environmental standards must also be met.<sup>330</sup>

- 5.11 In order to ensure that these standards are met, a financial guarantee must be provided prior to the commencement of works to ensure that funds are available for the rehabilitation of the land affected by the facility.<sup>331</sup> The competent authority must also inspect the facility at regular intervals, including during the “after-closure phase”.<sup>332</sup>
- 5.12 Although most of the MWD does not apply to older disused tips, it imposed a requirement that, by May 2012, member states produce an inventory of all closed waste facilities which cause serious environmental impacts or “have the potential of becoming in the medium or the short term a serious threat to human health”.<sup>333</sup> The Environment Agency was appointed to produce the closed mining waste inventory for England and Wales, which was published in 2014. The Agency identified 150 sites causing serious environmental impacts. Thirty-nine of these sites were in Wales. All of these were metal mines detected as causing water pollution. No coal tips were identified.<sup>334</sup>

### The Waste Framework Directive

- 5.13 Where waste is not covered by the MWD, it will fall under the Waste Framework Directive.<sup>335</sup> In addition, waste that was generated at a mining waste facility, but has been transported away from the facility, will also fall within the Waste Framework Directive.<sup>336</sup> Depending on how the particular waste is categorised, it may also fall under the Landfill Directive.<sup>337</sup> The Landfill Directive defines landfill as a waste disposal site for the deposit of waste onto or into land. Article 3(2) expressly excludes

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<sup>329</sup> Art 12.

<sup>330</sup> Art 13.

<sup>331</sup> Art 14.

<sup>332</sup> Art 17.

<sup>333</sup> Art 20.

<sup>334</sup> See Environment Agency, *Inventory of closed mineral waste facilities* (2014), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/288582/LIT\\_6797\\_7d390c.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/288582/LIT_6797_7d390c.pdf) (last visited 9 March 2021). In England, a number of coal tips were included as causing water pollution, and in two cases as being fire hazards (one of which was on fire at the time the report was published). Two sites were identified as instability hazards (one site was metalliferous, the other contained building minerals). In the equivalent report published by the Scottish Government in 2015, four coal tips were identified as unstable: see Scottish Government, *Inventory of Closed Mining Waste Facilities* (2015), <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2015/01/closed-mining-waste-facilities-list/documents/inventory-closed-mining-waste-facilities-january-2015-pdf/inventory-closed-mining-waste-facilities-january-2015-pdf/govscot%3Adocument/Inventory%2Bof%2BClosed%2BMining%2BWaste%2BFacilities%252C%2BJanuary%2B2015.pdf> (last visited 9 March 2021).

<sup>335</sup> 2008/98/EC.

<sup>336</sup> See Department for the Environment, Food and Rural Affairs, *Environmental Permitting Guidance: The Mining Waste Directive* (2010) para 2.18, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69323/pb13636-ep2010miningwaste.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69323/pb13636-ep2010miningwaste.pdf) (last visited 26 March 2021).

<sup>337</sup> Council Directive 1999/31/EC on the landfill of waste.

“the deposit of unpolluted soil or of non-hazardous inert waste resulting from prospecting and extraction, treatment, and storage of mineral resources”. Where waste is generated at a prospecting, extraction or treatment site and then is transported to a location that is not a mining waste facility, it falls outside the scope of the MWD and is subject to the Waste Framework Directive and, where relevant, the Landfill Directive.

- 5.14 The Waste Framework Directive defines waste as “any substance or object which the holder discards or intends or is required to discard”.<sup>338</sup> It requires member states to ensure that waste is recovered or disposed of without endangering human health and without using processes and methods which could harm the environment. To this end, it requires them to impose certain obligations on all those dealing with waste at various stages, including holders and professional collectors and transporters of waste. “Establishments and undertakings” which carry out waste disposal and recovery operations must obtain a permit or register a permit exemption.<sup>339</sup>

### The Water Framework Directive

- 5.15 The Water Framework Directive<sup>340</sup> applies where a coal tip is polluting a water course. The operator of a tip must satisfy the competent authority that necessary measures are in place to prevent the deterioration of current water status in line with the Directive. These measures may include evaluation and prevention of leachate generation; collection and treatment of contaminated water and leachate, with any disposal into water bodies made subject to compliance with the standards of EU water legislation; and prevention or reduction of dust and gas emissions.<sup>341</sup>

### Environmental Permitting Regulations

- 5.16 The requirements of the Waste Framework Directive and almost all of the MWD were transposed by the Environmental Permitting (England and Wales) Regulations 2010, replaced by the Environmental Permitting (England and Wales) Regulations 2016.<sup>342</sup> Article 6 of the MWD was instead implemented by the Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations 2009.<sup>343</sup> These regulations relate to requirements for the drawing up of emergency plans and the provision of information in the event of a major

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<sup>338</sup> Art 3(a).

<sup>339</sup> Department for the Environment, Food and Rural Affairs, *Environmental Permitting Guidance - The Waste Framework Directive* (2009), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69353/pb13569-wfd-guidance-091001.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69353/pb13569-wfd-guidance-091001.pdf) (last visited 9 March 2021).

<sup>340</sup> Directive 2000/60/EC, amended by Directives 2008/105/EC, 2013/39/EU and 2014/101/EU.

<sup>341</sup> Art 13.

<sup>342</sup> SI 2016 No 1154. The Department for the Environment, Food and Rural Affairs produced a guide to explain the Mining Waste Directive to accompany the Regulations: Department for the Environment, Food and Rural Affairs, *Environment Permitting Guidance - The Mining Waste Directive* (2010), <https://www.gov.uk/government/publications/environmental-permitting-guidance-the-mining-waste-directive> (last visited 9 March 2021).

<sup>343</sup> SI 2009 No 1927, sch 20. Art 6 contains the requirement to prepare a major accident prevention policy: see para 5.9 above.

accident. Local emergency planners are the competent authority for the purposes of the Regulations.<sup>344</sup>

- 5.17 Under the 2016 Regulations, the Environment Agency is the competent authority for the purposes of the Mining and Waste Framework Directives in England, and Natural Resources Wales (“NRW”) is the authority for Wales.<sup>345</sup>
- 5.18 The 2016 Regulations require operators of “regulated facilities” to obtain an environmental permit.<sup>346</sup> A “mining waste operation” is one of 12 categories of regulated facility. It is defined as the management of extractive waste that falls within the scope of the MWD, whether involving a mining waste facility or not.<sup>347</sup> Another category of regulated facility is a “waste operation”.<sup>348</sup> Where extractive waste does not fall within the scope of the MWD, it will fall within this definition. Any recovery or disposal of waste will be a waste operation.<sup>349</sup>
- 5.19 The Regulations place a duty on operators of regulated facilities to exercise their permit-related functions with the objective of fulfilling the obligations and achieving the outcomes required by the relevant EU Directive. In granting a permit, the regulator must ensure that all relevant statutory requirements will be met. It will be a condition of any permit that best available techniques (BAT) are employed to minimise any impact on the environment. Regulators are under a duty to monitor compliance with the terms and conditions of the permit, and to audit the operator’s systems for the management and supervision of the facility. The regulator is also under a duty to undertake appropriate periodic inspections. The regulator can take enforcement action including revocation of the permit if the operator does not comply with requirements. Schedule 20 sets out particular requirements for mining waste operations.<sup>350</sup>

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<sup>344</sup> One of the UK’s Category A facilities identified was also covered by the Seveso III Directive 96/82/EC, which creates obligations to avoid major accidents involving dangerous substances. This was implemented in Great Britain through the Control of Major Accident Hazards (COMAH) Regulations SI 2015 No 483, except for the land-use planning requirements, which were implemented by changes to planning legislation.

<sup>345</sup> Reg 2(1). The Regulations refer to the Natural Resources Body for Wales, usually known as Natural Resources Wales.

<sup>346</sup> Reg 12 (1).

<sup>347</sup> Reg 8(1)(d).

<sup>348</sup> Reg 8(1)(c).

<sup>349</sup> The Environmental Permitting regime came into force in 2008. It provided for pre-2008 waste management licences to become environmental permits. There may be some waste management licences which have not yet been surrendered. Natural Resources Wales has told us that the same conditions will be applied to older licences as would be applied in a permit granted today. In the event of any dispute, the licence can be revoked or updated. There is a right of appeal against both. The 2016 Regulations also include powers to demand the return of a regulated facility to a satisfactory state where a permit is surrendered: see sch 5 pt 1 para 14.

<sup>350</sup> Department for the Environment, Food and Rural Affairs and Welsh Government, *Environment Permitting: core guidance* (2020), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/935917/environmental-permitting-core-guidance.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/935917/environmental-permitting-core-guidance.pdf) (last visited 9 March 2021), and Department for the Environment, Food and Rural Affairs, *Environmental Permitting Guidance* (2010), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69323/pb13636-ep2010miningwaste.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69323/pb13636-ep2010miningwaste.pdf) (last visited 16 March 2021).

- 5.20 The Regulations create a number of criminal offences, including operation of a regulated facility without a permit and failure to comply with a permit condition. There is an emergency defence for an operator who can show that the acts in question were done in an emergency to avoid danger to human health, all reasonable steps were taken to minimise pollution and the regulator was informed promptly.<sup>351</sup>
- 5.21 Waste from disused coal tips may be classed as inert and non-hazardous waste, or it may fall into the category of hazardous waste. This will depend on its composition, and in particular its carbon content. It has been explained to us that older tips typically have a higher carbon content, because in the past more of the smaller pieces of coal extracted from mines were discarded as waste.<sup>352</sup> In later tips, most of the coal would have been washed out prior to tipping. An exception to this may be the liquid held in lagoons which contains fine coal particles in suspension which result from washing out the coal from the waste. This material settles out over time and will have a higher mineral content. Topsoil is treated differently because it is valuable and will be stored separately. This contrasts with the composition of a metal mine tip, which may include toxic elements such as copper and arsenic.<sup>353</sup> The categorisation of the waste will determine the specific requirements for its disposal. If the waste is defined as hazardous, for example, it will need to be disposed of in a specialist hazardous landfill site.<sup>354</sup>
- 5.22 The environmental permitting system works alongside the system of planning control which controls new development by requiring that prior planning permission should be obtained for any “material change of use” of land or any “operations” on or under land.<sup>355</sup> Where a waste operation requires planning permission, an environmental permit will be required in addition to that permission. In cases where both planning permission and an environmental permit or other pollution control consent are required, responsibility for securing the permitting objectives of the Directive will normally be shared between the planning authority (responsible for planning permission)<sup>356</sup> and the environmental permitting regulator.<sup>357</sup>

### **The Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009**

- 5.23 The Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009 provide preventive powers in relation to an imminent threat of environmental damage, which could include a coal tip failure.<sup>358</sup> The Regulations interact with the

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<sup>351</sup> Environmental Permitting (England and Wales) Regulations SI 2016 No 1154, reg 40(1).

<sup>352</sup> Meeting with Natural Resources Wales.

<sup>353</sup> Meetings with HM Inspector of Quarries and HM Inspector of Mines. See also paras 2.37 to 2.49 above for a discussion of pollutants.

<sup>354</sup> Hazardous waste is considered further below at paras 5.28 to 5.30.

<sup>355</sup> The primary statute for planning control is the Town and Country Planning Act 1990.

<sup>356</sup> See R Burnett-Hall and B Jones (eds), *Burnett-Hall on Environmental Law* (3rd ed 2012) para 7–008.

<sup>357</sup> Department for the Environment, Food and Rural Affairs, *Environmental Permitting Guidance - The Waste Framework Directive* (2009), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69353/pb13569-wfd-guidance-091001.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69353/pb13569-wfd-guidance-091001.pdf) (last visited 9 March 2021).

<sup>358</sup> SI 2009 No 995 (W 81). The Regulations transpose the Environmental Liability Directive 2004/35/EC, as amended by Directive 2006/21/EC.



Environmental Permitting Regulations as they authorise action against the holder of a permit. Regulation 13 requires the operator of an activity that causes or may cause an imminent threat of environmental damage to take immediate steps to prevent the damage, and allows NRW to serve a notice to require further measures to be taken to prevent the damage.<sup>359</sup>

## River Basin Management Plans

- 5.24 The Water Framework Directive is implemented in the UK through a river basin management planning process based on river basin districts. River Basin Management Plans evaluate the quality of bodies of water.<sup>360</sup> Pollution from abandoned coal mines and non-coal mines makes a significant contribution to the number of failures to be awarded good status.<sup>361</sup> NRW is the competent authority in Wales. The plans must set out environmental objectives and programmes of measures to fulfil the plans. NRW must exercise its functions, including permitting powers under the Environmental Permitting Regulations considered below, so as to secure compliance with the requirements of the Directive.<sup>362</sup>

## UK LEGISLATION OF RELEVANCE TO COAL TIP SAFETY

### The Environmental Protection Act 1990

#### Statutory nuisance

- 5.25 Section 79 of the Environmental Protection Act 1990 lists matters which will constitute a statutory nuisance. These include (as originally provided by the Public Safety (Coal Mine Refuse) Act 1939 in an attempt to control coal tip fires) “any accumulation or deposit which is prejudicial to health or a nuisance”.<sup>363</sup> Statutory nuisances are defined to include the emission of smoke, fumes or gases on premises (which include land). A duty is placed on the local authority to inspect its area in order to detect any statutory nuisances. These are to be dealt with in accordance with section 80, which provides for the service of an abatement notice, or for the taking of any other steps which the authority considers appropriate. Section 80 offers a remedy by way of summary proceedings before the Magistrates’ Court for persons aggrieved.
- 5.26 The local authority has the same duties where a nuisance is caused by a regulated facility subject to the Environment Permitting Regulations 2016, but where action may

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<sup>359</sup> An “operator” is defined in reg 2 as a person who operates or controls an activity, the holder of a permit or authorisation relating to that activity or the person registering or notifying such an activity. “Activity” means any economic activity, whether public or private and whether or not carried out for profit.

<sup>360</sup> The Water Environment (Water Framework Directive) (England and Wales) Regulations SI 2003 No 3242.

<sup>361</sup> See para 2.46 above.

<sup>362</sup> Department for the Environment, Food and Rural Affairs and Welsh Government, *Environment Permitting: core guidance* (2020), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/935917/environmental-permitting-core-guidance.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/935917/environmental-permitting-core-guidance.pdf) (last visited 9 March 2021).

<sup>363</sup> See paras 2.58 and 2.63 above.

be taken by the regulator of the facility (NRW), a local authority cannot prosecute without the consent of the Welsh Ministers.<sup>364</sup>

- 5.27 The section does not cover land which is categorised as being in a contaminated state. Contaminated land causing or creating a risk of causing significant harm is dealt with by the regime under Part 2A of the Act, discussed below.

### Hazardous waste

- 5.28 The 1990 Act defines “waste” as any waste within the meaning of article 3(1) of the Waste Framework Directive, and excludes waste which is excluded from the scope of the Directive by article 2.<sup>365</sup> As explained above, some categories of mining waste are excluded by article 2.<sup>366</sup>
- 5.29 Section 75 of the Act defines hazardous waste in Wales as meaning the list referred to in the Hazardous Waste (Wales) Regulations 2005. This in turn refers to those wastes classified as hazardous in the List of Wastes.<sup>367</sup>
- 5.30 The current Environment Bill 2019-21<sup>368</sup> will, if enacted, insert a new definition of hazardous waste into section 75 of the 1990 Act by a new subsection (8A), together with a new section 62ZA to make special provision in England and Wales for hazardous waste. This will include provision: for powers to prohibit or restrict any activity in relation to hazardous waste; for the giving of directions by waste regulation authorities; for imposing requirements about how hazardous waste may be kept (including requirements about the quantities of hazardous waste which may be kept at any place); for the registration of hazardous waste controllers or places where activities in relation to hazardous waste are carried out; for the keeping of records by hazardous waste controllers; for the inspection of those records by waste regulation authorities or specified persons. Provision is also made for the creation of criminal offences and civil sanctions and for the recovery of charges for the treatment, keeping, disposal or re-delivery of hazardous waste.<sup>369</sup>

### Contaminated land

- 5.31 Contaminated Land Regulations, made under Part 2A of the Environmental Protection Act 1990, place a duty on local authorities to inspect sites where land is suspected to

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<sup>364</sup> Department for the Environment, Food and Rural Affairs and Welsh Government, *Environment Permitting: core guidance* (2020), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/935917/environmental-permitting-core-guidance.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/935917/environmental-permitting-core-guidance.pdf) (last visited 9 March 2021).

<sup>365</sup> Environmental Protection Act 1990, s 75(2).

<sup>366</sup> See para 5.6 above.

<sup>367</sup> The List of Wastes is defined in the Regulations (as amended) as the list of wastes established by Commission Decision 2000/532/EC. This provides an EU-wide common terminology for waste classification to ease waste management, including for hazardous waste.

<sup>368</sup> The Bill is discussed further at para 5.68 below.

<sup>369</sup> Environment Bill 2019-2021, s 62ZA(6)(b) and (6)(c).

be contaminated land as defined below. Part 2A came into force in Wales on 1 July 2001.<sup>370</sup>

5.32 Part 2A defines contaminated land as any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that:

- (1) significant harm is being caused or there is a significant possibility of such harm being caused; or
- (2) significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused.

5.33 Where land is determined to be contaminated land, local authorities are required to ensure that it is remediated to an acceptable standard by one of the following mechanisms:

- (1) agreeing remediation with the appropriate person(s) who will in turn issue a remediation statement;
- (2) serving a remediation notice on the appropriate person(s) outlining what is required of them; or
- (3) undertaking the work itself after issuing a remediation statement and subsequently recovering the cost from appropriate person(s) where possible.<sup>371</sup>

5.34 The appropriate person is either the person who caused or knowingly permitted the substances that render the land “contaminated” to be in, on or under the land or, if that person cannot be found, the site owner or occupier.<sup>372</sup>

5.35 In situations where to remediate contaminated land would be contrary to statutory guidance or is unreasonably costly in proportion to the harm involved, a remediation declaration may be issued by the local authority. Such a declaration records the remediation actions that would have been specified in a remediation notice should one have been served. Details of the determination of contaminated land and subsequent remediation are recorded on a public register.

5.36 In certain circumstances contaminated land may be designated as a special site. In this situation the role and responsibility of the local authority under Part 2A are transferred to NRW.

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<sup>370</sup> Part 2A was inserted into the Environmental Protection Act 1990 by s 57 of the Environment Act 1995. Contaminated land is defined by s 78A of the 1990 Act. For information on the statutory duties carried out under Part 2A in Wales from 2001 to 2013, see Natural Resources Wales, *The State of Contaminated Land in Wales* (2016), [https://naturalresources.wales/media/677708/nrw26759-contaminated-land-in-wales-pdf\\_english-1.pdf](https://naturalresources.wales/media/677708/nrw26759-contaminated-land-in-wales-pdf_english-1.pdf) (last visited 9 March 2021). Mine waters from mines abandoned before 1999 are excluded.

<sup>371</sup> A remediation statement details the remediation actions which have been or are expected to be done to secure the remediation of the contaminated land.

<sup>372</sup> Environmental Protection Act 1990, s 78F.

- 5.37 An NRW study of the state of contaminated land in Wales between 2001 and 2013 found that the vast majority of land affected by contamination identified by local authorities (5,506 sites or 93% of the total) was dealt with through the planning system rather than through the Part 2A mechanism.<sup>373</sup> Part 2A remediation accounted for only 203 cases, or 3%. Planning conditions were the preferred option as they placed the cost of dealing with contamination upon those likely to benefit from the redevelopment.
- 5.38 The study found that the local authorities had used the Part 2A regime to identify 10,130 potentially contaminated sites in Wales. Eight hundred of the highest priority sites had been subjected to a detailed inspection, with 175 (including two special sites) being formally determined as contaminated land; 64 determinations were later revoked, leaving a total of 111 determined sites. As the study observes, this suggested that there are still 9,330 potentially contaminated sites yet to undergo detailed inspection by local authorities in Wales, with at least 414 of these sites considered to be a priority.<sup>374</sup>
- 5.39 While coal tips contain contaminants such as pyrites, which can cause sulphuric acid run-off into rivers, NRW told us that the Part 2A regime was unlikely to be used to deal with coal tip issues. The Part 2A approach has been used to deal with contamination from metal mine tips, which contain heavy metals. It is, however, possible that sediment ponds associated with coal mines could fall within the Part 2A definition of contaminated land.<sup>375</sup>
- 5.40 The environmental permitting system provides a mechanism to alert local authorities to possible contamination from a tip. Where an application is made for a permit for a regulated facility under the Environmental Permitting Regulations 2016, the local authority will normally receive a copy of the application. The information in the application may suggest to the local authority that the site might meet the statutory definition of contaminated land and that further investigation may be necessary. If the site of the regulated facility is contaminated as a result of the regulated activities, the authority cannot seek remedial action under Part 2A if action under the 2016 Regulations is possible. If the permit has already been surrendered, the local authority may consider remediation under Part 2A. The requirements for site restoration under the Regulations are usually of a more exacting standard than that required under Part 2A.<sup>376</sup>

## The Civil Contingencies Act 2004

- 5.41 The Civil Contingencies Act 2004 enables public authorities to prepare for and respond to emergencies. Part 1 is designed to deal with preparations by local

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<sup>373</sup> Natural Resources Wales, *The State of Contaminated Land in Wales* (2016), [https://cdn.cyfoethnaturiol.cymru/media/677708/nrw26759-contaminated-land-in-wales-pdf\\_english-1.pdf?mode=pad&rnd=131467549760000000](https://cdn.cyfoethnaturiol.cymru/media/677708/nrw26759-contaminated-land-in-wales-pdf_english-1.pdf?mode=pad&rnd=131467549760000000) (last visited 16 March 2021).

<sup>374</sup> Above, pp 17 and 30.

<sup>375</sup> Meeting with Natural Resources Wales.

<sup>376</sup> Department for the Environment, Food and Rural Affairs and Welsh Government, *Environment Permitting: core guidance* (2020), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/935917/environmental-permitting-core-guidance.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/935917/environmental-permitting-core-guidance.pdf) (last visited 9 March 2021) at A1.7 and A1.8.

responders for localised emergencies. An emergency is defined to include events or situations which threaten serious damage to human welfare or to the environment at a location within the UK.<sup>377</sup>

- 5.42 Responders are divided into two categories. Category 1 responders are those at the core of the emergency response. In Wales this includes local authorities, the emergency services and NRW. Duties include the assessment of the risk of an emergency occurring and the use of this assessment to inform and put in place contingency planning. The responders must also warn, inform and advise the public in the event of an emergency. Category 2 bodies are organisations such as the Health and Safety Executive which are required to cooperate and share information with the Category 1 responders in order to deal with incidents affecting their particular sector.<sup>378</sup> The Coal Authority is not a Category 1 or 2 responder.
- 5.43 Category 1 responders form multi-agency partnerships known as Local Resilience Forums (LRFs) to carry out their planning and preparation duties. The LRFs are supported by Category 2 responders, and also work with other partners such as the military and voluntary sectors.<sup>379</sup> The multi-agency response is coordinated in accordance with the JESIP framework (Joint Emergency Services Interoperability Principles). This sets out a standard response model. Save in the case of an emergency order, the order must provide sufficient time within which to make an appeal.<sup>380</sup>
- 5.44 A Minister of the Crown or, in Wales, a Welsh Minister has power to make an order to require a Category 1 responder to perform a function for the purpose of preventing, controlling, mitigating or responding to an emergency.<sup>381</sup> The Minister also has power to make regulations for the disclosure of information between responders for this purpose.<sup>382</sup> Where the situation is urgent and there is insufficient time to make an order or regulation, the Minister may act by direction.<sup>383</sup>
- 5.45 The threat to human welfare and to the environment of an unstable coal tip may fall within the definition of a Part 1 emergency. But, as noted in the preliminary work

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<sup>377</sup> Civil Contingencies Act 2004, s 1. Threats to human welfare are further defined by s 1(2) as involving, causing or potentially causing loss of life, illness, injury, homelessness, damage to property, damage to disruption of a supply of money, food, water, energy or fuel, disruption of a system of communication, disruption of facilities for transport, or disruption of services relating to health. Threats of damage to the environment are defined by s 1(3) as involving, causing or potentially causing contamination of land, water or air with biological, chemical or radioactive matter, or disruption or destruction of plant or animal life.

<sup>378</sup> Civil Contingencies Act 2004, s 2. Category 1 and 2 responders are listed in sch 1. Pt 2A, added by the Welsh Ministers (Transfer of Functions) Order SI 2018 No 644, art 41, lists Category 1 responders in Wales. Pt 5 lists Category 2 responders in Wales.

<sup>379</sup> See <https://www.gov.uk/guidance/local-resilience-forums-contact-details#overview> (last visited 26 March 2021).

<sup>380</sup> See <https://www.jesip.org.uk/home> (last visited 26 March 2021).

<sup>381</sup> Civil Contingencies Act 2004, ss 5(1) and 5(2A) (added by Welsh Ministers (Transfer of Functions) Order SI 2018 No 644, art 41(5)(a)).

<sup>382</sup> Civil Contingencies Act 2004, s 6 and 6(2A) (added by Welsh Ministers (Transfer of Functions) Order SI 2018 No 644, art 41(6)(a)).

<sup>383</sup> Civil Contingencies Act 2004, s 7 and s 8A (added by Welsh Ministers (Transfer of Functions) Order SI 2018 No 644, art 41(7)).

carried out by the Coal Tip Safety Task Force, there has been no guarantee in the past that the Community Risk Registers kept by local authorities in accordance with the requirements of the 2004 Act accurately reflected coal tip risks. This will be addressed by the integration of more detailed tip information compiled by the Coal Tip Safety Task Force into data held by local authorities and emergency services. The data will be accessible to all LRFs. The objective is for it to be held on the DataMapWales platform, a secure hosted platform within Welsh Government.<sup>384</sup>

## WELSH LEGISLATION OF RELEVANCE TO COAL TIP SAFETY

- 5.46 Welsh primary legislation contains certain overarching principles which apply across the development of all policy. An overarching sustainable development context is established by the Well-being of Future Generations (Wales) Act 2015. The Environment (Wales) Act 2016 introduced a further set of principles to guide and support the development and implementation of policies on managing natural resources and to integrate these into the framework for sustainable development. A new regulatory framework for coal tips would need to align with both sets of principles.<sup>385</sup>

### The Well-being of Future Generations (Wales) Act 2015

- 5.47 The Well-being of Future Generations (Wales) Act 2015 places Welsh public bodies (including the Welsh Ministers, NRW and local authorities) under a duty to act “in accordance with the sustainable development principle”. This means that these bodies must act in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs. The objective is to assist better decision-making by ensuring that public bodies take account of the long term, help to prevent problems occurring or getting worse, take an integrated and collaborative approach, and consider and involve people of all ages.
- 5.48 In order to do so, public bodies need to apply five principles, known as the “five ways of working”. These are set out below.
- (1) Long-term: the importance of balancing short-term needs with the need to safeguard the ability to also meet long-term needs.
  - (2) Prevention: how acting to prevent problems occurring or getting worse may help public bodies meet their objectives.
  - (3) Integration: considering how the public body’s well-being objectives may impact upon each of the well-being goals, on their other objectives, or on the objectives of other public bodies.

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<sup>384</sup> See <https://datamap.gov.wales>. Its use of coal tip data will extend beyond emergency use. See ch 8 for the interim work commissioned by the Welsh Government.

<sup>385</sup> For a recent discussion of the application of these principles in the development of environmental policy, see Welsh Government, *Consultation Document, Environmental Principles and Governance in Wales Post European Union Exit*, WG 35189 (2019), [https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document\\_0.pdf](https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document_0.pdf) (last visited 9 March 2021).

- (4) Collaboration: acting in collaboration with any other person (or different parts of the body itself) that could help the body to meet its well-being objectives.
- (5) Involvement: the importance of involving people with an interest in achieving the well-being goals, and ensuring integration, long-term, prevention, involvement and collaboration.

5.49 Public bodies are also required to take action aimed at achieving the seven well-being goals set out in the Act. The most important of these, from the perspective of coal tip safety, are those which seek a healthier, resilient and prosperous Wales.

### **The Environment (Wales) Act 2016**

5.50 The Environment (Wales) Act 2016 introduced a further set of principles designed to guide and support the development and implementation of policies on managing natural resources in Wales. These principles, drawn from international best practice, complement those in the Well-being of Future Generations (Wales) Act 2015, with four directly corresponding to the five ways of working and a further five designed specifically to implement the approach adopted by the Convention on Biological Diversity.

5.51 Natural resources are defined by section 2 of the Act as including, but not limited to:

- (a) animals, plants and other organisms;
- (b) air, water and soil;
- (c) minerals;
- (d) geological features and processes;
- (e) physiographical features; and
- (f) climatic features and processes.

5.52 The nine principles within the 2016 Act (often referred to as the SMNR or Sustainable Management of Natural Resources principles) are:

- adaptive management;
- scale;
- collaboration;
- public participation;
- evidence;
- short, medium and long-term consequences;
- value of ecosystems;
- prevention; and

- resilience.

### Using the principles in system design

- 5.53 An example of system design in this context is the recent consultation by the Welsh Government on environmental principles and governance gaps following EU exit.<sup>386</sup> The consultation is discussed further below.<sup>387</sup> The consultation does not propose a specific model, and in particular does not take a position on whether it is better to improve existing governance structures or create a new and specific oversight body. It seeks views on what would constitute an effective governance framework which is in line with existing arrangements and the Welsh legislative framework. This includes alignment with the overarching principles identified in the 2015 and 2016 Acts. This might mean, for example, that the remit of a body would be guided by the integrated approach set out by the 2016 Act and by the definition of “natural resources” provided by section 2.<sup>388</sup>
- 5.54 The framework would also guide the design of the functions of a governance body. An advisory role, including the provision of expert advice on how public bodies can contribute to sustainable management of resources and enhance ecosystem resilience, would help to ensure the prevention of harm.<sup>389</sup> Similarly, a role in the scrutiny of the implementation of existing legislation should complement rather than conflict with existing structures. In undertaking a scrutiny function, the body should be able to use the reports published by other bodies rather than duplicating work.<sup>390</sup>
- 5.55 Another important example of the impact of these overarching principles on policy-making is in relation to development planning. The Planning (Wales) Act 2015 sets out a statutory purpose for planning in Wales which requires local planning authorities, the Welsh Ministers and other public bodies, when undertaking any development plan or development management functions, to contribute towards sustainable development. The Act provides a direct link to the requirements of carrying out sustainable development in accordance with the Well-being of Future Generations (Wales) Act 2015 and complements the aims and objectives of that Act.<sup>391</sup>

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<sup>386</sup> Welsh Government, *Consultation Paper, Environmental Principles and Governance in Wales Post European Union Exit*, WG 35189 (2019), [https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document\\_0.pdf](https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document_0.pdf) (last visited 9 March 2021).

<sup>387</sup> See paras 5.61 to 5.67 below.

<sup>388</sup> Welsh Government, *Consultation Paper, Environmental Principles and Governance in Wales Post European Union Exit*, WG 35189 (2019), [https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document\\_0.pdf](https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document_0.pdf) (last visited 9 March 2021), para 3.30.

<sup>389</sup> Above, para 3.40.

<sup>390</sup> Above, paras 3.43 and 3.44. For another application of the integrated approach to well-being established by the Well-being of Future Generations (Wales) Act 2015, see Natural Resources Wales, *The State of Natural Resources* (2016), <https://naturalresources.wales/evidence-and-data/research-and-reports/the-state-of-natural-resources-report-assessment-of-the-sustainable-management-of-natural-resources/?lang=en> (last visited 9 March 2021).

<sup>391</sup> Planning (Wales) Act 2015, s 2, and see the Explanatory Memorandum to the Act, <https://gov.wales/sites/default/files/publications/2019-06/planning-wales-act-2015-explanatory-memorandum.pdf> (last visited 30 March 2021).



## ENVIRONMENTAL PRINCIPLES AND RESPONSIBILITIES FOLLOWING EU EXIT

- 5.56 The UK's exit from the European Union has left a gap in environmental governance as a result of the loss of the role of the EU Commission and European Court of Justice in ensuring implementation of and compliance with EU environmental legislation. EU law, as well as providing specific frameworks (such as the Mining Waste Directive), also includes four overarching environmental principles. These are the precautionary principle, the preventive principle, the rectification at source principle and the polluter pays principle.<sup>392</sup>
- 5.57 The precautionary principle allows regulatory action to be taken even if there is a lack of full scientific certainty as to the threat of damage.<sup>393</sup> The preventive principle aims to prevent environmental damage. The rectification at source principle intends to prevent pollution at its source. The polluter pays principle aims to ensure that polluters pay for the costs of managing the impact of their pollution on the environment and on human health.<sup>394</sup>
- 5.58 Although these principles inform EU policy, they do not apply directly to member states. This is exemplified by the Celtic Energy case,<sup>395</sup> where the sale of disused open cast mines to shell companies had the result that the cost of remediating the sites could not be recovered. This contravened the polluter pays principle but, as the principle only informs policy and is not enforceable against private undertakings, it could not be enforced against the company. These principles do, however, assist in judicial interpretation. Client Earth explains, with regard to the polluter pays principle, that:

The policy importance of the polluter pays principle has received judicial recognition in the UK. In *Re Mineral Resources* Neuberger J observed that “there is considerable public interest in the maintenance of a healthy environment, and in the principle pithily expressed as ‘the polluter must pay’”. Subsequently the Court of Appeal of England and Wales limited the application of the principle by holding that it cannot be applied so as to require unsecured creditors of the polluter to pay when the polluter itself cannot. In Scotland, however, a recent decision by the Inner House of the Court of Session followed the approach in *Mineral Resources*, holding that the polluter pays principle was an additional persuasive factor in giving pre-eminence to the policy of maximising environmental protection.<sup>396</sup>

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<sup>392</sup> Included in art 191 of the Treaty on the Functioning of the European Union.

<sup>393</sup> The Treaty on the Functioning of the European Union does not define this principle, but it is drawn from principle 15 of the Rio Declaration: “Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation”.

<sup>394</sup> For a fuller discussion of the meaning of these principles, see R Burnett-Hall and B Jones (eds), *Burnett-Hall on Environmental Law* (3rd ed 2012) paras 2-095 to 2-124.

<sup>395</sup> Discussed at para 3.66 above.

<sup>396</sup> Client Earth, *Environmental principles in UK law after Brexit* (2018), <https://www.documents.clientearth.org/wp-content/uploads/library/2018-06-26-environmental-principles-in-uk-law-after-brex-it-ce-en.pdf> (last visited 9 March 2021).

- 5.59 These principles do not remain part of UK law following EU exit unless the UK Government or devolved governments decide to adopt them.<sup>397</sup> The Senedd has already made provision for the prevention principle and the precautionary principle in Welsh law.<sup>398</sup>
- 5.60 The EU Commission also has a significant role in ensuring that member states abide by environment laws. People can complain about an infringement of law to the EU Commission, which will then investigate their complaints. Examples in Wales include complaints about the handling of agricultural pollution in rivers and the level of emissions from a coal-fired power station.<sup>399</sup> The Commission may then refer the member state to the European Court of Justice. One example of this was the referral of the UK in 2015 over urban waste water discharges. This case included excessive spills from storm water overflows in Llanelli and Gowerton in Wales.<sup>400</sup>

### Welsh Government Consultation

- 5.61 As noted above at paragraph 5.53, the Welsh Government consulted in 2019 on the gaps in environmental principles and governance that might open up in Wales as a result of the UK's exit from the EU, and about the best way to provide an effective governance framework in the future.<sup>401</sup>
- 5.62 Unlike the rest of the UK, Wales has already made provision for the preventive principle and the precautionary principle, as part of the sustainable management of natural resources (SMNR) principles enshrined in the Environment (Wales) Act 2016. The preventive principle is also reflected in one of the five ways of working in the Well-being of Future Generations Act 2015.<sup>402</sup> However, there is no equivalent of the polluter pays or the rectification at source principles.<sup>403</sup> The analysis of consultation responses described respondents as “overwhelmingly in favour of having a set of environmental principles to guide the development of Welsh environmental law, and most agreed rectification at source and polluter pays should be included”.<sup>404</sup>

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<sup>397</sup> The Trade and Cooperation Agreement reached between the EU and the UK, implemented in domestic law by the European Union (Future Relationship) Act 2020, includes a commitment to respect internationally recognised environmental principles, including the four EU environmental principles.

<sup>398</sup> These form part of the sustainable management of natural resources principles in the Environment (Wales) Act 2016.

<sup>399</sup> BBC News, *Brexit: Environmental watchdog to be introduced in Wales* (2020), <https://www.bbc.co.uk/news/uk-wales-55036371> (last visited 9 March 2021).

<sup>400</sup> European Commission, *Commission refers the UK to Court over poor waste water collection and treatment* (2015), [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_15\\_4672](https://ec.europa.eu/commission/presscorner/detail/en/IP_15_4672) (last visited 9 March 2021).

<sup>401</sup> Welsh Government, *Consultation Paper, Environmental Principles and Governance in Wales Post European Union Exit*, WG 35189 (2019), [https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document\\_0.pdf](https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document_0.pdf) (last visited 9 March 2021).

<sup>402</sup> Above.

<sup>403</sup> Above.

<sup>404</sup> Welsh Government, *Consultation – Summary of Responses, Environmental Principles and Governance in Wales Post European Union Exit* (2019), <https://gov.wales/sites/default/files/consultations/2019-09/environmental-principles-governance-post-european-union-exit-summary-of-responses.pdf> (last visited 9 March 2021).

- 5.63 The SMNR principles already apply to NRW, and to the Welsh Ministers in their creation and implementation of natural resources policy. The consultation asked whether these principles should be extended to additional public bodies within devolved competence.<sup>405</sup> The majority of respondents thought that the duty should be extended, with some suggesting that the duty should be extended to bodies that do not fall under devolved competence, with the consent of the UK Government.<sup>406</sup>
- 5.64 The consultation also asked about the gaps left by the loss of the EU Commission and the European Court of Justice.<sup>407</sup> The majority of respondents agreed that there were the following gaps: independent accountability (an independent oversight body); a simple and inexpensive mechanism to raise complaints; and enforcement mechanisms. Some respondents identified further gaps, such as a loss of monitoring and data collection functions, loss of access to advice and guidance, the setting of standards and scrutiny of performance against these standards and powers to seek rectification of damage.<sup>408</sup> Most consultation responses indicated that a new oversight body should be independent from government, able to scrutinise the implementation of environmental legislation, provide a complaints process and use both informal and formal enforcement processes.
- 5.65 An Environmental Governance Stakeholder Task Group established by the Welsh Government formulated recommendations following an analysis of consultation responses. The recommendations included the incorporation of all the core EU environmental principles in legislation, and the establishment of a Commission for the Environment.<sup>409</sup>
- 5.66 The Minister for Environment and Rural Affairs responded in late 2020. She accepted the recommendation that all four EU principles should be introduced through primary legislation, and that there should be a duty on Welsh Ministers to apply the principles

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<sup>405</sup> Welsh Government, *Consultation Paper, Environmental Principles and Governance in Wales Post European Union Exit*, WG 35189 (2019), [https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document\\_0.pdf](https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document_0.pdf) (last visited 9 March 2021).

<sup>406</sup> Welsh Government, *Consultation – Summary of Responses, Environmental Principles and Governance in Wales Post European Union Exit* (2019), <https://gov.wales/sites/default/files/consultations/2019-09/environmental-principles-governance-post-european-union-exit-summary-of-responses.pdf> (last visited 9 March 2021).

<sup>407</sup> Welsh Government, *Consultation Paper, Environmental Principles and Governance in Wales Post European Union Exit*, WG 35189 (2019), [https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document\\_0.pdf](https://gov.wales/sites/default/files/consultations/2019-03/eu-exit-consultation-document_0.pdf) (last visited 9 March 2021).

<sup>408</sup> Welsh Government, *Consultation – Summary of Responses, Environmental Principles and Governance in Wales Post European Union Exit* (2019), <https://gov.wales/sites/default/files/consultations/2019-09/environmental-principles-governance-post-european-union-exit-summary-of-responses.pdf> (last visited 9 March 2021).

<sup>409</sup> Minister for Environment, Energy and Rural Affairs, *Response to the report from the Environmental Governance Stakeholder Task Group* (2020), <https://gov.wales/response-report-environmental-governance-stakeholder-task-group> (last visited 9 March 2021). See also L Petetin, “Envisaging the Future of Environmental Governance in Wales: the role of the Environmental Governance Stakeholder Task Group” (2021), <https://www.brexitenvironment.co.uk/2021/01/11/envisaging-the-future-of-environmental-governance-in-wales-the-role-of-the-environmental-governance-stakeholder-task-group/> (last visited 9 March 2021).

in the development of policy.<sup>410</sup> She also accepted in principle, subject to further exploratory work, that the SMNR principles should be extended to other public bodies.<sup>411</sup> She indicated her support for a new environmental governance body for Wales, considering the “commission or commissioner model to be the most appropriate approach as it could undertake the required range of functions with the necessary degree of independence”.<sup>412</sup>

- 5.67 An interim environmental protection assessor has been appointed pending the introduction of legislation to implement the recommendations. The interim assessor will review issues raised on the functioning of environmental law in Wales and prepare reports for the Welsh Ministers. Once the Welsh Ministers have considered the report they will lay the report and their response in the Senedd.<sup>413</sup>

### **The Environment Bill 2019-2021**

- 5.68 The UK Government has introduced an Environment Bill 2019-2021 to address the gaps left in UK environmental law by EU exit, and to establish a body to replace the oversight function of the EU Commission. The Bill contains a “non-regression” clause requiring the Secretary of State to make a statement as to whether proposed environmental legislation introduced into the UK Parliament would reduce the level of environmental protection and creates an Office for Environmental Protection (OEP) to replace the oversight function of the Commission. The OEP will not have functions in Wales, except in reserved areas.

### **Implications of EU exit for the reform of coal tip safety law**

- 5.69 All four of the EU environment principles are likely to be enshrined in Welsh primary legislation, as described above. The polluter pays principle will be of relevance to tips associated with operational mines. The rectification at source principle might be relied on to support more extensive reclamation options for coal tips. The prevention and precautionary principles already form part of the sustainable management of natural resources principles enshrined in the Environment (Wales) Act 2016. Any oversight body created as a result of this project would be subject to these principles, as well as the five ways of working in the Well-being of Future Generations Act 2015.
- 5.70 A reformed regulatory structure would be subject to oversight by the new independent environmental governance body to be established in Wales. This would provide scrutiny of any new regulatory framework and a complaints process.

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<sup>410</sup> Minister for Environment, Energy and Rural Affairs, *Response to the report from the Environmental Governance Stakeholder Task Group* (2020), <https://gov.wales/response-report-environmental-governance-stakeholder-task-group> (last visited 9 March 2021).

<sup>411</sup> Above.

<sup>412</sup> Above.

<sup>413</sup> Welsh Government, “Welsh Government appoints new Environmental Protection Assessor” (2021), <https://gov.wales/welsh-government-appoints-new-environmental-protection-assessor> (last visited 9 March 2021).

## DEVOLUTION

- 5.71 Section 108A of the Government of Wales Act 2006, as amended by the Wales Act 2017, sets out the legislative competence of the Senedd and prescribes the categories of provisions which will be outside competence. These include where a provision relates to one of the reserved matters listed in schedule 7A, and where it applies otherwise than in relation to Wales, or confers, imposes, modifies or removes (or gives power to confer, impose, modify or remove) functions exercisable otherwise than in relation to Wales.<sup>414</sup>
- 5.72 The Senedd may nevertheless modify the law on reserved matters in provisions which are ancillary to provisions otherwise within its subject-matter competence and have no greater effect on reserved matters than is necessary to give effect to the purpose of the provision within competence.<sup>415</sup>
- 5.73 In our provisional view coal tip safety falls within devolved competence. Coal itself, including the ownership and exploitation of coal, deep and open cast coal mining, coal mining related subsidence, and water discharge from coal mines, is a reserved matter, otherwise than for the purpose of land restoration.<sup>416</sup> Under section 26A of the Coal Industry Act 1994, Welsh Ministers must approve licences for coal mining operations in Wales. Notification of approval is to be given to the Coal Authority. Matters relating to the environment, flood risk management and land drainage are not reserved.

### Implications of devolution for reform of the law relating to coal tip safety

- 5.74 The Senedd may not confer or impose functions on reserved authorities without the consent of the appropriate Minister.<sup>417</sup> The Senedd is also restricted from removing or modifying functions of public authorities, except devolved Welsh authorities, unless the appropriate Minister consents. These provisions would restrict the Senedd's power to alter the functions of a body such as the Coal Authority, which was established by UK statute and operates as an arm's length body of a UK Government department.

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<sup>414</sup> Government of Wales Act 2006, s 108A.

<sup>415</sup> Government of Wales Act 2006, sch 7B para 2.

<sup>416</sup> Government of Wales Act 2006, sch 7A. Section D3 specifically reserves coal, including: (1) the ownership and exploitation of coal; (2) deep and open cast coal mining; (3) subsidence relating to coal mining; and (4) water discharge from coal mines. Land restoration is specifically excluded from the reservation.

<sup>417</sup> Government of Wales Act 2006, sch 7B para 8. A reserved authority is defined as Ministers of the Crown or government departments or "any other public authority apart from a Welsh authority".

## Chapter 6: Civil and criminal liability for coal tip hazards at common law

- 6.1 The presence on land of a hazardous coal tip can, in principle, involve the owner or occupier of the land in civil or criminal liability at common law or under the general rules of occupier's liability that are now statutory but are derived from the common law.<sup>418</sup> There have been a number of cases involving the coal mining industry in which common law civil liability has provided compensation for damage caused by a coal tip failure. Whilst we are not aware of any prosecutions, we think that the dangerous state of a tip could, at least in theory, amount to grounds for a prosecution.
- 6.2 In both the civil and criminal spheres, the concept in play is that of nuisance which, broadly speaking, involves using land in a manner which interferes with the use or enjoyment of other neighbouring land or endangers the public. Use of land in a way that interferes with another person's use of their land is a private nuisance, which is a tort, while use that endangers the general public is a public nuisance, which is both a tort and a criminal offence at common law.<sup>419</sup> Also relevant in the civil sphere are the "sub-species" of nuisance known as the rule in *Rylands v Fletcher* and the more general tort of negligence, which (very broadly) involves doing things that will foreseeably cause harm.
- 6.3 We include discussion of this topic by way of background and also because it reinforces us in the view that an improved regulatory system for coal tips is required. Our brief survey of the caselaw serves to highlight the distinction between regulatory action, aimed at preventing harm from occurring, and the litigation which may follow after things have gone wrong, when the objective is to determine who bears responsibility for the damage caused.
- 6.4 The cases also demonstrate that the common law does not set a precise threshold for responsibility. In contrast to a regulatory framework which can specify, for example, that all tips above a certain height should be inspected at specified intervals, the common law attributes civil or criminal liability on the basis of broader concepts such as reasonableness and dangerousness. While civil or criminal liability may be able to provide a remedy or a sanction after the event, we do not think – and no stakeholder has suggested to us – that it is able to moderate the conduct of tip owners sufficiently precisely or effectively to prevent harm occurring.

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<sup>418</sup> The common law is that part of the law of England and Wales that is not contained in legislation but has evolved through judicial decisions.

<sup>419</sup> A tort is a civil wrong which the courts can prohibit by granting an injunction or award damages after the event.

## COMMON LAW CIVIL LIABILITY

### The rule in *Rylands v Fletcher*

- 6.5 The rule in *Rylands v Fletcher*<sup>420</sup> is “a sub-species of nuisance, which is itself a tort based on the interference by one occupier of land with the right in or enjoyment of land by another occupier of land”.<sup>421</sup> It establishes strict liability in the event of an escape of anything collected on a defendant’s land in a non-natural use, where that escape is likely to cause harm and the damage is a natural consequence of the escape.<sup>422</sup> Blackburn J provided the classic formulation of the principle:

We think that the true rule of law is, that a person who for his own purposes brings on his land and collects and keeps there anything likely to do mischief if it escapes, must keep it in at his peril, and, if he does not do so, is prima facie answerable for all the damage which is the natural consequence of its escape ... it seems but reasonable and just that the neighbour, who has brought something on his own property which was not naturally there, ... but which he knows to be mischievous if it gets on his neighbour's, should be obliged to make good the damage which ensues if he does not succeed in confining it to his own property ... he should at his peril keep it there ... or answer for the natural and anticipated consequences.<sup>423</sup>

- 6.6 In Blackburn J's formulation, the rule applies to bringing onto the defendant's land things likely to do mischief if they escape, which can be described as “dangerous things”. The *Rylands v Fletcher* case itself involved the escape of a large accumulated mass of water stored in a reservoir constructed by the defendant to supply water to his mill. Water escaped into nearby disused mineshafts, and in turn flooded the plaintiff's mine. The rule has been applied to many other hazardous things, including water, fire, gas, electricity and poison.<sup>424</sup>
- 6.7 The decision in *Attorney-General v Cory Brothers*<sup>425</sup> was an application of the principle to colliery spoil tipped on a hillside without drainage provision. The spoil was found to constitute a “dangerous thing”. Two sets of proceedings were involved.
- 6.8 The first action was brought by the Attorney-General on behalf of an urban district council, and by the council itself. The plaintiffs claimed an injunction against a colliery company in respect of damage done and threatened by a landslide which fell on a road vested in the council in the autumn of 1916. The colliery company had tipped a vast mass of colliery spoil on the side of a hill adjoining the mining village of Pentre in

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<sup>420</sup> *Rylands v Fletcher* (1866) LR 1 Ex 265, (1868) LR 3 HL 330.

<sup>421</sup> Lord Bingham in *Transco plc v Stockport MBC* [2003] 3 WLR 1467, [2004] 2 AC 1 at [9].

<sup>422</sup> The strictness of the liability standard in *Rylands v Fletcher* has, since the decision in *Cambridge Water Co v Eastern Counties Leather plc* [1994] 2 AC 264, [1994] 2 WLR 53, been tempered by the requirement for reasonable foreseeability of damage. This is discussed at para 6.13 below.

<sup>423</sup> (1866) LR 1 Ex 265, 279, formulated in terms afterwards approved by the House of Lords (LR 3 HL 330, 339-340).

<sup>424</sup> AJ Waite, “Deconstructing the Rule in *Rylands v Fletcher*” (2006) 18 (3) *Journal of Environmental Law* 423.

<sup>425</sup> *Attorney-General and Others v Cory Brothers and Co Ltd and Others; Kennard and Others v Cory Brothers and Co Ltd* [1921] 1 A.C. 521, [1921] 1 WLUK 139.



the Rhondda valley.<sup>426</sup> The plaintiffs argued that the company had failed to take reasonable precautions to secure the stability of the spoil. In a second action, brought by the landowners who had granted the licence to the company to tip, the plaintiffs claimed an injunction and damages in respect of damage done by the landslide to houses belonging to the plaintiffs. The House of Lords found on the evidence that the landslide was due to the negligence of the company in depositing the spoil on the hillside without draining the site of the tips. The company was found liable in the first action both on the principle in *Rylands v Fletcher* and on the ground of negligence and, in the second, on the ground of negligence.

- 6.9 The company had attempted to argue that the landslide was a purely natural phenomenon caused by the sliding of the surface soil down the sloping side of the mountain under the lubricating action of water. Alternatively, they contended that the landslide had been caused by a large bank of spoil from an old quarry worked on the land from 1891 to 1904, long before the colliery tips were made. The Court of Appeal had determined that the landslide was due to natural causes. Overturning this decision, Viscount Haldane reasoned:

It is common ground that the presence of water in large quantities due to excessive rainfall brought about the slide, but the question is how it did so. If the tips were of excessive dimensions, and the weight of the 500,000 tons of mineral rubbish of which they consisted was such that when their base was saturated they were set in motion, then that is sufficient, if it is proved to have been the real origin of what happened, to fix the colliery company with liability. For if such rainfall as could make this enormous heap of stuff slide was a possible occurrence, it was negligent to put it there without taking adequate precautions to secure its stability. The liability may be based on actual negligence, as I have just suggested, or it may be established merely by showing that the hillside was steep, and that to pile rubbish on it in a large heap was to put a dangerous structure there, which was so put at the risk of the company should damage result. The line of demarcation between the proof of negligence and the proof of what is necessary to bring such a case within this well-known principle of *Rylands v. Fletcher* is but a faint one in such circumstances as we are now considering. The rainfall proved to have occurred at the period of the slide was no doubt unusually heavy, but it was of no unique character, nor of such as ought not to have been foreseen as possible.<sup>427</sup>

- 6.10 While the rule appears sweeping in its imposition of strict liability, its application has been confined to limited circumstances. It only arises in the case of an escape. It is a remedy restricted to damage to land or interests in land; it does not apply to works or enterprises authorised by statute; liability is excluded if the escape is due to vandalism or unusual natural events; the circumstances in which it applies – an escape of a dangerous thing, not attributable to an unusual natural event or the act of a third party – would usually also give rise to an inference of negligence; and the exception for “natural” uses of land is “broad and ill-defined”.<sup>428</sup>

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<sup>426</sup> We referred to this slide at para 2.8 above.

<sup>427</sup> [1921] 1 AC 521 at 536, [1921] 1 WLUK 139.

<sup>428</sup> Lord Hoffmann in *Transco plc v Stockport MBC* [2003] UKHL 61 at [39], [2003] 3 WLR 1467.



- 6.11 The ambit of “natural” use is of particular relevance in the context of coal tip safety. In *Transco v Stockport MBC*, the House of Lords held that the requirement of non-natural use would only be met by uses “shown to be extraordinary and unusual”.<sup>429</sup> It is possible that a disused coal tip which has been on a site for many years might not for this reason be considered to be a “non-natural use”.
- 6.12 Another restriction of the application of the *Rylands v Fletcher* rule relates to remoteness of damage. Liability is limited to the reasonably foreseeable consequences of the escape.<sup>430</sup>

### Reasonable foreseeability of damage in private nuisance

- 6.13 Foreseeability of damage was debated in the Court of Appeal in a case arising from coal tip remediation, *Arscott v The Coal Authority*.<sup>431</sup> Following the Aberfan disaster, there was pressure on the National Coal Board (the NCB, later known as British Coal) to remove the remaining coal tips in the area. As part of works to remove two coal tips entirely, the NCB used coal spoil to raise the height of the banks of the River Taf. The spoil created an enhanced risk of flooding of homes and, at a time of heavy rainfall in 1998, flooding occurred. The claimants, 32 occupiers of houses affected, argued that the NCB, for whose liabilities the Coal Authority was statutorily responsible, had created a foreseeable risk of flooding and were for this reason liable in private nuisance.
- 6.14 The Court of Appeal found that, although the infilling in the 1970s had been the cause of the floods, the flooding that had occurred in 1998 was not foreseeable at the time of the infilling. Lord Justice Laws reaffirmed that reasonable foreseeability of damage is a condition of liability in nuisance and emphasised that the rule in *Rylands v Fletcher* is subject to this requirement no less than any other category of nuisance. He went on to consider what constitutes a reasonably foreseeable event:

Now, I readily accept that an event may be reasonably foreseeable even though the precise mechanics of its causation are not ... But reasonable foreseeability must imply some understanding of the chain of events which is putatively foreseen; otherwise we are looking not at foresight but divination ... .

- 6.15 Although dismissing the claim by reason of the findings on reasonable foreseeability, the court also considered that the “common enemy” rule applied. This holds that it is lawful for a landowner to erect a barrier on land to protect it from flooding even though that may result in the flooding of someone else’s land.

### Unreasonable use of land in private nuisance

- 6.16 *Anthony v The Coal Authority*<sup>432</sup> applies the broader principles of the law of nuisance in the context of coal tip safety. A coal tip which had operated as part of a colliery near Swansea from 1957 to 1972, while it was owned by the NCB, caught fire in 1996. The fire burned until 2000, generating large clouds of smoke and dust and a pungent smell

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<sup>429</sup> Above, Lord Bingham at [11].

<sup>430</sup> *Cambridge Water Co v Eastern Counties Leather plc* [1994] 2 AC 264, [1994] 2 WLR 53.

<sup>431</sup> *Arscott and Ors v The Coal Authority and Anr* [2004] EWCA Civ 892, [2005] Env LR 6.

<sup>432</sup> *Anthony and Ors v The Coal Authority* [2005] EWHC 1654 (QB); [2006] Env LR 17.

of sulphur. It was extinguished by the county council in 2000 at a cost of approximately £1 million. The colliery had closed in 1983. The NCB re-shaped and partially remediated the tip in 1987. In 1995 the land was transferred by British Coal, which had by this time taken over the ownership of the tip, to a group of commoners for £1. The transfer contained a covenant by the commoners relating to the aftercare of the tip.

- 6.17 Seven claimants, occupiers of properties affected by the fire, brought an action in private nuisance, negligence and public nuisance against the Coal Authority as the successor to the liabilities of the NCB and British Coal. They claimed that the fire was caused by spontaneous combustion of the coal waste within the tip, and that this had been caused by defective formation of the tip when it was in the hands of the NCB. They argued that the tip when formed was a potential nuisance and that the fire was the foreseeable result; the NCB, and thus the Coal Authority, was liable in nuisance. The Coal Authority accepted that it was liable for the acts and omissions of its predecessors but denied that the NCB had created or continued a nuisance. It contended that the tip was a necessary consequence of coal mining and a reasonable use of the land, and that the risk of damage being caused by fire resulting from spontaneous combustion was not reasonably foreseeable.
- 6.18 Mr Justice Pitchford found that the tip fire had been caused by spontaneous combustion. He considered the decision in *Cory Brothers* and noted that in that case it had been agreed that non-natural or extraordinary use is not necessarily the same thing as unreasonable use.

It seems to me, however, that the creation of an artificial structure which is potentially dangerous (which the House of Lords regarded as non-natural or extraordinary use of land for the purpose of *Rylands v. Fletcher* liability) may also be an unreasonable use of land in proof of private nuisance. To lay a spoil heap would be an ordinary use of land for the purpose of considering liability for escape unless the manner in which the spoil is heaped creates a danger to others: see *Rickards v. Lothian* [1913] AC 263 at 280. In my view, apart from a case of escape, such a structure, giving rise to the potentiality of damage to one's neighbour may be an unreasonable use of land, for which the creator would be liable.<sup>433</sup>

- 6.19 He noted that the principle of strict liability in *Rylands v Fletcher* has been kept under control by the principle of reasonable use, or what has been called “the principle of give and take as between neighbouring occupiers of land”.<sup>434</sup> The critical issue for liability in nuisance was whether the damage caused was foreseeable:

It would not be a reasonable use of land to create or to continue a hazard which you know or should know carries a foreseeable risk of damage to your neighbour beyond the bounds of tolerance in give and take.<sup>435</sup>

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<sup>433</sup> [2005] EWHC 1654 (QB), [2006] Env LR 17 at [124].

<sup>434</sup> Lord Goff in *Cambridge Water Co v Eastern Counties Leather plc* [1994] 2 AC 264, [1994] 2 WLR 53 at [299D].

<sup>435</sup> [2005] EWHC 1654 (QB), [2006] Env LR 17 at [128].

- 6.20 He found that at the time the tip was formed, the risk of combustion had not been foreseeable, because of the type of coal in the tip, but that, due to the improvement of scientific knowledge over the 1970s, it had become foreseeable. For this reason, the owners were under a duty to abate the nuisance and liable for the damage which followed the failure to abate it. The duty was measured rather than absolute. An occupier fixed with knowledge of the risk was required to do what was reasonable in the circumstances to abate the risk. The NCB/British Coal should have carried out a risk assessment in 1987 before the restoration of the tip. The assessment would have led them to remove the risk of spontaneous combustion as part of the remediation works. The Coal Authority was found liable in private nuisance.<sup>436</sup>

## STATUTORY CIVIL LIABILITY

- 6.21 The Occupiers' Liability Acts 1957 and 1984 codify in statute the duty of care owed by those who occupy property, whether as owners or tenants, or any party who exercises an element of control over the premises, to people who visit or trespass.<sup>437</sup>
- 6.22 The Acts deal with liability that may arise from accidents caused by the defective or dangerous condition of premises. The Occupiers' Liability Act 1957 governs the duty owed by an occupier to a lawful visitor, and covers both personal injury and damage to property. The Occupiers' Liability Act 1984 imposes a duty of care with regard to personal injury to all others, for example those exercising private rights of way or rights of access to open land under the provisions of the National Parks and Access to the Countryside Act 1949 and the Countryside and Rights of Way Act 2000, or trespassers.
- 6.23 Section 2(2) of the 1957 Act sets out the duty of care to a lawful visitor. An occupier must "take such care as in all the circumstances of the case is reasonable to see that the visitor will be reasonably safe in using the premises for the purposes for which he is invited or permitted by the occupier to be there". The meaning of "premises" extends beyond buildings on land. It has been held to include, for example, a railway line, a track across a field, and open land next to a path.<sup>438</sup>
- 6.24 In respect of people on the premises who are not visitors, a duty of care arises under the 1984 Act if the occupier is aware of a danger or has reasonable grounds to believe it exists, knows or has reasonable grounds to believe that the person is in the vicinity of the danger concerned, and the risk is one against which it is reasonable to expect the occupier to offer protection. The duty of the occupier is to take such care as is reasonable in all the circumstances to prevent injury by reason of the danger concerned.<sup>439</sup>

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<sup>436</sup> For discussion of the case see M Daiches, "The case of the burning tip — a spontaneous reaction?" (2006) 14(2) *Environmental Liability* 60.

<sup>437</sup> See, for example, *Wheat v E Lacon & Co Ltd* [1966] AC 552, [1966] 2 WLR 581.

<sup>438</sup> See *Videan v British Transport Commission* [1963] 2 QB 650, [1963] 3 WLR 374, *Vodden v Gayton* [2000] 4 WLUK 172, [2001] PIQR P4 and *Singh v Cardiff City Council* [2017] EWHC 1499 (QB), [2017] 6 WLUK 511.

<sup>439</sup> Occupiers' Liability Act 1984, s 1(3) and (4).

- 6.25 In determining whether what the occupier has done is reasonable, the court may consider a wide range of factors, including how obvious the danger is, the difficulty and expense of removing the danger, and any relevant safety rules.<sup>440</sup>
- 6.26 The objective of the statutory duty is to prevent injury to those coming onto land, and once again sets a threshold of reasonable care.<sup>441</sup> This is in contrast to a statutory framework which sets a specific (though perhaps broadly-worded) safety standard. An example of such a standard is, in the case of operational mines, the general duty to ensure the safety of a tip. The statutory framework also provides for its enforcement.

## COMMON LAW CRIMINAL LIABILITY

- 6.27 The common law offence of public nuisance has been defined as follows:<sup>442</sup>

A person is guilty of a public nuisance (also known as common nuisance), who (a) does an act not warranted by law, or (b) omits to discharge a legal duty, if the effect of the act or omission is to endanger the life, health, property or comfort of the public, or to obstruct the public in the exercise or enjoyment of rights common to all Her Majesty's subjects.

- 6.28 The offence might be committed by a landowner whose land contains dangerous coal tips, particularly in its current common law formulation in which the fault element is negligence. Clause 59 of the Police, Crime, Sentencing and Courts Bill currently before Parliament would codify the offence in accordance with Law Commission recommendation, and would abolish the common law offence. The Bill adopts the Law Commission's recommendation that the fault element of the new offence should be intention or recklessness.<sup>443</sup>

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<sup>440</sup> See, for example, *AB (a protected party by his litigation friend, CD) v Pro-Nation Ltd* [2016] EWHC 1022 (QB), [2016] 4 WLUK 536 (building regulations); *McCarrick v Park Resorts Ltd* [2012] EWHC B27 (QB), [2012] 10 WLUK 851 (HSE guidance).

<sup>441</sup> For further discussion of the Occupiers' Liability Acts, see M Jones, A Dugdale, M Simpson (eds), *Clerk & Lindsell on Torts* (23rd ed, 2020).

<sup>442</sup> P J Richardson (ed), *Archbold: Criminal Pleading, Evidence and Practice* (2021) para 31-40.

<sup>443</sup> Simplification of the Criminal Law: Public Nuisance and Outraging Public Decency (2015) Law Com No 358.

## Chapter 7: Problems with the 1969 Act

- 7.1 Having reviewed the law relating to coal tip safety, with a particular focus on the regime for disused tips under Part 2 of the Mines and Quarries (Tips) Act 1969, we will in this chapter describe the problems encountered by those involved with its implementation, and their views on how these problems could best be resolved. This description is based on discussions with a number of local authorities (including those with the seven largest numbers of coal tips in their areas), the Welsh Local Government Association (WLGA) and Natural Resources Wales (NRW). It is arranged in accordance with the general themes identified by these stakeholders. Where relevant, other stakeholder views have also been included.<sup>444</sup>

### PROBLEMS

- 7.2 The majority of the issues reported to us concerned shortcomings in the current legislation. Most of this chapter describes these, together with suggested solutions. Two preliminary matters were raised that are not shortcomings in the legislation itself but are issues that any replacement legislation must address.

#### Loss of specialist skill and experience

- 7.3 A number of local authorities (particularly the smaller ones) explained to us that over the past 15 to 20 years they have lost the expertise that they once had in coal tips. This reflects the decline in coal mining activity in recent decades but has been caused by a number of factors including retirements, local authority restructuring and funding constraints. Responsibility for coal tips nowadays often falls within the flood, highways or land drainage department of the authority rather than with a specialist coal tip team. In smaller authorities coal tip safety can be just an aspect of one person's job. Many of the people responsible for tips within local authorities are engineers whose background is in an entirely different area.
- 7.4 One local authority with a large number of tips told us that it had managed to retain a considerable amount of experience in the council. But most of the authorities we spoke to expressed doubt that they had the capacity to build skills through training and experience. As the number of staff with coal tip expertise has diminished over the years, it was all too often the case that the acquisition of skills through training and experience would last only as long as one person's employment at the authority.

#### Local authority resources

- 7.5 Every authority we spoke to mentioned that resources were an issue. The work involved requires huge resources. We understand that even larger authorities only have the ability to act reactively rather than proactively. Some authorities have struggled to find resources to carry out inspections, let alone to do any maintenance. One official recalled that in the past, the former county council had operated a code of

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<sup>444</sup> We met with the following local authorities: Caerphilly, Rhondda Cynon Taf, Merthyr Tydfil, Neath Port Talbot, Bridgend, Swansea, Blaenau Gwent and Monmouthshire. Full details are given in app 1 to this paper.

practice which involved weekly, fortnightly and monthly inspections of tips, and would also inspect after heavy rain. This was closely linked to the National Coal Board's methodology. They had a dedicated team in each area and knew the sites well. Now the council may inspect the same sites every year, two years or four years or may decide that there is no need to inspect at all. Another local authority told us they could keep up with inspection duties, but maintenance had been badly hit by financial constraints. Another said they could operate only an *ad hoc* system of inspection, which included responding if a member of the public contacted them with concerns.

- 7.6 One authority mentioned that drone surveys had helped with this problem and gave them more detailed information about the tips than walkover inspections. The surveys can produce contoured plans that the local authority can compare future surveys against to see if there has been any movement. This also helped with inspecting tips where the terrain makes access difficult. The authority thought that drone surveys were more economical in the long run.
- 7.7 Another aspect of resourcing problems mentioned to us related to tips in local authority ownership which were purchased during the era of the Land Reclamation Programme<sup>445</sup> with the expectation that funding would be available from the Welsh Development Agency to cover the cost of remediation. When the programme was shut down in 2012, the local authorities were left holding what were described as the “runts of the litter” with no prospect of capital grants or of generating income from them as there was no longer a market for the coal which could be recovered from them. Many of these tips are also very difficult to access.
- 7.8 There was a clear view expressed by all local authorities that they did not have capacity to cope with any increased burdens that future reforms might place on them.

### Cumbersome procedures

- 7.9 Local authorities identified a number of problems with the 1969 Act. The first was that the legislation is outdated, having been introduced when the mining industry was active and specialist experience available. Seventy percent of the tips were now in private ownership with no connection to the industry. They also thought that fines had no deterrent effect.<sup>446</sup>
- 7.10 We were told that local authorities mainly rely on their section 13 power of entry to carry out exploratory tests, their power under section 14 to serve a remediation notice on the landowner, and their section 17 power to carry out works themselves. The main difficulties that the authorities encounter in attempting to exercise these powers include the following.
- (1) The 1969 Act powers are framed around ensuring that disused tips do not, due to instability, constitute a danger to members of the public. Local authorities can determine whether there is a danger either from a report provided by landowners or by surveying the tip themselves. One authority reported that they have conducted such inspections for high risk tips, but it would be too resource-

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<sup>445</sup> The Land Reclamation Programme is discussed in ch 3.

<sup>446</sup> Various offences in connection with notices under s 12, entry onto land under s 13 and s 18, remedial operations under s 14 and of obstruction contrary to s 26 are punishable on conviction by a fine.

intensive to do this for lower risk tips. Some authorities considered that they were constrained in the exercise of the power by a need to show cause to suspect instability. Others interpreted the power more broadly.

- (2) A local authority is not able to exercise powers of entry in an emergency without showing that there is a danger to the public. This puts the authority in a “Catch 22” situation where they are unable to intervene until they can prove the risk, but they are unable to prove the risk without intervention. Tip owners may also dispute that there is a danger to the public by arguing that the risk could be alleviated otherwise than by remedial works. For example, they might argue that a public footpath running near a tip showing signs of movement could be closed to the public.
- 7.11 In order to serve a remediation notice under section 14, the authority must be able to prove that there is a danger to the public. The work to prove this is extensive, expensive and difficult as the test is ultimately subjective. It may not be possible to recoup the costs incurred.<sup>447</sup> Even with the exercise of section 17 powers, owners may dispute whether the work is necessary. On the other hand, owners sometimes want to show there is a significant risk, for example so that they can set up a coal washing operation which the local authority can find itself compelled to argue against.<sup>448</sup>
- 7.12 There were almost unanimous views that the mechanism for the service of notices is cumbersome, time-consuming and costly. Some authorities explained that their limited resources made them fearful of using the notice procedure owing to the legal costs that they could incur; they had become risk averse. Even issuing a notice and chasing up the land owner is costly. Once a notice is issued, landowners can dispute what needs doing. In many cases the authorities relied instead on correspondence and informal negotiation with tip owners. One local authority observed, however, that it was good that there was a mechanism to allow tip owners to resist overzealous intervention by local authorities.
- 7.13 Where local authorities do manage to step in and do the work, it is possible under the Act to charge the cost to the owner. However, if the landowner has no resources, the debt is likely simply to become a charge on the property so that it can be years before the authority is paid back. In some cases the cost may exceed what can be recouped, because the value of the property is less than the cost of the work. A few authorities had examples of a mechanism with similar difficulties under the Highways Act 1980 and the Land Drainage Act 1991.
- 7.14 Local authorities also reported difficulties with landowners who do not want them to enter onto the land. One authority described having dogs set on them and another a shotgun being pulled on them (even though they always take with them a letter explaining their section 13 right of entry).

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<sup>447</sup> S 23 of the Mines and Quarries (Tips) Act 1969 permits recovery only of costs of “exploratory tests”, and only where they give rise to a notice under s 14 or the carrying out of works under s 17.

<sup>448</sup> Coal washing refers to washing fragments of coal out of the spoil with a view to its reuse. This is out of line with Welsh Government policy, which only allows coal mining for limited purposes. There is also now little economic value in the retrieved product.



- 7.15 In some cases it is difficult to work out who the owner is. The loss of experience and specialism in local authorities has made this worse. When there was a dedicated full-time staff member inspecting tips, there were informal ways of identifying the owner.
- 7.16 The WLGA reported that many local authorities have complained about the lack of consistency in the approach taken to the use of the 1969 Act across local authorities in relation both to local authority and privately owned tips.

### **Lack of power to require or perform maintenance**

- 7.17 Local authorities pointed to a major gap in the legislation, between inspection on the one hand and urgent remediation on the other. There is nothing in the framework to ensure that tip owners carry out necessary routine maintenance or to empower the authority to do the work themselves. Local authorities cannot take effective action until they can show that there is a danger to the public. This means waiting until a tip is already unstable, even if the authority are aware that, for example, the tip was formed without a drainage system. They can send a letter pointing out ownership liabilities to encourage owners to deal with less serious maintenance issues such as inadequate or blocked drainage, scours and small scars but, in the absence of any legal sanction, they find that the work does not get done.
- 7.18 There was a clear consensus that it would be better for local authorities to be able to intervene proactively. Ultimately it is maintenance work that stops the tips becoming a danger. Proper maintenance would also be more cost effective: once a tip needs remediation work, the cost of the works is likely to be beyond the resources of most private owners. Service of a notice at that stage could trigger bankruptcy.
- 7.19 Local authorities explained that the same situation arises with the Land Drainage Act 1991: they need there to be an impediment of flow in order to intervene. This means that an authority cannot fix a culvert until it blocks, potentially causing flooding. They have no powers to deal with gradual decline. There are certain ways around this – for example, they can apply for a grant from the Welsh Government flood scheme, but only if two or more residential properties are at risk.
- 7.20 The public, we were told, are very aware of the limitations of local authority powers. They can see for themselves signs of inadequate maintenance but know that the local authority cannot intervene until there are clear signs of instability such as cracks or vegetation die-back caused by the escape of poisonous gases.

### **Issues with landowners**

- 7.21 We were told that landowners are often unaware of their maintenance responsibilities, or even that they have a coal tip on their land. Even if they are aware of the problem, they often lack the resources to do any maintenance on the tips. Many tip owners are small farmers. One local authority described writing to some landowners to explain their responsibilities; they simply replied to say that the council should come to check on the tips if they had concerns. Some landowners were instanced as having the resources to hire their own member of staff to deal with their tips; however, these were a minority.
- 7.22 Some landowners have attempted to modify tips in a problematic way which has affected the stability of the tip; one example given was a plan to create a shooting



range. There have been a few minor incidents where individuals have tipped material on top of existing tips. One local authority reported instances of tip owners digging into tips. Felling trees can also increase the risk of landslips.

- 7.23 The most serious incident reported to us was the flooding of a school caused by works carried out by a tip owner, requiring the council to access the site under emergency powers to carry out emergency work on culverts. The landowner sued the council on the grounds of improper service of notices and was awarded a substantial sum in damages.
- 7.24 One local authority described an emergency situation some 15 to 20 years ago where an owner had decided to modify an older disused tip situated above a housing estate. The authority were concerned that the owner had compromised the stability of the tip, despite assurances from the owner that the works had been approved by a geologist. The council had to obtain a warrant to inspect the tip and carry out a full inspection, including boreholes and slope analysis. This revealed some areas of instability, but not such as to affect the safety of the housing estate. The cost of the investigations fell to the authority, but they considered it to be their duty to prioritise safety in an area with significant receptors.
- 7.25 There are also cases where it is very difficult to work out who is responsible where a remediated tip has been built on. For example, if a tip has a housing estate on it, it is unclear who is responsible for the periphery drainage of the former tip. It could be that each house is responsible, but it would be better for one body to be responsible for the drainage. Alternatively, some argue that it may be better to deal with this as part of the wider maintenance plan for the estate as a whole, and not to treat it as a coal tip-related problem.<sup>449</sup>

### Unauthorised interferences

- 7.26 Some tip hazards are caused by activities of trespassers. NRW reported having to put extra grilles in the drainage channels on their tips to stop people bobsleighing down them. Stones lining the drainage channels on NRW sites have been stolen and vandalised. Local authorities have experienced problems with motorcycle scrambling on disused tips. This activity can cause significant erosion of the surface of the tip.

### Clash of regimes

- 7.27 Another issue that local authorities have been facing is a clash between environmental legislation and their public safety responsibilities. The 1969 Act is not designed to interact with modern environmental protection. It prioritises public safety, while environmental legislation imposes requirements that can obstruct remediation and clean-up works. The problem arises when the material on a tip moves. Once separated from the tip, the material is likely to fall within the definition of waste for the purposes of the Environmental Permitting Regulations 2016.<sup>450</sup> This means that a permit will be required to do anything with it. The process of obtaining a permit can be lengthy, and may involve a need to undertake environmental impact assessments and

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<sup>449</sup> Stephen Smith, member of the Welsh Government Expert Group on Coal Tip Safety.

<sup>450</sup> See para 5.18 above on the Environmental Permitting Regulations 2016.

to design works in a way which protects the ecology of a site. It also makes the works more expensive. A similar problem also arises when tip material enters water.

- 7.28 The Tylorstown tip slide was cited as a good example of the problem.<sup>451</sup> Rhondda Cynon Taf (RCT) explained to us that the tip slide created a number of hazards which required urgent resolution. The material which came down in the slide created a risk of flooding as a result of blockage of the Rhondda Fach river. It also created a risk of pollution from a damaged foul sewer pipe broken by the impact and threatened the integrity of a high pressure water main providing potable water to the greater Pontypridd area which could have created additional flooding. When RCT moved the material a few hundred metres to temporary storage sites, however, they found that they had possibly infringed waste management legislation by failing to obtain a waste licence. In their view, they had adopted the least harmful option; moving the material to the nearest licensed waste facility would have had a much more severe environmental impact, requiring thousands of highly polluting journeys by heavy lorry through narrow residential streets. It would also have taken longer to do, and there was an immediate flood risk which needed to be addressed.
- 7.29 RCT were also of the view that the material which came down in the slide did not fall within the definition of controlled waste and a licence was not required for its removal. NRW took a different view. In view of the urgency of the situation, the council took the decision to proceed with removing the material from the river and transferring it to storage sites. As part of the remediation process, the material needed to be dried out. It could not be reworked or shaped into the correct contours whilst wet. The drying process would have been required even if the material was being moved to a licensed waste facility.
- 7.30 Due to the urgency of the situation, RCT also had to undertake the works without planning permission. They had applied retrospectively for the permissions required as soon as was practicable in order to retain the use of the sites where the spoil from the slides had been deposited. Only by going through these procedures could the Council argue that they had made the right decision at the time of the slide, and caused the least harm. In their view, requiring retrospective applications for permission is a better approach to emergency provision than an outright exemption, as this would ensure that councils doing urgent work would be aware of the need to make a decision that could be justified later. They also thought that it would be useful to have an emergency power permitting an undertaking to be given by the council to resolve these issues after the emergency action is taken.
- 7.31 RCT's retrospective planning applications relating to the temporary storage of the tip material were considered by the council's planning committee on 21 January 2021, together with an objection relating to environmental concerns, and approved.<sup>452</sup> RCT

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<sup>451</sup> Described at paras 1.3 and 1.4 above.

<sup>452</sup> The planning application was composed of two separate applications: 20/1312/08: Temporary deposit and storage of approximately 8,000m<sup>3</sup> of material from Tylorstown landslip consisting of the formation of stockpiles, material consolidation, drainage, habitat/ecological mitigation measures and associated works (Part Retrospective) ([rctcbc.gov.uk](http://rctcbc.gov.uk)); and 20/1313/08: Temporary deposit and storage of approximately 22,000m<sup>3</sup> of material from Tylorstown landslip consisting of the formation of stockpiles, material consolidation, drainage, habitat/ecological mitigation measures and associated works (Part Retrospective)

is now planning to submit a further application for the permanent storage of the material.

- 7.32 Caerphilly also gave an example of a clash between tip maintenance and water quality legislation. In Bedwas (which has a large tip), the Council owns a large attenuation pond which acts as a silt trap allowing any suspended sediment within the surface water to settle out. The accumulated sediment has to be routinely removed to ensure that the pond remains effective for its dual functions of attenuation and silt capture. During the desilting operation the pond needs to be drained, enabling the silt to be excavated and removed. Once removed, the silt is deposited back on the tip; otherwise it would have to go off-site to a waste facility, which would be very costly.
- 7.33 The pond draining is done using pumps which discharge water through a series of temporary silt traps into a stream. On one occasion it appears that silt-contaminated water was discharged owing to a failure of the controls in place; NRW accepted that this was an isolated incident but insisted that in future any discharges should be in line with water quality standards.
- 7.34 Caerphilly have told us that it is virtually impossible to comply with these standards. It is very difficult to remove the silt without muddying the water and causing some limited release of suspended solids. There is no flexibility permitted under the approach taken by NRW; the water quality standards are applied strictly. Without occasional desilting the pond cannot perform its cleaning function, while rising levels of silt rise reduce the capacity of the pond, creating a flooding risk.
- 7.35 One issue which may require resolution relates to the definition of an emergency. Regulation 40 of the Environmental Permitting Regulations protects an operator who can show that the acts in question were done in an emergency to avoid danger to human health, that all reasonable steps were taken to minimise pollution, and that the regulator was informed promptly.<sup>453</sup> In NRW's view, this provision was not intended to cover works conducted in the weeks and months following a tip slide. They consider that it was designed to cover immediate steps taken to deal with incidents that are capable of rapid resolution rather than events such as a tip slide which may take many months to resolve.<sup>454</sup>
- 7.36 Beyond the immediate aftermath of an event, NRW told us that they favour a collaborative and pragmatic approach which would allow agreement on conditions which would both be feasible in the circumstances and provide environmental protection. This would encompass some of the conditions which would have been included in an environmental permit had there been time to apply for it. In their view, the powers provided by the Environmental Permitting Regulations allow them sufficient discretion to adopt this approach. They also suggest that it would be better to make provision for a contingency infrastructure to deal with the waste released by tip slides, for example by providing storage areas for tip material near a high risk tip or in an area with a high density of high risk tips, and to prepare strategies to deal with

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|(rctcbc.gov.uk). See also <https://www.walesonline.co.uk/news/local-news/debate-over-what-tonnes-coal-19632873> (last visited 30 March 2021).

<sup>453</sup> See para 5.20 above.

<sup>454</sup> Meeting with Natural Resources Wales.

large volumes of tip material which would be available to draw upon as needed. In NRW's view an outright exemption of tip material from permitting requirements could have serious environmental consequences.<sup>455</sup>

- 7.37 Some tips also have high ecological value, with the result that work that disturbs the surface of the tip can be problematic. For example, the authorities cannot disturb a tip that hosts great crested newts. NRW would also like a resolution to this problem. It is one they themselves encounter in managing the Woodland Estate.<sup>456</sup>

### Declassification of tips

- 7.38 Some local authorities (particularly authorities with high numbers of remediated tips) thought that there should be a system for declassifying tips that have been built on or remediated to such an extent that they pose little risk. Some tips have entirely disappeared, for example under motorways. One authority also thought that very small tips should be declassified. Some wanted a better legal definition of a tip, and clarification on whether a remediated tip should remain on the register of tips.
- 7.39 Other local authorities disagreed that tips should be declassified; if tip material was present, there would always be a risk, however small. One authority pointed to sites where extensive reclamation work was done in the 1970s which now have maintenance problems. This authority still inspects tip sites which have housing estates, industrial estates and schools built on them. Another authority pointed out that these types of sites still have drainage systems that have to be maintained.
- 7.40 Engineering experts advising the Welsh Government agreed that remediated sites still require inspection and gave an example of drainage failing on a remediated site in Tredegar, causing slurry to enter a school in 2011.<sup>457</sup> The Coal Authority also takes the view that a record should be kept of such tips even where it is determined on appraisal that there is nothing left to inspect.<sup>458</sup>

### Impact of a tip register

- 7.41 One authority was concerned that, without the creation of a comprehensive regime for inspections and maintenance, the creation of a database of coal tips would produce a blight on properties in the same way that the flood map impacted on house prices and insurance premiums.<sup>459</sup>

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<sup>455</sup> Meetings with Natural Resources Wales. Ways of resolving the clash of regimes are discussed further in paras 10.121 to 10.130 below.

<sup>456</sup> Natural Resources Wales. Natural Resources Wales's role in relation to the Woodland Estate is described at paras 3.31 to 3.33 above.

<sup>457</sup> Meeting with Howard Siddle and Stephen Smith, members of the Welsh Government Expert Group on Coal Tip Safety.

<sup>458</sup> Meeting with Tim Marples, Coal Authority.

<sup>459</sup> The steps taken by the Welsh Government towards the building of a tip database are discussed further in ch 8.

## SOLUTIONS

- 7.42 In discussing the problems they had experienced in operating the 1969 Act, local authorities also identified a number of possible solutions.

### An oversight body

- 7.43 There was considerable support among local authorities, the WLGA and NRW for some kind of oversight body. Every local authority but one thought that this would be a good idea, and some questioned why the duty was originally placed on local authorities. Local authorities identified the Coal Authority and NRW as potential candidates to be the oversight body.
- 7.44 Local authorities thought that an oversight body would be able to allocate resources to areas of greatest risk and ensure standardisation of risk categorisation and inspections. One suggested that a standard form could be useful for inspections; for example, bridge inspections under the Highways Act 1980 have a standard form with a scoring system which applies across the UK.
- 7.45 Local authorities with smaller numbers of tips felt that an oversight body would be able to gain much more expertise than they could, and that it was disproportionate for local authorities with one or two tips to appoint someone to manage them.
- 7.46 Some local authorities suggested a regime similar to the Reservoirs Act 1975. NRW is the regulatory body under that regime and keeps a register of reservoirs. No duties attach to local authorities except as owner. The legislation allows reservoirs to be classified according to risk.
- 7.47 Merthyr Tydfil Council told us of their experience of the reservoirs legislation. The Council owns four reservoirs for angling purposes, and are under a duty to appoint an independent engineer from a panel of engineers to inspect them. The information is fed back to NRW, who check compliance and, if any maintenance work needs doing, give the Council a timescale in which to do the work. NRW send reminders when inspections are due. The Council pays for minor works from its structures budget and asks for funding from its capital programme if there are major works. There are other reservoirs in the authority that are privately owned and the Council is not involved with these at all.
- 7.48 The WLGA also thought that the reservoirs regime was a good model, although they recognised a few differences. The reservoirs regime requires owners to be much more proactive than the coal tips regime. In addition, unlike tips, most reservoirs are actively used, and therefore the owners are making money from them. Another problem was that it was difficult to access public money to do work on reservoirs because the Reservoirs Act places responsibility on the reservoir undertaker. The WLGA nevertheless thought that a requirement to register coal tips, along the lines of the reservoirs registration system, would be a positive reform.
- 7.49 Only one local authority did not agree with the idea of an oversight body, as they thought they already had sufficiently robust machinery in place. They could understand a desire for higher-level overview, but pointed out that there were still local issues that need to be dealt with, of which they felt that they have better expertise and

knowledge. They thought that a “Centre of Excellence” model would be better, operating as a government-level portal for local authorities and the public; this would be more in line with the Well-being of Future Generations (Wales) Act 2015. They liked the idea of having a single body that everyone could feed information into, and of everyone working to the same standard, but thought that the work itself should continue to be for the local authority

- 7.50 This authority also suggested that some of the local authorities with smaller numbers of tips could contract out the work if they could not manage it. They already carry out the sustainable drainage systems work required by the Flood and Water Management Act 2010, for example, for some smaller authorities. The legislation gives each authority responsibility, but it can contract with another local authority or a private contractor to fulfil the duties.

### Regional approach

- 7.51 The WLGA explained that there is currently much discussion around regional work. There are already four established regional partnerships of local authorities working on Growth Deals and City Deals (Cardiff Capital Region, Swansea Bay City region, Growing Mid Wales and the North Wales Economic Ambition Board). The Local Government and Elections (Wales) Act 2021 will permit the establishment of Corporate Joint Committees (CJCs). The four existing regional partnership roles could be absorbed into the new structure. CJCs will be corporate bodies in their own right, able to receive funding and employ people. They will have certain roles in relation to strategic land use planning, transport planning and economic well-being.<sup>460</sup> Over time, the participating local authorities could choose by agreement to add additional functions. This model could provide for coal tip safety oversight at a regional level to allow the sharing of expertise, with the local authorities exercising coal tip safety functions.
- 7.52 Flood management was cited as another example of work conducted at a regional level. Wales is divided for this purpose into three regions: the South East, the South West and the North. The WLGA emphasised that the legislation would need to be adequately funded as recently it is becoming very difficult for local authorities to deliver on new legislation if it is not funded properly. The flood management regions, for example, have absolutely no extra capacity.
- 7.53 Another option suggested by the WLGA as an alternative to the CJC model is for the County Surveyor Society Wales to collaborate on coal tip safety to share good practice; it is a professional association of local authority chief officers with expertise in, for example, engineering and infrastructure who operate at strategic level.<sup>461</sup> In the WLGA's view, this level of collaboration might help to ensure that coal tip safety is given the priority it requires.
- 7.54 On the other hand, a number of local authorities expressed reservations about regional divisions. They thought that this could isolate areas in the south with large

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<sup>460</sup> The Local Government and Elections (Wales) Act 2021 provides for the establishment of Corporate Joint Committees in pt V.

<sup>461</sup> See <http://www.css.wales/default.aspx> (last visited 26 March 2021).

numbers of tips, and therefore experience, from local authorities with far smaller numbers, such as in the north.

### **Inspection**

- 7.55 Local authorities wanted greater clarity about their powers to go on site to carry out an inspection. They did not want to be tied to a need to justify intervention by reason of a perceived danger to the public. One authority suggested that reforms should be built around a duty to inspect. They felt that this was their moral duty, but that the legislation did not reflect this. This duty should be accompanied by a standardised approach to classification of risk.

### **Maintenance**

- 7.56 As a solution to local authorities' inability to do or compel owners to do maintenance on privately owned tips, one authority suggested a system with stepping stones between inspection and emergency work. It would need to involve powers to do or to compel the owner to do basic maintenance. There would also need to be a graduation of enforcement options in response to a range of possible harms, with compulsion as a last resort. If local authorities did the inspection and monitoring and were able to rectify issues with small-scale, less costly works, the tips would not become a danger.
- 7.57 One local authority regarded some of the maintenance issues as so minor that it would be easier and cheaper for the authority to do the work than to go through legislative machinery to require the owner to do it or to cover the costs. In the case of the tasks revealed by the Task Force inspections in the summer and autumn of 2020, many of the drainage issues would be a day's work for the authority. It would take more time and money to serve notices on the owners to deal with the issues.

### **Restrictions on landowners modifying coal tips**

- 7.58 The WLGA suggested that permission might be required for activities on or adjacent to coal tips; this would combat the problem of landowners carrying out destabilising activities on their tips. They suggested the model of feature designation under the Flood and Water Management Act 2010, which introduces powers of control.

### **Panel of engineers**

- 7.59 Local authorities also liked the idea of a panel of engineers for coal tips, similar to the reservoirs regime. It would be useful to have a bank of experience to draw from and ensure that the engineers carrying out the inspection were properly qualified. The WLGA also thought that a panel of engineers would be a good idea, and could lead to a much more structured approach to maintenance.

### **Ownership**

- 7.60 The WLGA thought that compulsory purchase could potentially solve the problem of the lack of private owner resources. The Well-being of Future Generations (Wales) Act 2015 could support this, although local authorities are unlikely to want to take on a liability if they are under-resourced. Compulsory purchase could nevertheless be cheaper than serving notices on landowners and attempting to ensure that they do the maintenance. But there would also be a risk of a perverse incentive for landowners



with tips requiring expensive work to neglect maintenance in order to invite compulsory purchase.

### Alternative uses of the land

- 7.61 The WLGA also mentioned the national habitat creation programme which looks to mitigate the environmental loss caused by works done.<sup>462</sup> Coal tips could be regarded as a bank of land for biodiversity. NRW said the same about the carbon capture and the biodiverse potential of coal tips. Coal recovery is no longer regarded as a good option.

### Long-term view

- 7.62 The WLGA thought it extremely important that a long-term view was taken, with certainty of funding. This could be based on an overall view as to what works are needed, tackling the highest risk first and then lining up the contracts to do the work. Many local authorities commented on the remaining potential to reclaim tips for development purposes, with more funding.

### Clash of regimes

- 7.63 A number of local authorities saw a need for a power to override the waste management legislation to deal with a tip slide, for example to remove a blockage, in an emergency. One suggested approach was to waive the need for consents; this was done by NRW following the storms in February 2020, when they notified local authorities that consents would not be required to mend watercourses. Normally this required a Flood Risk Activity Permit which would take two months to obtain.
- 7.64 Another suggested option was for a Minister to give a specific direction or make a specific order via a simplified procedure (similar to the powers in the Civil Contingencies Act 2004) when a major slide occurs. This would operate to trump the requirements of environmental protection legislation.
- 7.65 One local authority suggested that classifying colliery spoil as non-hazardous could solve the problem, as it would make it cheaper to move the material. In their view, the legislation needs to look at the situation from a broader perspective, with joined-up thinking and a more pragmatic approach which could allow the authority to reach a “least worst” option that balanced all the possible harms. The authorities involved in the decision-making are all public bodies who ultimately share the same health and safety goals.
- 7.66 Conversely, NRW thought that exemptions could have harmful environmental consequences, and preferred to tackle the problem through better contingency planning to ensure that infrastructure exists to deal with tip material in the event of a slide. An outright exemption would also mean that no further action was required in the period following an emergency to mitigate the harm caused by the slide. The need to apply for consents, even if done retrospectively, would help to ensure that the

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<sup>462</sup> See Welsh Government, *Flood and Coastal Erosion Risk Management projects and the National Habitat Creation Programme (NHCP): supplementary note* (14 February 2020), <https://gov.wales/flood-and-coastal-erosion-risk-management-projects-and-national-habitat-creation-programme> (last visited 26 March 2021).



option with the least harmful environmental impact is chosen as a long-term solution.<sup>463</sup>

## THE NEED FOR A NEW REGULATORY FRAMEWORK

7.67 We find the views of stakeholders expressed in this chapter very illuminating; they have identified a number of gaps and limitations in the current safety regime for disused tips. We find their evidence compelling and in chapter 10 we provisionally propose and seek views on ways to remedy the deficiencies. In formulating our provisional proposals and questions for consultees we have reviewed a wide range of possible alternative approaches. The next two chapters describe the initial work commissioned by the Welsh Government since the Tylorstown slip and review existing regulatory models applying to other environmental hazards.

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<sup>463</sup> Meeting with Natural Resources Wales.

## Chapter 8: The initial work commissioned by the Welsh Government

- 8.1 This chapter will consider the coal tip safety work which followed the Tylorstown tip slide in February 2020. It will look in detail at the work of the Coal Authority commissioned by the Welsh Government. It will also look at the views of the Coal Authority in relation to tip management, as a stakeholder with experience of managing its own tips. It will consider whether there are elements of the initial response which could form part of the solution to the problems with the current regulatory regime we have identified.

### INITIAL SAFETY WORK COMMISSIONED BY THE WELSH GOVERNMENT

- 8.2 As explained in chapter 1, the Coal Tip Safety Task Force was formed immediately following the Tylorstown slide on 16 February 2020. The First Minister commissioned the Coal Authority to carry out an immediate review of all coal tips in Wales. The Coal Authority tips response team was established on 24 February 2020. The team undertakes work on behalf of the Welsh Government coal tip safety policy team.
- 8.3 The Coal Authority tips response team was asked to develop two parallel work streams: data-gathering from local authorities as a first step toward the Welsh Government objective of building a complete database of coal tips, and emergency walk over inspections in conjunction with local authorities.

### Data-gathering

- 8.4 The Welsh Government asked the Coal Authority to provide information on all tips, including their location, risk category and ownership type. Local authorities were asked in March 2020 for specified information on the tips in their areas, including their current risk category and any work being done on the tips. The Coal Authority found a wide range of approaches to record-keeping, with variations in the types of information recorded, and with some local authorities not keeping detailed records or plans of tips. There was also no single system in place across all the local authorities for assessing and categorising risk. Systems used included ABCD, DCBA, ABC, CBA, 123, 321, high-medium-low and red-amber-green. The criteria applied to determine the risk rating also varied widely. In one case a complex points-based system was used.
- 8.5 By the summer of 2020, the total number of tips identified was around 2,000. This involved checking numerous data sources: Ordnance Survey maps, British Geological Society data, historical tip maps, LIDAR, and aerial imagery. It was recognised that a data cleanse was then needed to ensure accuracy and to remove any double-counting.
- 8.6 By early 2021, a provisional total number of tips had been recorded as 2,144. The risk classifications are as follows:

Category A = 647

Category B = 389

Category C = 216

Category D = 78

Category R (Fully restored): 150

NR (Risk category not yet assigned): 664<sup>464</sup>

8.7 The criteria adopted to date by the Coal Authority team to provide a risk rating are based on the likelihood and consequences of tip failure. This is not the final approach, which will be decided by the Welsh Government, but is the approach which has guided the inspections completed in the first phases of the work in order to provide tip numbers. The team adopted the DCBA approach used by Rhondda Cynon Taf.

- (1) Category D: There is potential to cause risk to life or property. Site has known history of (on-going) movement / signs of instability
- (2) Category C: There is potential to cause risk to life or property. No known history of movement / signs of instability
- (3) Category B: Tip is unlikely to cause risk to life or property due to size or location. No known history of movement / signs of instability
- (4) Category A: Tip is unlikely to cause risk to life or property due to size or location. No known history of movement / signs of instability. May be impossible to detect when walking over – usually covering large area without height and vegetated – often grazed
- (5) Category R: Tip fully restored/reclaimed but kept in database as a record. Nothing to inspect.
- (6) Category NR: Tip identified – no records exist – requires assessment

8.8 The team also categorised receptors by severity of consequence in the event of tip failure:<sup>465</sup>

- (1) community homes/schools/hospitals/workplaces and/or critical infrastructure (mainline rail, main roads etc);
- (2) consequential receptors (for example, rivers which could cause flooding), other infrastructure;
- (3) few receptors – site is remote.

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<sup>464</sup> Figures provided by the Welsh Government. The NR classification may be given where a tip was not previously recorded, has not yet been inspected, or where the existing local authority rating has not yet been transferred into the standardised risk categorisations. As explained in ch 3, final figures are expected by autumn 2021.

<sup>465</sup> A receptor is a feature that could be impacted by a coal tip slide (such as a house, school or road).

- 8.9 The data gathered covers all coal tips, not only disused tips. But there are very few tips now associated with operational mines.<sup>466</sup>

### Walk over inspections

- 8.10 Walk over inspections took place over this period as a parallel strand of work which also fed into the data-gathering. The first phase of emergency walk over inspections was conducted on some higher (C and D) rated tips in South Wales over the spring and summer of 2020. The objective was to identify any urgent maintenance works and the current status of each tip. These inspections were confined to South Wales as this was identified as the area with the largest number of higher risk tips. The inspections were undertaken in collaboration with local authorities; some were conducted by the Coal Authority team, some by local authorities, and some jointly. A second round of inspections began in November 2020, when inspections of all tips allocated to category C or D were completed. The team provided written inspection reports and made recommendations to the local authorities, with timescales, as to maintenance requirements and remediation work needed. Where local authorities carried out the inspections, their reports were filed with the Coal Authority.
- 8.11 The team were provided with information on the ownership of each tip by HM Land Registry to enable them to contact the owner to undertake the inspection.
- 8.12 By the end of March 2021, the Coal Authority had performed about 220 of the second tranche of inspections, with the remainder conducted by the local authorities. In total, 294 tips were inspected. Of these, 78 are category D and 216 are category C. There are also plans for the team to engage with local authorities in North Wales, where there are also some coal tips.<sup>467</sup>
- 8.13 Further inspections will be conducted of all tips where a risk category has not yet been assigned. Final figures incorporating these categorisations are expected to be ready by the autumn of 2021.

### Standardised mapping

- 8.14 As explained above, data-gathering was a first step toward building a central database of tips. The next step was to apply a standardised approach to the mapping of tips, with supporting data. In many cases the local authorities had recorded the presence of a tip on a map with a point of reference; the team looked at historical plans to map the boundaries of the tip, in what is referred to as a polygon. Initial maps were compiled of tips in Wales, to assist in their identification and location. This data is currently being cleansed and quality assured with a view to the production of more accurate maps in the future.

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<sup>466</sup> See the section on operational mines in paras 3.3 to 3.9 above.

<sup>467</sup> Figures provided by the Welsh Government. See paras 3.41 to 3.60 above for a full breakdown of ownership and risk types by local authority.

## INTERIM APPROACH TO ORGANISING TIP DATA

8.15 The Coal Authority team have applied a provisional standardised approach to the collection of tip data. The starting point they adopted is that each tip should have its own specific reference. In the past, groups of tips may have been counted as one; this occurred when the method of tipping produced tip complexes.<sup>468</sup>

8.16 They have proceeded on the basis that the following data will need to be recorded for each tip:

1. Reference number (with a cross reference to local authority and historic numbering)
2. Boundary
3. Location (which local authority and which Local Resilience Forum)
4. Risk ranking
5. Receptors
6. Inspection frequency
7. Date of last inspection
8. Date of next inspection
9. Ownership details
10. Nearest weather station (for checking rainfall data)

8.17 Standard information in relation to the “receptors” is also required, such as:

1. Domestic, social & industrial dwellings
2. Transport infrastructure
3. Utility infrastructure
4. Ecology / SSSI / environmental sites etc.
5. Industrial heritage sites

8.18 For each tip, the team envisage that specific documents could be attached to ensure that all records are readily available and stored in one location:

1. Specific risk assessment and access points

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<sup>468</sup> The Blaencwm tip in the upper Rhondda valley is an example of this: five tips were formed in the 19<sup>th</sup> and early 20<sup>th</sup> centuries when tipping progressed from one pile of spoil to the next as each was thought to have reached capacity.

2. Snail trail of last inspection walkover
3. Inspection reports
4. Maintenance reports
5. Monitoring data
6. Visual images
7. Drone imagery including LIDAR images where appropriate
8. Topographic survey
9. Historic records (for example covenants)

- 8.19 Documents of this kind incorporate additional detail about the individual tip, for example information about its drainage infrastructure and any natural features which may have potential impact. They may include information of relevance beyond stability issues, for example by recording any internal heating or surface fire. This information contributes to the development of the tip management plan, which is discussed below at paragraph 8.26.
- 8.20 The Coal Authority team emphasised to us, drawing on their combined experience of carrying out the work commissioned by the Welsh Government and of managing their own tips, that risk categorisations are not static. With the application of control measures such as inspection regimes, monitoring, drainage channels and re-profiling, the categorisation is likely to reduce. The reduced risk categorisation can be preserved by a suitable maintenance regime. What is important is that the approach taken to risk assessment is consistent. This permits the development of a management plan for each tip.

## **VIEWS OF THE COAL AUTHORITY ON TIP MANAGEMENT**

- 8.21 In addition to asking the Coal Authority about the data-gathering and emergency tip walkovers commissioned by the Welsh Government, we also asked the team undertaking the work about their experiences in managing tips owned by the Coal Authority and their views on how to keep tips safe. In this way, as we describe in the previous chapter in relation to the experience of local authorities, we canvassed their views on possible solutions to the problems presented by disused coal tips.

### **Inspections**

- 8.22 Best management practice identified by the Coal Authority team in its work on its own coal tips assigns an inspection frequency based on risk. This might be at intervals of 1, 3, 6, 12, 24 or 36 months, depending on the profile of the tip, and will include, where appropriate, additional inspections following heavy rainfall above a designated

measure. Coal Authority practice for its own tips is to inspect after 40 mm of rainfall in 24 hours.<sup>469</sup>

- 8.23 In the view of the Coal Authority, a tip inspection would need to consider the accuracy of the data collected on the tip<sup>470</sup> and would include a requirement to confirm if the current risk rating remains accurate. This information would in turn be entered into a tip database. This approach allows the modelling of the inspection regime on the particular tip, rather than on its broad categorisation as A to D. Some A tips, for example, need to be inspected every three years, while others do not need inspecting at all but need to remain on the record.

### Maintenance and remediation options

- 8.24 The Coal Authority team considers maintenance and remediation from the perspective of a hierarchy of options. The technical details which underpin these choices are beyond the scope of this paper, but it is helpful to review the approach taken to remediation as an indication of the sort of operations which a tip management plan will contemplate. This will help to ensure that our design for a new regulatory framework will effectively facilitate the work required.
- 8.25 The hierarchy, as developed by the Coal Authority in relation to its own tips and set out in the illustration below, provides a progression of approaches from: regular inspection; the fitting of screens to capture detritus; ongoing maintenance to re-cut, clear and improve ditches and culverts; inspections in response to rainfall or on observation of cracks or slumps; installing monitoring equipment; sludging by muck-spreading and planting grass or vegetation where surfaces are bare; fitting gabion baskets (wire cages containing stone) to strengthen the toe of a tip; building concrete barriers; soil or slope nailing by covering an area with matting and driving in cables to anchor the tip; major projects to cut new ditches or build a water transverse drainage system; and reprofiling to reduce the angle of slopes. In most cases, removal of the tips is not considered to be a viable option. One of the reasons for this is the absence of available land to absorb the volume of material. Photographs of some of these approaches to remediation work in South Wales are set out in appendix 2 to this paper.

Hierarchy of Remediation
1. Inspection schedule defined/followed
2. Routine maintenance programme in place (for example, ditches and screens)
3. Infrastructure renewals programme

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<sup>469</sup> By way of comparison, measurements for Blaencwm tip in the upper Rhondda valley after Storm Ciara on 9 February 2020 totalled 60 mm over 24 hours; Storm Dennis brought 94 mm on 15 February; and 96 mm was subsequently recorded during Storm Jorge on 28 February.

<sup>470</sup> See the list at para 8.16 above.

Hierarchy of Remediation
4. Weather response programme (for example > 40mm rainfall)
5. Targeted ground investigation
6. Instrumentation – remote monitoring
7. Sludging, grassing/planting
8. Further minor civil engineering work such as soil/slope nailing, gabion baskets at toes
9. Major civil engineering such as major new ditching infrastructures
10. Reprofilling of slopes
11. Removal of tip

### Tip management plan

- 8.26 The approach outlined above permits the development of a unique management plan for each tip which includes all specified data, the risk assessment for the tip, the frequency of inspection and the maintenance and remediation work required. This could in practice take the form of a management plan for a cluster of tips. This would help to address the problems which arise where tips owned by different owners are in close proximity.
- 8.27 The standards adopted by the Coal Authority mirror those developed for the maintenance of their own tips. These are grounded in the Mines and Quarries (Tips) Regulations 1971 but have developed internally to incorporate experience and evolving best practice standards. The programme applied to the Coal Authority's own 33 tips<sup>471</sup> in Wales includes the clearing out of drainage ditches and inspection of screens designed to capture detritus after heavy rainfall. Many of these tips were originally categorised as higher risk but have been re-categorised at a lower risk level because of the consistent application of this regime.<sup>472</sup> The system recognises that each tip is different, and the requirements of the individual tip need to be developed accordingly.

<sup>471</sup> See para 3.24 above.

<sup>472</sup> In the UK as a whole, the Coal Authority allocates £350,000 annually for the care of its 40 tips, and this includes a figure of £5,000 to £10,000 for maintenance of drainage on each tip. The sums allocated reflect the high proportion of higher risk tips owned by the Coal Authority for historical reasons. The tips have been under continual monitoring and maintenance for many years.



## Views on longer-term tip management

- 8.28 As well as describing to us the work they had undertaken since early 2020 as part of the Task Force, the Coal Authority team also drew on their experience to identify a number of elements which they considered to be important for the effective longer-term management of tips.
- 8.29 The most important element in their view was the maintenance of a single database providing the kind of information currently being compiled by the team at the request of the Welsh Government (see paragraph 8.4 above). This should in their view be supported by one standardised process for inspection and reporting, which includes a clear definition of what is to be checked (for example tip material, slope and drainage). The standardisation of this process would require one reporting format, using a standard form sheet in either paper or electronic form.
- 8.30 They also thought that a regulatory system would work best where there were clearly defined expectations of both tip owners and of the authority charged with carrying out inspections and ensuring compliance. This system could be supported by uniform training standards for inspectors, and a regular tips forum for the authorities responsible for high-risk tips (possibly extending to authorities with responsibility for lower risk tips) to share best practice and technical developments, standardise communications and offer training. They also thought that it would help with communications to have a single point of contact for every public enquiry.
- 8.31 The Coal Authority team thought that central management of all the high-risk tips would be the best way to ensure the consistent assessment of risk and application of maintenance standards. This approach would also centralise responsibility for maintaining the database and checking compliance with requirements such as the logging of reports. A live interactive database could record the dates of the last and next inspections and make it easier to ensure that deadlines are met. A centralised system could also help to provide consistent governance.
- 8.32 The uniform application of a rigorous maintenance standard would, over time, reduce the level of risk. The team suggests that tips with a lower risk categorisation (A and B rated tips) would not need this level of oversight, although they would still need to be included in the central database. They could be safely managed with regular inspection and an agreed maintenance plan.
- 8.33 The team also considered the accessibility of a future database. The experience of the Coal Authority in making public mine entry maps was that there can be unintended consequences in making public the information on the database. Information on the register could affect the availability or cost of insurance or the value of properties if data is released in an uncontrolled fashion without explanation.

## LONGER-TERM WORK

- 8.34 The Welsh Government is also working to determine longer-term best practice. It is working with academics and professional bodies to consider factors such as the impact of climate change and current thinking on slope stability. It is also looking at a research programme with universities to consider potential innovative approaches to reclamation of coal tip sites. This would allow immediate remediation measures

undertaken for the purpose of ensuring coal tip safety to be conducted alongside land reclamation projects to enhance the quality of the land for future generations.

- 8.35 The Task Force is trialling new technologies. Up to twenty trials are planned to assess the use of sensors designed to warn of ground movement. There is another trial at up to five tip sites of the use of satellite imaging to detect movement of the tips. An increase in the use of drone technology is planned.

## NEXT STEPS

- 8.36 Beyond the interim measures described in this chapter, a new regulatory framework is required to ensure that a consistent regime of inspection and maintenance work continues in the years to come. The Welsh Government is working to develop a tip register and pursuing policies to develop its strategic objectives. The Coal Authority team has given a persuasive account of the elements which they consider important for a new regulatory framework. Their view tallies with many of the views of stakeholders outlined in chapter 7. There is a preliminary consensus of views in favour of a central register of tips, a uniform approach to the information to be recorded and maintained for each tip, including one agreed scheme for risk assessment and classification, and a duty of inspection which relates to all tips on the register.
- 8.37 The work done to date seems to us to have demonstrated the benefits of a unified system of oversight, and suggests that a single authority could provide consistency of approach and a more ordered system of enforcement. It also suggests that there may be benefits in a discrete management approach to higher risk tips, possibly by requiring the tip management to be conducted by the oversight body itself. This approach accords with ideas suggested to us by other stakeholders.
- 8.38 It has also been suggested to us that a system using standardised criteria to create a bespoke management plan for each tip has the potential to be extended to other types of mineral tips; similarly, a database or register of tips, updated regularly with all inspection and maintenance reports, could eventually extend to all types of tips and allow immediate access to information across Wales, reflecting the guiding principles of environmental policy provided by the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016.
- 8.39 With these elements in mind, we are in a position to look at legislative approaches in analogous areas which could provide models for aspects of a new regulatory framework. Once we have done so, we will set out our own provisional proposals for a new framework, and ask for views on each of its proposed components.

## Chapter 9: Other regulatory models

### GENERAL

9.1 The gaps and limitations identified in the regime for disused tips provided by the Mines and Quarries (Tips) Act 1969 indicate where reform is needed. Suggestions made by stakeholders and the actions already taken since the Tylorstown slide indicate desirable features of a new regime. Existing models drawn from the regulation of other environmental hazards also provide examples of possible alternatives. In this chapter we consider where elements of these models might assist to redress the problems with the 1969 Act and address the challenges brought by climate change. We also consider where the characteristics of a particular hazard may make it unhelpful to draw an analogy with disused tips.

9.2 It is useful first to characterise the types of regime which may be applied. Burnett-Hall defines these historically as evolving away from a medium-specific public health approach towards more holistic frameworks:

The early approach to pollution control can be characterised as being concerned with specific human problems, usually involving public health, and directed at emissions into a particular medium, such as air or water. This may reflect the fact that there was then no clear concept of “the Environment” as an entire, holistic entity. This medium-specific and rather *ad hoc* method was to continue for over 100 years.<sup>473</sup>

9.3 Attempts to develop a more integrated approach include the Environmental Protection Act 1990. It introduced parts of the conceptual framework which underpins the modern integrated approach to pollution, such as BATNEEC (Best Available Technology Not Entailing Excessive Cost), which is the principle applied in order to reach the BPEO (Best Practicable Environmental Option). The BPEO was defined by the Royal Commission on Environmental Pollution as “the option that provides the most benefit or least damage to the environment as a whole, at an acceptable cost, in the long term as well as in the short term”.<sup>474</sup> This framework allowed “a more holistic approach to be taken to the environment as a whole, and was a step away from the medium-specific concerns of previous attempts at regulation”.<sup>475</sup>

9.4 The 1969 Act is an example of a focus on specific and immediate problems relating to human health and safety. Permitted action is confined to situations where there is a perceived risk to the public by reason of instability of a tip. Environmental permitting

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<sup>473</sup> R Burnett-Hall and B Jones (eds), *Burnett-Hall on Environmental Law* (3rd ed 2012) para 23-007.

<sup>474</sup> Royal Commission on Environmental Pollution, Twelfth Report (1988) Cm 310 paras 1.7 and 2.1. For a discussion of the BPEO concept, see the Sixth Report of the Select Committee for Environment, Transport and Regional Affairs (1990-91) HC 18 para 34, <https://publications.parliament.uk/pa/cm199798/cmselect/cmenvtra/484/48407.htm> (last visited 17 March 2021).

<sup>475</sup> R Burnett-Hall and B Jones (eds), *Burnett-Hall on Environmental Law* (3rd ed 2012) paras 23-010 and 23-011.

legislation takes a different approach, imposing limitations on specific activities by reference to a broader range of risks to air, water and soil. But it too is constrained in its approach. The legislation does not incorporate a mechanism to assess overall environmental impact where there are competing priorities, as we have seen in the case of coal tip emergencies.

- 9.5 In identifying an alternative model, we think it preferable to look for a model which takes a more integrated and flexible approach so as to permit less circumscribed intervention, together with a mechanism to deal with competing priorities.

## THE RESERVOIRS ACT 1975

- 9.6 A number of stakeholders have suggested to us that the Reservoirs Act 1975 could provide a useful alternative model to regulate coal tip safety. As in the case of coal tips, regulation of reservoirs followed disasters causing terrible destruction and loss of life.<sup>476</sup> The Act, as amended by the Flood and Water Management Act 2010, makes provision against escapes of water from large reservoirs or from lakes or lochs artificially created or enlarged. It covers the construction, supervision, maintenance, inspection and ultimately the decommissioning of reservoirs.<sup>477</sup>
- 9.7 In summary, in Wales the Act regulates large raised reservoirs that are capable of holding 10,000 cubic metres or more of water.<sup>478</sup> The operators of these reservoirs, known as “undertakers”, are required to register them with Natural Resources Wales (NRW) which operates as the enforcement authority in Wales for the purposes of the Act.<sup>479</sup> There are provisions to ensure that reservoirs are properly designed, constructed and ultimately decommissioned by qualified civil engineers. Reservoirs with a capacity less than 10,000 cubic metres are not subject to the Act.
- 9.8 NRW has a duty to designate a reservoir as a high-risk reservoir where it considers that, in the event of an uncontrolled release of water, human life could be endangered. Reservoirs designated as high risk are subject to an enhanced regime of inspection and supervision by qualified civil engineers. High-risk reservoirs must be under the supervision of a supervising engineer at all times. An inspecting engineer from the appropriate panel of engineers must inspect the reservoir at intervals not exceeding 10 years and at other specified occasions provided by Regulations. Reservoirs not

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<sup>476</sup> Disasters which preceded the regulation of reservoirs included those at Dolgarrog, Wales in 1925 (16 people killed), Malpasset, France in 1959 (423 killed), Baldwin Hills, US in 1963 (5 killed), and Vajont, Italy in 1963 (2,000 killed). The first legislation to control the design, construction and maintenance of dams and reservoirs was the Reservoirs (Safety Provisions) Act 1930. This placed a duty on undertakers to appoint engineers, but did not create a regulatory authority.

<sup>477</sup> The amendments made by sch 4 to the Flood and Water Management Act 2010 came into effect in Wales on 1 April 2016: Flood and Water Management Act 2010 (Commencement No. 1 and Transitional Provisions) (Wales) Order SI 2016 No 79 (W36)).

<sup>478</sup> Reservoirs Act 1975 s A1(3) as amended by Flood and Water Management Act 2010, sch 4. Before 2016, the threshold for regulation was 25,000 cubic metres.

<sup>479</sup> The regulatory authority was originally the local authority (as currently for disused coal tips). In England the authority has become the Environment Agency. In Wales it became Natural Resources Wales in 2013.

considered to be high risk remain registered but are not subject to the same degree of inspection and supervision.<sup>480</sup>

- 9.9 Undertakers are defined as those who have authority to manage and control the reservoir. In Wales, section 1(4) of the Act defines the undertaker as: NRW if the reservoir is managed and operated by NRW or a statutory water undertaker; or, in any other case, as either the person carrying on an undertaking where the reservoir is used or intended to be used for the purposes of the undertaking, or the owner or lessee of the reservoir where there is no use of it or intention to use it for the purposes of an undertaking. In other words, if there is no operator, the owner or lessee is the undertaker.
- 9.10 Undertakers are responsible for the day-to-day monitoring and maintenance of the reservoir and compliance with the law. This includes, if the reservoir is designated as high risk, compliance with the requirements of inspection and supervision of the reservoir by engineers, and of recording water levels and other specified information. The role of NRW is to ensure that undertakers observe and comply with the law. Where works of any type are not undertaken as required or completed to the satisfaction of the reservoir engineer, NRW has reserve powers to require the undertakers to implement the inspecting engineer's recommendations. NRW maintains a public register of reservoir information and monitors the actions required of undertakers, with powers to act in default of an undertaker or in an emergency. NRW reports to the Welsh Ministers every two years on the steps taken in fulfilling its role.

### Detail of the regulatory framework

- 9.11 Section A1 of the Act defines a "large raised reservoir" as "a large, raised structure designed or used for collecting and storing water", or "a large, raised lake or other area capable of storing water which was created or enlarged by artificial means". It is "raised" if designed to hold, or capable of holding, water above the natural level of any part of the surrounding land.<sup>481</sup> It is "large" if it is capable of holding 10,000 cubic metres of water above the level of the surrounding land.
- 9.12 NRW has a duty to establish and maintain a register showing the large raised reservoirs situated wholly or partly in Wales. The register is to be available for public inspection and must contain the information prescribed by regulations.<sup>482</sup> The undertaker must register a large raised reservoir with NRW.<sup>483</sup> It must also notify NRW about matters such as the proposed abandonment of the reservoir and changes to the

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<sup>480</sup> For a detailed account of reservoir legislation as it applies in Wales, see British Dam Society, *Reservoir Legislation in Wales* (2016), <https://britishdams.org/assets/documents/Dam%20Legislation%20-%20Wales%20-%20October%202016.pdf> (last visited 17 March 2021).

<sup>481</sup> Reservoirs Act 1975, s A1(1)(a).

<sup>482</sup> Reservoirs Act 1975, s 2(2).

<sup>483</sup> Reservoirs Act 1975, s 2(2B).

information provided on registration.<sup>484</sup> It is for NRW to ensure that undertakers observe and comply with the requirements of the Act.<sup>485</sup>

- 9.13 As soon as possible after registration of a large raised reservoir, NRW must consider whether it is to be designated as a high-risk reservoir.<sup>486</sup> If a designation is to be made, NRW must notify the undertaker of the provisional designation, and provide an opportunity to make representations before making a decision as to whether to confirm the designation.<sup>487</sup>
- 9.14 High-risk reservoirs are defined in section 2C. Under section 2C(1), NRW may designate a large raised reservoir as a high-risk reservoir if—
- (a) ... [it] thinks that, in the event of an uncontrolled release of water from the reservoir, human life could be endangered, and
  - (b) the reservoir does not satisfy the conditions (if any) specified in regulations made by the Minister.
- 9.15 The conditions specified under subsection (1)(b) may include conditions as to the purpose for which the reservoir is used, the materials used to construct the reservoir, the way in which the reservoir is constructed, and the maintenance of the reservoir. The designation or decision not to designate must be reviewed if there is reason to think that it is no longer appropriate.<sup>488</sup> There is a right of appeal against designation.<sup>489</sup>
- 9.16 Sections 10 to 12, considered below, set the requirements for inspection, monitoring and supervision of high-risk reservoirs.
- 9.17 NRW must also report to the Welsh Ministers on the steps taken to secure compliance with the Act, and its own efforts to observe and comply with the Act where NRW is itself the undertaker. The Ministers may require an inquiry to be held if it appears that the authority has failed to perform its functions under the Act.<sup>490</sup>
- 9.18 The Act provides for a panel or panels of civil engineers to be appointed. Where the Act stipulates that a qualified civil engineer is required, that engineer must be a

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<sup>484</sup> The Reservoirs Act 1975 (Capacity, Registration, Prescribed Forms, etc.) (Wales) Regulations SI 2016 No 80 (W 37).

<sup>485</sup> Reservoirs Act 1975, s 2(3).

<sup>486</sup> Reservoirs Act 1975, s 2A.

<sup>487</sup> Reservoirs Act 1975, s 2B.

<sup>488</sup> Reservoirs Act 1975, s 2D.

<sup>489</sup> Reservoirs Act 1975, s 2E provides that regulations must provide a right of appeal against designations under section 2B. The regulations must confer jurisdiction on the Minister, a court or a tribunal, and make provision about procedure. The Reservoirs Act 1975 (Exemptions, Appeals and Inspections) (Wales) Regulations SI 2016 No 78 (W 35) provide for appeals against designation to go to the Welsh Ministers, who are required to “remit the appeal to an appointed person for consideration and determination” (reg 6(2)).

<sup>490</sup> Reservoirs Act 1975, s 3. For the most recent report see Natural Resources Wales, *Biennial Report to the Minister for Environment, Energy and Rural Affairs: Reservoir Safety in Wales 2017 to 2019*, <https://cdn.cyfoethnaturiol.cymru/media/690462/2017-19-biennial-report.pdf?mode=pad&rnd=132174406320000000> (last visited 17 March 2021).

member of the panel.<sup>491</sup> Joint panels of reservoir engineers are appointed by the Secretary of State for the Environment, Food and Rural Affairs and by the Welsh Ministers following recommendations by the Reservoirs Committee of the Institution of Civil Engineers.<sup>492</sup> Four panels of engineers have been established to allow for the selection of an appropriately qualified engineer to meet the different requirements of the Act: the first level of qualification is for supervising engineers; the second covers the construction, inspection and decommissioning of service reservoirs; the third is for the design, construction, inspection and decommissioning of non-impounding reservoirs; and the fourth, the All Reservoirs Panel, is permitted to act in any capacity.<sup>493</sup>

- 9.19 Large raised reservoirs may not be constructed or altered unless the work is designed and supervised by a qualified civil engineer, known as the construction engineer. The Act establishes a system for certification of the works and the drawings and descriptions which must accompany the certificate. If it appears to NRW that the undertaker has not complied with these requirements, it may serve a notice to complete the appointment of the engineer and comply with the requirements of the engineer's report.<sup>494</sup> There is also provision for compliance with these requirements if an abandoned large raised reservoir is brought back into use.<sup>495</sup>
- 9.20 Undertakers are under a duty to subject high-risk reservoirs to periodical inspection by an independent qualified civil engineer, known as the inspecting engineer, at intervals specified by regulations and with a requirement to report to NRW.<sup>496</sup> The undertakers are required to provide a certificate to confirm their compliance with any recommendations in the report. NRW has powers in the event of non-compliance.<sup>497</sup> Undertakers of high-risk reservoirs are also required to keep specific records, for example as to water levels.<sup>498</sup>

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<sup>491</sup> Reservoirs Act 1975, s 4(10) and (11).

<sup>492</sup> See <https://www.ice.org.uk/careers-and-training/careers-advice-for-civil-engineers/specialist-professional-registers#reservoirs> (last visited 30 March 2021).

<sup>493</sup> See British Dam Society, *Reservoir Legislation in Wales* (2016), <https://britishdams.org/assets/documents/Dam%20Legislation%20-%20Wales%20-%20October%202016.pdf> (last visited 17 March 2021), for a summary of the panel functions. A service reservoir is a closed structure, generally used for drinking water. A non-impounding reservoir is usually formed by the construction of embankments on all sides and is filled and emptied by pumping only. An impounding reservoir is usually formed by placing a dam across a natural watercourse and controlling the outflow.

<sup>494</sup> Reservoirs Act 1975, s 8.

<sup>495</sup> Reservoirs Act 1975, s 9.

<sup>496</sup> Under the Reservoirs Act 1975 (Exemptions, Appeals and Inspections) (Wales) Regulations SI 2016 No 78 (W 35), high-risk reservoirs must be inspected by an inspecting engineer, at intervals not exceeding ten years, to provide a condition assessment. The inspecting engineer provides a report to the undertakers and a copy to Natural Resources Wales. The report may include the inspecting engineer's recommendations as to measures to be taken in the interests of safety and maintenance, which become statutory duties on the undertakers.

<sup>497</sup> Reservoirs Act 1975, s 10.

<sup>498</sup> Reservoirs Act 1975, s 11.

- 9.21 Undertakers are also required to employ a qualified civil engineer to supervise a high-risk reservoir at all times when the reservoir is not under the supervision of a construction engineer. This engineer is known as the supervising engineer. Supervising engineers are guided by recommendations that may be made by the inspecting engineer, and advise and direct the undertakers to perform various monitoring and maintenance operations appropriate to the reservoir. They watch out for areas of concern in the behaviour of the reservoir, and have a duty to report to NRW any matters which could affect its safety and to draw attention to any non-compliance with the requirements of the Act.<sup>499</sup> The engineer must also provide a written statement to the undertaker at least once every 12 months of the overall behaviour of the reservoir and of any action taken, or not taken, by the undertakers in relation to safety. The engineer may recommend an inspection by an inspecting engineer.<sup>500</sup> In addition, the engineer can require the undertaker to carry out visual inspections at specified intervals. There is again provision for NRW to enforce compliance. The effect of the system is that supervising engineers have continuing involvement with specific reservoirs.
- 9.22 High-risk reservoirs are each assigned a risk categorisation to determine the technical standard to which they must be constructed and maintained. The risk categorisation is based on the consequences rather than the likelihood of failure. The highest risk category, Category A, is assigned to those reservoirs where there is a risk to a downstream population of more than 10 people in the event of a reservoir failure. Category B applies where this risk relates to fewer than 10 people. Category C covers those reservoirs where failure risks environmental damage, with a low likelihood of loss of life. Category D is assigned where the risk of any harm is negligible. The standards are all very high: for example, a B category reservoir must be built to withstand a one in 10,000 year flood, whereas the design standard for a category D reservoir is a one in 150 year flood.<sup>501</sup>
- 9.23 Welsh Ministers can direct an undertaker to prepare a flood plan in relation to a large raised reservoir which must set out specified information about areas which may be flooded in the event of an uncontrolled escape of water. It must also set out the action to be taken in order to prevent, control or mitigate an uncontrolled escape of water. The plan must be certified by an appointed engineer and tested.<sup>502</sup> Flood maps are shared with local authority emergency planners to inform their emergency (off-site) plans.

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<sup>499</sup> Reservoirs Act 1975, s 12 and see the summary of the role of the supervising engineer in British Dam Society, *Reservoir Legislation in Wales* (2016), <https://britishdams.org/assets/documents/Dam%20Legislation%20-%20Wales%20-%20October%202016.pdf>. (last visited 17 March 2021).

<sup>500</sup> Reservoirs Act 1975, s 12(2A).

<sup>501</sup> For guidance on categorisation, see Institution of Civil Engineers, *Floods and Reservoir Safety* (4th ed 2015) ch 2. Information provided by Matthew O'Brien, Reservoirs Regulation Team, Natural Resources Wales. See further the discussion at para 9.37 below.

<sup>502</sup> Reservoirs Act 1975, ss 12A and 12AA.



- 9.24 There are also specific requirements, where a large raised reservoir is discontinued or abandoned, for supervision and certification by a qualified civil engineer.<sup>503</sup>
- 9.25 Reservoirs which are not designated as high-risk reservoirs are not formally monitored, but their designation can be reviewed at any time where NRW considers the designation may have ceased to be appropriate. All reservoir undertakers must report incidents that may affect the safety of their reservoir to NRW.<sup>504</sup>
- 9.26 If it appears to NRW that any large raised reservoir is unsafe and that action is needed to protect people or property against an escape of water, the Act provides a power to take, under the supervision of a qualified civil engineer, “such measures as they consider proper to remove or reduce the risk or to mitigate the effects of an escape”; this includes action where the risk arises from an abandoned reservoir.<sup>505</sup> There is provision for a notice to be served on the undertaker of the measures to be undertaken, but where it is not possible to serve the notice before the commencement of the works, it may be served as soon as practicable after work has begun. It may be dispensed with if it is not possible to ascertain the name or address of the undertakers.<sup>506</sup> The undertakers will be liable to pay the expenses reasonably incurred by the authority in the exercise of these powers.<sup>507</sup>
- 9.27 NRW has powers of entry onto land where a reservoir is situated to conduct an inspection, survey or other operation, including where the reservoir is abandoned.<sup>508</sup>
- 9.28 A power to make schemes to impose charges was introduced by an amendment to the Environment Act 1995. The provision acts as a means of recovering costs incurred by NRW in performing functions conferred by the Reservoirs Act 1975.<sup>509</sup> The current scheme came into effect in Wales in 2016. Two levels of fees are charged under the legislation. There is a fee for registration which all undertakers must pay; this covers the preliminary work to determine the designation of the reservoir. A second fee is payable annually if the reservoir is designated as high risk.<sup>510</sup> There is no ability to vary the fees to reflect the level of work undertaken by NRW. NRW is currently looking into how the charging scheme can enhance incentives to comply with the regime by

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<sup>503</sup> Reservoirs Act 1975, ss 13 and 14.

<sup>504</sup> Reservoirs Act 1975, s 21B and the Reservoirs Act 1975 (Capacity, Registration, Prescribed Forms, etc.) (Wales) Regulations SI 2016 No 80 (W 37).

<sup>505</sup> Reservoirs Act 1975, s 16 (1) and (2).

<sup>506</sup> Reservoirs Act 1975, s 16(4) and (5).

<sup>507</sup> Reservoirs Act 1975, s 16 (6).

<sup>508</sup> Reservoirs Act 1975, s 17.

<sup>509</sup> Environment Act 1995, s 41(1)(ba) as amended by the Flood and Water Management Act 2010, sch 4 para 39.

<sup>510</sup> The fee for initial registration of any large raised reservoir is currently £510. The annual fee following designation as a high-risk reservoir is £230: <https://naturalresources.wales/guidance-and-advice/environmental-topics/water-management-and-quality/reservoir-safety/reservoir-charges/?lang=en#:~:text=31%20March%202021.-,Registration%20fees,made%20until%20payment%20is%20received> (last visited 13 May 2021).

rewarding good performance and recovering additional costs incurred due to poor performance. There will be a consultation on proposals for change later in 2021.<sup>511</sup>

### Comparisons between reservoirs and coal tips

- 9.29 The main distinction between coal tips and reservoirs is that today in Wales coal tips are almost entirely disused. They may be very old, and are not associated with income-generating activity. There are for this reason unlikely to be “operators” in the sense adopted in the 1975 Act. Owners are unlikely to have an active use for the tips on their land, and are also unlikely to have any link with the activity that created the tip.
- 9.30 In contrast, reservoirs in Wales are mostly still in use, although the regime continues to apply to a disused reservoir which continues to fall within the definition of a large raised reservoir. Of the 366 large raised reservoirs registered in Wales, 40% of undertakers are water companies, and the reservoirs are used for drinking water; 19% of reservoirs are commercial, and typically used for hydroelectric power or industry; 24% are operated by public bodies such as NRW and local authorities or heritage and conservation charities and categorised as used for the public good; and 17% are privately owned and mainly used for their amenity and recreational opportunities.<sup>512</sup> Two of the reservoirs categorised as in private ownership are “orphan” reservoirs;<sup>513</sup> it is possible that there are others which have not yet been identified. The average age of a dam is over 100 years.<sup>514</sup> A reservoir may cease to be a reservoir when the water is drained from it.
- 9.31 However, the change in the threshold for regulatory control introduced in 2016 encompassed many more smaller-scale reservoirs.<sup>515</sup> The owners of these smaller reservoirs share more similarities with some disused tip owners. The reservoir may be small, acting for example as an ornamental pond or used for fishing, and the owner may have relatively few resources. Such a structure may well not be an income-producing asset and there may be less incentive to invest money in its upkeep.<sup>516</sup>
- 9.32 It is interesting that at the time of the Aberfan Tribunal potential parallels between reservoir and coal tip safety were noted. It was suggested to the Tribunal that a panel of engineers should be established so as to ensure that only suitably qualified engineers were employed on coal tip site investigations, following the model of the

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<sup>511</sup> Meeting with Matthew O'Brien, Reservoirs Regulation Team, Natural Resources Wales.

<sup>512</sup> Natural Resources Wales, *Biennial Report to the Minister for Environment, Energy and Rural Affairs, Reservoir Safety in Wales 2017-2019*, p 5, <https://cdn.cyfoethnaturiol.cymru/media/690462/2017-19-biennial-report.pdf?mode=pad&rnd=132174406320000000> (last visited 17 March 2021).

<sup>513</sup> This situation arises either where the reservoir is *bona vacantia*, and the land is under the authority of the Crown Estate Commissioners, or where it has not been possible to identify the owner. In this case, Natural Resources Wales has authority only to inspect or act in an emergency. If it were regularly to undertake maintenance work, the authority could inadvertently become the undertaker under the terms of the 1975 Act.

<sup>514</sup> Natural Resources Wales, *Biennial Report to the Minister for Environment, Energy and Rural Affairs, Reservoir Safety in Wales 2017-2019*, p 9, <https://cdn.cyfoethnaturiol.cymru/media/690462/2017-19-biennial-report.pdf?mode=pad&rnd=132174406320000000> (last visited 17 March 2021). A dam is the physical structure that retains water; a reservoir is the water body that is created by a dam.

<sup>515</sup> See para 9.7 above.

<sup>516</sup> Meeting with Matthew O'Brien, Reservoir Regulation Team, Natural Resources Wales.

Reservoirs (Safety Provisions) Act 1930. Ultimately, this was not recommended, as it was thought that the National Tip Safety Committee would perform this function, but the need for expertise in relation to tips in the ownership of those unconnected with the coal industry was recognised.<sup>517</sup>

### Evaluation of the reservoirs regime

- 9.33 NRW takes an active role in monitoring compliance. While the undertaker is ultimately responsible, and the engineer provides the technical expertise, NRW, as the enforcement agency, ensures that the work is done. This involves notifying undertakers of approaching deadlines for specific actions, ensuring the actions are completed by the date set, and providing advisory support.
- 9.34 There are a range of measures available to NRW to enforce compliance where undertakers fail to carry out the works required. Some types of non-compliance are enforceable by notice and some are punishable as an offence. In practice, there is very little need for the service of notices as the active involvement of NRW in regulation promotes compliance.<sup>518</sup> There is however a further category of operational recommendations which relate to lower level tasks. These are not directly enforceable. NRW assists undertakers on an advisory basis in relation to these tasks.<sup>519</sup>
- 9.35 In practice, the absence of a power to compel compliance with this lower level maintenance can cause difficulties where undertakers have limited resources and limited technical knowledge. It has become more of a problem since the regulatory threshold was reduced to encompass smaller reservoirs in 2016, as this brought in many more non-commercial owners with fewer resources and less of a vested interest in the reservoir as an asset. These tasks have similarities with the low-level maintenance work on coal tips which local authorities cannot compel owners to carry out under the 1969 Act regime for disused tips.
- 9.36 The duty of reservoir undertakers to register with NRW can also be problematic. In the 1980s, when the 1975 Act first came into effect, the Wales Office undertook an exercise with local authorities and the Welsh water authorities to identify all reservoirs in their area. This identified almost all the reservoirs, although NRW tells us that, when it took over as the enforcement authority, it identified over 20 more reservoirs which should have been on the register. It is still possible that others will be found.<sup>520</sup> The amendments to the 1975 Act made by the Flood and Water Management Act 2010 introduced an offence of failing to register.<sup>521</sup> But, while the authority is under a duty to maintain the register, there is no clear power to register a reservoir by default. A

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<sup>517</sup> Report of the Tribunal appointed to inquire into the Disaster at Aberfan on October 21<sup>st</sup>, 1966, para 288, <http://www.mineaccidents.com.au/uploads/aberfan-report-original.pdf> (last visited 4 March 2021).

<sup>518</sup> Meeting with Matthew O'Brien, Reservoir Regulation Team, Natural Resources Wales.

<sup>519</sup> Meeting with Matthew O'Brien, Reservoir Regulation Team, Natural Resources Wales.

<sup>520</sup> Meeting with Matthew O'Brien, Reservoir Regulation Team, Natural Resources Wales.

<sup>521</sup> Reservoirs Act 1975 s 22(A1).

power to do so would assist where, for example, ownership is unclear, or where the owners have for some reason been unable to act.<sup>522</sup>

- 9.37 The designation of risk categories for high-risk reservoirs in accordance with consequences rather than likelihood of failure is an important feature of the reservoirs regime. This permits stricter standards of maintenance where the consequences could include loss of life. It is interesting to compare the 1975 Act in this respect with the Reservoirs (Scotland) Act 2011. The 2011 Act makes it mandatory to consider both adverse consequences of failure and the probability of release, and lists potential adverse consequences to be taken into account as including not only risks to human health but also, for example, to the environment, cultural heritage and infrastructure such as power supplies.<sup>523</sup> It also adopts a three-tier rather than a two-tier approach to designation, providing for high, medium and low-risk reservoir designation.<sup>524</sup>
- 9.38 The Reservoirs Act model conforms well with the principles of dam safety recognised by the International Commission on Large Dams (ICOLD). The “two pairs of eyes” approach, involving both a supervising and an inspecting engineer, provides a robust internal control mechanism. The panel system adds an assurance of technical expertise.<sup>525</sup>
- 9.39 There are elements which do not work so well. The reservoir safety regime has recently been the subject of an independent review, commissioned by the Department of Environment, Food and Rural Affairs. The report of this independent review was published in May 2021.<sup>526</sup> It emphasises the need for better coordination between owners, engineers, the regulator and government. Recommendations include dividing high-risk reservoirs into different classes of hazard to ensure greater effort and resources are directed at those at the higher end of the hazard range, and a more interventionist approach by supervising and inspecting engineers.
- 9.40 The elements in the reservoirs regime which appear to us to deserve consideration in building a new regulatory framework for coal tips are: the requirement to maintain a register; the ability to designate a reservoir as high risk in accordance with the level of

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<sup>522</sup> Meeting with Matthew O’Brien, Reservoir Regulation Team, Natural Resources Wales. In practice, he has explained, there may be cases where owners are, for example, elderly or infirm and unable to comply with their duty to register.

<sup>523</sup> Reservoirs (Scotland) Act 2011, s 22.

<sup>524</sup> Reservoirs (Scotland) Act 2011, s 18.

<sup>525</sup> See the ICOLD Principles of Dam Safety set out in the World Declaration on Dam Safety, [https://www.icold-cigb.org/userfiles/files/World%20declaration/World%20Declaration%20on%20Dam%20Safety\\_ICOLD\\_A3.pdf](https://www.icold-cigb.org/userfiles/files/World%20declaration/World%20Declaration%20on%20Dam%20Safety_ICOLD_A3.pdf) (last visited 17 March 2021). These include the need for routine surveillance and maintenance to ensure early detection of safety concerns, supported by mandatory periodic inspection by an independent and competent authority.

<sup>526</sup> The independent review was set up by the UK Government in 2019 following the Toddbrook reservoir incident at Whaley Bridge, Derbyshire, when storm damage to a spillway (overflow channel) raised fears of a dam collapse and triggered the evacuation of the surrounding area. The first stage of the inquiry reported on the Toddbrook incident. The second stage of the inquiry, known as Part B, headed by Professor David Balmforth, undertook a wider assessment of reservoir safety legislation and its implementation. It contrasted the legislation with other safety regimes, such as those applied in the nuclear industry and to rail infrastructure. See D Balmforth, *Independent Reservoir Safety Review Report* (2021), <https://www.gov.uk/government/publications/reservoir-review-part-b-2020> (last visited 17 May 2021).

hazard it poses and to create a distinct set of inspection and supervision duties where this designation is applied; the creation of a panel of specialist engineers to ensure that the work is done; and the enforcement of compliance by one central body. The approach to risk categorisation which considers the consequences rather than the likelihood of failure is also a useful model to determine the extent of intervention required. We also think that the requirement in Scotland to consider other consequences such as harm to the environment could be an important addition to a safety regime.

- 9.41 We do not think that it would be viable to adopt a model for registration which places the duty solely on tip owners to register their tips. The central database of tips envisaged by the Welsh Government will serve to identify the existence of all known tips. We foresee the need for a power to add a coal tip to the list, although this would not prevent the addition of a tip to the list from imposing other obligations on the owner.
- 9.42 The reservoirs regime is facing the same challenge as the current disused tips regime in ensuring a proactive approach to lower level maintenance tasks, particularly when the reservoir is not treated as an asset and the owner has little technical expertise and few resources.
- 9.43 A regulatory approach which distinguishes hazards by reference to the degree of risk appears to us to be particularly helpful in dealing with disused tips, as these span a wide range of types, from those that are barely discernible to those at risk of an imminent slide. NRW has described its approach to reservoir safety work in terms of a balance between the scale of intervention and the consequences of reservoir failure:

We guide our regulatory work by balancing the need for qualified oversight and intervention with the consequences of reservoir failure. Engineers assign a dam risk category to indicate the scale of population at risk. This scale also informs our overall risk designation.<sup>527</sup>

## THE QUARRIES REGULATIONS 1999 AND MINES REGULATIONS 2014

- 9.44 In chapter 4 we gave an account of the debates leading to the enactment of the Mines and Quarries (Tips Act) 1969 in the wake of the Aberfan disaster. We described the control regime in Part 1 of that Act and the Mines and Quarries (Tips) Regulations 1971 made under it (all no longer in force) for tips associated with active mines as well as the regime for tips associated with disused mines in Part 2 of the Act, which is still in force. We also looked briefly at the successor regime for tips associated with active mines and the parallel regime for quarries that are now in force under the Health and Safety at Work Act 1974. These provisions serve as a possible model for the regulation of disused tips.

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<sup>527</sup> Natural Resources Wales, *Biennial Report to the Minister for Environment, Energy and Rural Affairs, Reservoir Safety in Wales, 2017-2019*, p 6, <https://cdn.cyfoethnaturiol.cymru/media/690462/2017-19-biennial-report.pdf?mode=pad&rnd=132174406320000000> (last visited 17 March 2021).

## Mines Regulations 2014

- 9.45 The Mines Regulations 2014,<sup>528</sup> made under the Health and Safety at Work Act 1974, apply to tips associated with operational mines.<sup>529</sup> The Regulations brought mining legislation into line with most other health and safety provisions, in that the more prescriptive approach adopted by the 1971 Regulations was replaced by goal-setting provisions.<sup>530</sup> Like Part 1 of the 1969 Act and the 1971 Regulations, the 2014 Regulations are focussed upon instability of tips rather than other hazards associated with them.
- 9.46 As we explained in paragraph 4.67 above, for tips that fall within the Regulations, Part 8 imposes a general duty to ensure the safety of tips.<sup>531</sup> A mine operator must ensure that a suitable appraisal of all existing or proposed tips is undertaken to establish whether the tip is or would be a “significant hazard”.<sup>532</sup> If the tip is not a significant hazard, further appraisals must be carried out at “appropriate intervals”, or whenever there is reason to suspect there has been or will be a change in circumstances affecting the stability of the tip.<sup>533</sup>
- 9.47 If a tip is deemed a “significant hazard”, thus becoming a “notifiable” tip, specific duties arise. These include a duty to have a geotechnical assessment by a “geotechnical specialist” repeated every two years. The assessment must include the specialist’s view on safety and stability, including whether it represents a significant hazard by way of instability or movement, whether remedial work is required, the time frame within which this should be completed, and the date by which the next assessment must take place.<sup>534</sup> There is a further duty on the mine operator to conduct a further geotechnical assessment if there is reason to suspect that there has or will be a significant change to relevant considerations or reason to doubt the conclusion of the current assessment.<sup>535</sup>

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<sup>528</sup> SI 2014 No 3248.

<sup>529</sup> The 2014 Regulations repealed ss 1 to 7 of the 1969 Act. The Coal Authority continues to have regard to the Regulations as a guide to best practice: Coal Authority, *Disused colliery tips owned and inspected by the Coal Authority* (24 January 2020), <https://www.gov.uk/government/publications/disused-colliery-tips-owned-and-inspected-by-the-coal-authority> (last visited 17 March 2021).

<sup>530</sup> JR Leeming, HM Chief Inspector of Mines, *The Aberfan Disaster and its Legacy*, paper presented at the Aberfan Disaster 50th Anniversary Commemorative Conference in Cardiff on 21 October 2016.

<sup>531</sup> Defined in reg 60 as “a duty to ensure that (a) instability or (b) movement which is likely to give rise to a risk to the health and safety of any person is avoided”.

<sup>532</sup> Defined in reg 63 as “a significant hazard by way of instability or movement”.

<sup>533</sup> Mines Regulations 2014, reg 61.

<sup>534</sup> Mines Regulations 2014, reg 62. For the purposes of Part 8, reg 62 stipulates that a “geotechnical assessment” means an assessment carried out by a geotechnical specialist identifying and assessing all factors liable to affect the stability and safety of a proposed or existing tip; and a “geotechnical specialist” means a person who is suitably qualified and competent to perform a geotechnical analysis to determine the hazard and risk arising from the tip being assessed.

<sup>535</sup> Mines Regulations 2014, reg 63.

## Quarries Regulations 1999

9.48 The Quarries Regulations 1999<sup>536</sup> also provide for an initial appraisal of a quarry tip to determine whether it is a “significant hazard”. If it is not found to be a significant hazard, the operator has a duty to ensure that a further appraisal is carried out at appropriate intervals and where there is any reason to suspect significant change. If it is found to be a significant hazard, a geotechnical assessment must be carried out.<sup>537</sup> The geotechnical assessment must be repeated at least every two years, or more frequently if there is cause for concern.<sup>538</sup> The initial appraisal must be carried out by a “competent person”. The geotechnical assessment is to be carried out by a “geotechnical specialist”.<sup>539</sup>

## Appraisal

9.49 As well as regulating the safety of tips associated with operational mines and quarries, the Regulations provide a possible model for the regulation of disused tips. In pre-consultation meetings with the Chief Inspector for Mines and the Principal Inspector for Quarries both expressed the firm view that the regulatory framework for these tips works well.<sup>540</sup>

9.50 The Regulations provide for an overarching proactive duty of the tip operator to ensure safety, a mechanism to appraise each tip, and an enhanced regime of inspection, maintenance and notification if the tip is designated as a “significant hazard”. A mine or quarry operator must undertake a suitable appraisal of all existing or proposed tips to establish whether the tip is or would be a “significant hazard”.<sup>541</sup>

9.51 Elements of the regime to designate tips could be extended to higher risk disused tips. Under Part 2 of the 1969 Act, a local authority has power to act only if a possible problem is apparent, but there is no blanket inspection regime to identify possible issues. A duty to appraise each tip in order to designate the appropriate safety regime seems an obvious first step, as a precursor to classifying the tip in order to decide the frequency of inspection. This could be developed beyond the binary system used in the Mines Regulations and Quarries Regulations to distinguish a tip which is a

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<sup>536</sup> SI 1999 No 2024.

<sup>537</sup> Quarries Regulations 1999, reg 32. Tips which are found to represent a significant hazard become known under the Regulations as “notifiable tips”. The Regulations were explained in paras 4.73 to 4.75 above.

<sup>538</sup> Quarries Regulations 1999, regs 33 and 34.

<sup>539</sup> These terms are defined in reg 2. “Competent person” means “a person with sufficient training, experience, knowledge and other qualities to enable him properly to undertake the duties assigned to him”. A “geotechnical specialist” means a chartered engineer or chartered geologist who (a) has three or more years relevant experience in soil mechanics, rock mechanics or excavation engineering, and (b) is competent to perform a geotechnical analysis to determine the hazard and risk arising from the excavation or tip being assessed.

<sup>540</sup> Meetings with Bob Leeming, HM Chief Inspector of Mines, and Colin Mew, HM Principal Inspector of Quarries, Health and Safety Executive.

<sup>541</sup> See paras 9.46 to 9.48 above.



significant hazard. One factor which could be accentuated in the categorisation is the presence of higher risk receptors.<sup>542</sup>

- 9.52 The principal distinguishing feature between disused tips and those which fall under the Quarries or Mines Regulations is the ownership of the tip. Responsibility under those Regulations falls to the operator, and is overseen by the Health and Safety Executive Inspectorates. There is no equivalent of the operator for disused tips. The 1969 Act clearly intended responsibility to fall on the tip owner, in an age when a tip associated with an operational mine or quarry was the norm.<sup>543</sup> The owner of a disused tip is very unlikely to be generating any income from the tip, or to have any other incentive to maintain it. In some cases, as we discussed in chapter 7, the owner may not have the resources to maintain it. In almost all cases the owner has no association with its original use and is not responsible for the presence of the tip on the land.
- 9.53 Another aspect of the Regulations which may be too limited that, like Part 1 of the 1969 Act and the Mines and Quarries (Tips) Regulations 1971, safety is considered from the perspective of the stability of tips rather than other hazards associated with them. The definition of “significant hazard” is similarly constrained.

#### **COMPARISON BETWEEN RESERVOIRS ACT AND THE QUARRIES REGULATIONS 1999/MINES REGULATIONS 2014**

- 9.54 The regulatory approaches adopted by both the reservoirs regime and the regimes for tips associated with operational mines and quarries place proactive duties on the owner/operator in relation to inspection and maintenance, and there is one central regulatory authority to monitor compliance. Both regimes draw a distinction between higher risk and lower risk structures, with an enhanced safety regime for those classified as higher risk.
- 9.55 There are important distinctions between the two approaches. In general, the reservoir regime creates a much more prescriptive set of duties than tips associated with operational mines and quarries. The regime for operational tips takes a goal-setting approach, establishing the objective of preventing instability, and then providing guidance which sets out suggestions as to how to achieve this. This is perhaps a more appropriate approach where operators are familiar with their industry and the best ways to achieve a health and safety goals. It may be better to adopt a more prescriptive approach when dealing with owners who have little knowledge of tip safety. Further, the reservoirs regime adopts a system which relies on appointment of specialists to a panel of engineers to ensure competence. There is no equivalent panel for those employed to monitor the safety of tips associated with operational mines and quarries.<sup>544</sup>

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<sup>542</sup> Meeting with Colin Mew, HM Principal Inspector of Quarries. A receptor is a feature that could be impacted by a coal tip slide (such as a house, school or road). See para 8.8 above.

<sup>543</sup> See the discussion at paras 4.25 and 4.26 above.

<sup>544</sup> Meeting with Colin Mew, HM Principal Inspector of Quarries, Health and Safety Executive. See paras 4.63, 4.64 and 4.75 above for the provisions in the Mines Regulations 2014 and Quarries Regulations 1999 relating to competence.



- 9.56 In terms of the rigour of the standards applied by the two regimes, there has been debate in the past as to whether a mine tailings lagoon would be better regulated under the Reservoirs Act rather than the coal tip regime.<sup>545</sup> A tailings lagoon contains mine tailings in solution or suspension, and requires a wall or structure to contain it. There were calls by engineering experts following the Stava tailings dam disaster in Italy in 1985, which killed 269 people, for the Reservoirs Act to be amended to include tailings dams within the definition of a large raised reservoir. It was argued that the Reservoirs Act offered superior standards of design and construction.
- 9.57 The view that the Reservoirs Act would offer superior protection was countered in an article by an experienced civil engineer with substantial experience of the inspection of reservoirs and tailings dams under both the Reservoirs and Mines and Quarries (Tips) Acts.<sup>546</sup> The article was written before the amendment of the Reservoirs Act in 2010 and introduction of the Mines Regulations 2014. The discussion is of relevance only to the regime for tailings dams associated with operational mines. It does not apply to disused tips which are constituted of tailings.
- 9.58 In evaluating the standards for coal tips, the author points to the duties placed on the owner and manager of operational mines to prepare tipping rules and to keep up-to-date written records of all activities pertaining to the tip on the site and to ensure that they are regularly reviewed. He also compares the more rigorous provision under the 1971 Regulations for supervision and inspection of tips with 1975 Act duties. For example, the 1971 Regulations required weekly inspections of an active tip, while the supervising engineer of a reservoir only needs to inspect, at a minimum, annually.
- 9.59 In terms of flood risk, the author considers that the 1975 Act offers no advantage in requiring flood design standards to be adopted, as most tailings dams would be categorised as higher risk because of the risk to life and to the environment in the event of untoward release. Any tip with a capacity of more than 25,000 cubic metres would require special consideration for flood provision. Similar risk assessments would be required by the 1969 Act for tips with volumes above 10,000 cubic metres or where specific hazards have been identified.<sup>547</sup>
- 9.60 He concludes for these reasons that the legislation applicable to tailings dams is of a higher standard than reservoir protection, but notes that the effectiveness of each regulatory regime depends ultimately on the quality of inspections and audits and the degree of enforcement. This is echoed in a study of historic dam accidents compiled by the Environment Agency:

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<sup>545</sup> The Mines and Quarries (Tips) Act 1969, s 2(1) defined a tip in terms which include mine tailings lagoons. The Reservoirs Act 1975 originally expressly excluded them. This exemption is now reproduced in the supporting Regulations: the Reservoirs Act 1975 (Exemptions, Appeals and Inspections) (Wales) Regulations SI 2016 No 78 (W 35).

<sup>546</sup> M Cambridge, "The application of the Mines and Quarries (Tips) and the Reservoirs Act" (2008), paper submitted to the British Dam Society, <https://britishdams.org/2008conf/papers/2007%20Storms%20and%20Res%20Act/P43%20Cambridge%20Final.pdf> (last visited 17 March 2021).

<sup>547</sup> See para 5.4 above for consideration of safety requirements for Category A tips, and para 4.34 above for discussion of provisions for classified tips.

Frequent surveillance visits are essential and a big issue is how frequent the visits should be.<sup>548</sup>

- 9.61 This discussion indicates the strength of the provisions for tips associated with operational mines, but once again highlights the absence of adequate provision for disused tips, particularly those which can be classified as higher risk.

## THE FLOOD AND WATER MANAGEMENT ACT 2010

- 9.62 Other stakeholders have suggested analogies between the regulation of coal tips and local authority powers in relation to drainage systems in order to prevent flooding.
- 9.63 Part 1 of the Flood and Water Management Act 2010 gives Welsh Ministers a strategic overview of the management of flood and coastal erosion risk in Wales. It also gives local authorities in Wales responsibility for preparing and putting in place strategies for managing flood risk from groundwater, surface water and ordinary watercourses in their areas.
- 9.64 Local authorities and other bodies are given duties and powers that relate to these responsibilities. In some cases these are conferred directly by the 2010 Act. In others, they are by way of amendments to the Water Resources Act 1991, the Land Drainage Act 1991 and the Coast Protection Act 1949.
- 9.65 One of the duties placed on local authorities is to establish and maintain a register of structures or features which may significantly affect a flood risk in their area. They must also keep a record of information about such structures and features including ownership and state of repair. The register, with the exclusion of personal or confidential data, must be available for public inspection at all reasonable times.<sup>549</sup> The method by which public access to the register is provided is not specified in the legislation, so a local authority will have discretion as to whether the register should, for instance, be placed on its website or to provide access by some other means.<sup>550</sup>
- 9.66 The Part also provides additional legal powers for certain authorities in Wales to designate assets or features which affect flood or coastal erosion risk. It increases regulatory control of the assets or features which form flood and coastal erosion risk management systems, but which are not maintained or operated by those formally responsible for managing the risk.

### Designation of features

- 9.67 Section 21 creates the duty to maintain the register. Schedule 1 provides for designation of a structure or feature, which places a duty on the owner not to alter, remove or replace a designated structure or feature without the consent of the council

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<sup>548</sup> Environment Agency, *Delivering benefits through evidence: Lessons from historical dam incidents* (2011) p 27, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/290812/scho0811buba-e-e.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/290812/scho0811buba-e-e.pdf) (last visited 17 March 2021).

<sup>549</sup> Flood and Water Management Act 2010, s 21(2) and (4).

<sup>550</sup> Explanatory Notes to the Flood and Water Management Act 2010.

or responsible authority. The designation acts as a local land charge.<sup>551</sup> Designation involves serving a provisional and then a confirmatory designation notice.<sup>552</sup> It may be enforced by serving an enforcement notice, non-compliance with which amounts to a criminal offence. In an emergency, an authority may act to remedy any unauthorised alteration, removal or replacement of a structure in an emergency, without serving an enforcement notice, at the cost of the owner.<sup>553</sup> There are powers of entry to investigate whether designation is required, and to determine whether there has been a contravention of a designation or enforcement notice, with associated compensation provisions.<sup>554</sup>

- 9.68 The principal limitation of this power of designation (and why it is in practice not often used by councils) is that designation does not place a duty on the asset owner to maintain the structural integrity of the asset, to ensure performance, or to repair. Instead, councils have to rely on their powers under the Land Drainage Act 1991 to issue notices or to carry out necessary work and re-charge. Stakeholders told us that schedule 1 could be a very useful tool if these additional duties were added.<sup>555</sup>
- 9.69 We think that a designated features provision enhanced with powers to compel maintenance could provide a useful model for an authority charged with ensuring the safety of coal tips. Such a provision could ensure that the structural integrity of a tip is maintained. In order to provide the tip owner with the information needed to maintain the tip, there could be an additional requirement for the submission and approval of a maintenance plan and a duty on the owner to adhere to it. This duty of maintenance would ensure proactive rather than reactive tools to deal with safety issues, and offer greater assurance that a coal tip would never deteriorate to the point that it becomes a risk to the public.

### **Maintenance and management plans**

- 9.70 A possible model for maintenance and management plans is provided by the 2010 Act. Schedule 3, which is in force in Wales but not in England, introduces statutory standards for the design, construction, maintenance and operation of new rainwater drainage systems, and an “approving body”. The body, which in Wales is the local authority, is known as a Sustainable Drainage System Approving Body (SAB). The SAB is required to approve most types of rainwater drainage systems before any construction work with drainage implications can start. Where the system affects the drainage of more than one property, the approving body is required to adopt and maintain the system upon satisfactory completion.
- 9.71 The objective of this approach, known as the sustainable drainage systems approach, is to manage rainwater with the aim of reducing damage from flooding, improving water quality, protecting and improving the environment, protecting health and safety, and ensuring the stability and durability of drainage systems. In practice the idea is to

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<sup>551</sup> Flood and Water Management Act 2010, sch 1 para 5.

<sup>552</sup> Flood and Water Management Act 2010, sch 1 paras 7 and 8.

<sup>553</sup> Flood and Water Management Act 2010, sch 1 paras 11 and 12.

<sup>554</sup> Flood and Water Management Act 2010, sch 1, paras 13 and 14.

<sup>555</sup> Meeting with Tim Peppin and Jean-Francois Dulong, Welsh Local Government Association.

ensure that any new construction is consented by the local council in order to minimise the number of impermeable surfaces.<sup>556</sup>

- 9.72 Standard 6 sets a statutory sustainable drainage standard for construction, operation and maintenance to ensure ease of maintenance and structural integrity. The standard stipulates that the design should include a proposed maintenance plan which addresses long-term management of the system. Where a system will require sediment removal to ensure continued function, the plan should provide for the frequency and appropriate means of sediment removal and disposal. The standard recommends that blockage or clogging should be apparent by visual inspection from the surface.
- 9.73 The regulations and statutory guidance produced by the Welsh Government pursuant to schedule 3 impose a requirement on the developer undertaking the construction of a drainage system to develop and produce, in partnership with the SAB, a maintenance plan and a means of funding the scheme over the course of its design life. The guidance recommends that the plan should include matters such as the type of maintenance activities required to ensure that the drainage system operates as designed to manage flood risk, the frequency of these activities, their estimated cost and a site plan showing maintenance areas, access routes and locations where maintenance activities are anticipated.
- 9.74 The plan must clearly identify who is responsible for carrying out the maintenance work. The SAB is responsible for ensuring that the drainage system is maintained in accordance with Standard 6. The statutory guidance suggests that local authorities might rely on powers under local government legislation to transfer the Sustainable Drainage System into the maintenance and management of local authorities. This can be in return for payment of a commuted sum and/or payment of a maintenance charge reflective of the maintenance plan for the lifetime of the development.
- 9.75 The system ensures that local authorities can be satisfied as to how owners will maintain sustainable drainage systems in the long term. The maintenance plan also provides a stepping stone to enforcement if a council deems that an asset owner has not maintained the system in accordance with the approved maintenance plan.<sup>557</sup>
- 9.76 While most of the sustainable drainage provisions are not relevant to coal tips, the requirement to provide a maintenance and management plan could be a useful precedent, as could the powers of entry and enforcement (set out in the Sustainable Drainage (Enforcement) (Wales) Order 2018<sup>558</sup>).

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<sup>556</sup> Flood and Water Management Act 2010, sch 3 para 2 and R Burnett-Hall and B Jones (eds), *Burnett-Hall on Environmental Law* (3rd ed 2012) para 13–034. See also D Jenkins, *Report of a review of the arrangements for determining responsibility for surface water and drainage assets* (2020), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/911812/surface-water-drainage-review.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/911812/surface-water-drainage-review.pdf) (last visited 17 March 2021). The report considers the possible implementation of the sustainable drainage scheme in England and the need for mandatory duties to maintain.

<sup>557</sup> Meeting with Tim Peppin and Jean-Francois Dulong, Welsh Local Government Association.

<sup>558</sup> SI 2018 No 1182 (W 241).

9.77 Applying this to appropriate categories of coal tip would ensure that a mandatory management/maintenance plan was in place with a requirement placed on the owner to maintain a tip in accordance with an approved plan. Under the 2010 Act failure to maintain can lead to enforcement action, with a right of appeal. Where the right of appeal is exercised, the statutory plans can provide the evidence to uphold or overturn enforcement.<sup>559</sup>

## POWERS TO MAINTAIN EXISTING DRAINAGE SYSTEMS

9.78 There are other powers to maintain drainage systems. Drainage and culverting works may additionally be carried out as part of the local authorities' general drainage powers under section 14 of the Land Drainage Act 1991. The powers may be used to maintain or improve existing works, or to construct new works, as long as the work is within a section 18 scheme.<sup>560</sup> A section 18 scheme is registered as a land charge. The power of entry may be used for the purposes of this section only in order to maintain existing works.<sup>561</sup> One practical constraint on the exercise of the powers is that there are limitations on the costs that can be recovered under the scheme.<sup>562</sup>

9.79 Section 14A, as amended by the 2010 Act, gives general powers to local authorities to carry out flood risk management work. These powers may be exercised if certain conditions are satisfied, including that regard is had to the local flood risk management strategy, and either the purpose of the work is to manage flood risk from surface run-off or groundwater in the local authority's area, or the work relates to an ordinary watercourse. "Flood" includes any case where land not normally covered by water becomes covered by water.<sup>563</sup> Flood risk management work is defined to include the maintenance of existing works, including "cleansing, repairing or otherwise maintaining the efficiency of an existing watercourse or drainage work", as well as improving existing works or constructing or repairing new works.<sup>564</sup> The power of entry is similarly confined to entry for the purpose of maintaining existing works.<sup>565</sup> There is no specific power to recover the cost of the work from the landowner.

9.80 Stakeholders have told us that the net effect of the restrictions on these powers is that local authorities do not in practice intervene on private land to conduct work on drainage systems except in cases of outright blockage or failure. They are unable to

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<sup>559</sup> The Sustainable Drainage (Enforcement) (Wales) Order SI 2018 No 1182 (W 241) provides for appeals to be made to the Welsh Ministers. In practice, they will be handled by the Planning Inspectorate Wales: Welsh Government, *Sustainable Drainage Statutory Guidance* (2019), <https://gov.wales/sites/default/files/publications/2019-06/statutory-guidance.pdf>.

<sup>560</sup> This is a scheme for the drainage of small areas where the constitution of an internal drainage district would not be practicable.

<sup>561</sup> R Burnett-Hall and B Jones (eds), *Burnett-Hall on Environmental Law* (3rd ed 2012), para 13-029. S 64 of the 1991 Act gives a general power of entry to exercise any functions under the Act, subject, save in an emergency, to giving notice of intended entry. Intentional obstruction of entry is a summary offence punishable by a fine.

<sup>562</sup> Meeting with Tim Peppin and Jean-Francois Dulong, Welsh Local Government Association.

<sup>563</sup> Flood and Water Management Act 2010, s 1(1).

<sup>564</sup> Land Drainage Act 1991, s 14A(9).

<sup>565</sup> Land Drainage Act 1991, s 14A(10)

use the powers for maintenance of drains on a more proactive basis to prevent blockages from arising.<sup>566</sup>

- 9.81 There is a more proactive power to work on drainage systems provided by the Highways Act 1980, although this is confined to land adjoining or near a highway. The Act gives a highway authority various powers to maintain, alter or remove structures or works situated on, over or under land which the authority does not own and which do not form part of the highway. One instance is the power to construct drains on land adjoining or near the highway, and to cleanse and keep open such drains, where this is necessary for draining or otherwise preventing surface water from flowing on to the highway.<sup>567</sup> A power of entry is provided where the highway authority has any power to maintain, alter or remove any “structure or work” on land which it does not own or does not form part of the highway for which they are responsible. A “work” is defined to include watercourses, culverts and drains. A person authorised in writing by the highway authority to enter the land may do so at any reasonable time.<sup>568</sup>
- 9.82 The 2010 Act, in conjunction with the 1991 Act and Welsh statutory guidance, could provide a model for a register of tips, designation of high-risk sites, agreed management plans, and inspections with powers of entry to enforce the management plan. It would be important to ensure that powers allow local authorities to ensure that maintenance work is done without a requirement to wait for collapse or failure. This approach would also need to be backed up by a general duty to inspect that is not contingent on showing cause to believe that the plan had not been implemented. This would reproduce the problems experienced under the 1969 Act.
- 9.83 Stakeholders told us that it was important for new legislative provisions imposing statutory duties to provide a specific charging mechanism to recoup costs from landowners. Where legislation fails to do this, the local authority has to rely on other legislation, particularly the Local Government Act 2003, to try and recoup costs. This approach causes difficulties as councils can only charge for discretionary services and not for the performance of statutory duties.

## **THE CONTAMINATED LAND REGIME UNDER PART 2A OF THE ENVIRONMENTAL PROTECTION ACT 1990**

- 9.84 The Part 2A regime provided by the Environmental Protection Act 1990 for the treatment of contaminated land was discussed in our review of the law relating to coal tip safety.<sup>569</sup> We looked at the NRW review of the use of the Part 2A powers between 2001 and 2016.
- 9.85 Once land is determined to be contaminated land, authorities approach remediation using a hierarchy of mechanisms. These move from securing agreement with the appropriate person, to serving a notice to inform that person of what is required of them, or undertaking the work themselves after issuing the remediation statement and subsequently recovering the cost from the appropriate person. The study also found

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<sup>566</sup> See para 7.19 above.

<sup>567</sup> Highways Act 1980, s 100.

<sup>568</sup> Highways Act 1980, s 291.

<sup>569</sup> See paras 5.31 to 5.40 above.

that in practice the regime was used in only 3% of cases of contaminated land identified by the local authorities, and that the preferred means of enforcement was through the planning system. An important reason for this was that it ensured that the costs of dealing with the contamination would be borne by those likely to benefit from redevelopment of the land.

- 9.86 In certain circumstances contaminated land may be designated as a special site. In this situation the role and responsibility of the local authority as lead regulator for Part 2A is transferred to NRW. This model could be used, as in the case of the designation of higher risk reservoirs discussed above, to create a scheme for the designation of higher risk tips which would place them under the control of a single oversight body.

## NON-NATIVE SPECIES

- 9.87 Powers introduced in the Infrastructure Act 2015 enable NRW to control non-native species on private land which, if uncontrolled, could have significant impacts on biodiversity, other environmental interests or other economic interests. The scheme provides an example of a phased approach to intervention by an authority, progressing from investigation through agreement to compulsion and enforcement where required.<sup>570</sup>
- 9.88 Schedule 9A, inserted by the 2015 Act into the Wildlife and Countryside Act 1981, provides for species control agreements to be made between environmental authorities (in Wales, the Welsh Ministers and NRW) and owners of premises (which includes land), and for species control orders to be made by the environmental authorities. These may relate to an invasive non-native species of animal or plant.
- 9.89 Under a species control agreement, the parties agree to the carrying out of species control operations. The agreements must provide for the operations to be carried out, the party who is to carry them out, and the time by which they must be carried out. The agreement may also provide for payment to be made in respect of the operations.
- 9.90 The authority may make a species control order if the owner has failed to comply with an agreement entered into and has been given appropriate notice of that failure and reasonable opportunity to rectify it, or where the owner has been offered an agreement and has refused to enter into an agreement on suitable terms or has failed to respond within 42 days and the authority thinks it unlikely that the owner will enter into an agreement. The authority may also make such an order if it considers it to be urgently necessary, or if it has been impossible to identify the owner despite having taken specified steps to do so.
- 9.91 The order must either require the owner to carry out the species control operations, or provide for the authority to carry them out. Save in the case of an emergency order, the order must provide sufficient time within which to appeal. Orders may include provision for payment by the authority to the owner in respect of the reasonable costs of operations to be carried out by the order, or for payment by an owner in respect of the reasonable costs of operations to be carried out by the authority.

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<sup>570</sup> Infrastructure Act 2015, ss 23 to 25. The 2015 Act followed recommendations made by the Law Commission in *Wildlife Law: Control of Invasive Non-native Species* (2014) Law Com No 342.

- 9.92 The schedule also makes provision for appeals and enforcement. It provides for an owner of premises subject to a species control order to appeal to the First-tier Tribunal against either the making of the order or any provision contained within it. It also sets out what action the First-tier Tribunal may take in determining an appeal. The appeals go to the Environment jurisdiction within the General Regulatory Chamber.<sup>571</sup> Enforcement powers include a power for the authority to do the work required by an order where the owner has failed to carry out the operation or to do so in the way specified in the order. In this case, the authority may recover the expenses incurred in doing so. Failure to comply with an order or intentional obstruction of an operation are criminal offences.
- 9.93 The Secretary of State in England and the Welsh Ministers in Wales must issue a code of practice to provide practical guidance on the use of species control agreements and orders.<sup>572</sup>
- 9.94 The Law Commission recommended this regulatory regime after identifying the absence of a mechanism in England and Wales to compel the owner/occupier to take measures without their consent. Our report considered the level at which the order-making power should be exercised. If confined to government level, we concluded that the efficacy of the tool could be reduced, as the order-making power would be separated from those charged with operational delivery.<sup>573</sup>
- 9.95 The report acknowledged the need for careful limitations on powers which interfere with an individual's settled enjoyment of land or property. Protection was to be provided first by carefully defining the subject matter of the orders and agreements, and secondly by the application of the principle of proportionality.<sup>574</sup> Article 1 of protocol 1 to the European Convention on Human Rights requires that any interference with a person's possession must be lawful and pursue a legitimate interest, and that the means employed should be proportionate to the aim to be realised so as to strike a "fair balance " between the general interest of the community and the individual's fundamental rights.<sup>575</sup> The report also recommended that there should be a requirement to provide reasons for making an order.
- 9.96 Schedule 9A requires that, before an order can be granted, the authority must be satisfied that an invasive animal or plant, as defined, is present on the property.<sup>576</sup> The authority must also be satisfied that the provisions of the order are proportionate to the objective to be achieved.<sup>577</sup> When notice is given of the making of an order, the

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<sup>571</sup> Wildlife and Countryside Act 1981, sch 9A para 16.

<sup>572</sup> Wildlife and Countryside Act 1981, sch 9A paras (26) and (27).

<sup>573</sup> Wildlife Law: Control of Invasive Non-native Species (2014) Law Com No 342, para 3.10.

<sup>574</sup> Above, para 3.23.

<sup>575</sup> Above, para 3.34.

<sup>576</sup> Wildlife and Countryside Act 1981, sch 9A paras (2) and (10).

<sup>577</sup> Wildlife and Countryside Act 1981, sch 9A para (10)(3).



authority must include the reasons for making the order, and the reasons for any requirements imposed by it on the owner.<sup>578</sup>

- 9.97 Similarly, the report recognised that the power of entry provided by the new regime must reflect a balance between individual rights and the public interest. In England and Wales, entry onto private property by any person is a trespass unless consent is given or the entry is otherwise authorised by statute or the common law.<sup>579</sup> The use of force to enter onto land or into premises must also be explicitly authorised by statute or the common law, otherwise the entry may constitute an offence.<sup>580</sup> This is reinforced by article 8 of the ECHR and by article 1 of its first protocol.<sup>581</sup>
- 9.98 Certain powers may only be exercised under a warrant, in order to ensure a further level of oversight in the balancing exercise between individual rights and public interest. Where powers of entry can be exercised without a warrant, other procedural guarantees are needed, such as the requirement to give advance notice of the exercise of the power. Entry by warrant is provided as a last resort.<sup>582</sup>
- 9.99 The report noted that, following a review of powers of entry, the Home Office in 2012 developed a “powers of entry gateway”. Any new power of entry must satisfy requirements of necessity, proportionality and safeguards. The gateway guidance stipulates that powers of entry should only be used where necessary, rather than routinely. The use of force to secure entry or entry without consent of the occupier should only be authorised under a warrant. Prior notice of the use of a power of entry should be given save in an emergency, where there is a risk of serious harm to the public or a notice would defeat the purpose of entry. If following the notice the owner refuses entry, a warrant should be obtained.<sup>583</sup>
- 9.100 The Act reflects this approach by placing careful limitations on the power of entry. It must be exercised for the purposes specified, including to decide whether to offer a species agreement, to make a species control order, to investigate non-compliance with an order or to carry out species control operations under a species control order. The authority may not exercise the power of entry to investigate whether to make an agreement or an order unless there are reasonable grounds for suspecting that the species is present.<sup>584</sup> The exercise of the power of entry must be authorised by a warrant issued by a justice of the peace in specified circumstances, including where the land is a dwelling or other areas such as a garden used with the dwelling,

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<sup>578</sup> Wildlife and Countryside Act 1981, sch 9A para (14)(3).

<sup>579</sup> *Entick v Carrington* (1765) 19 State Tr 1065, [1765] 1 WLUK 1.

<sup>580</sup> Criminal Damage Act 1971, ss 1 to 3 create offences of destroying or damaging property without lawful excuse, of threatening to do so, and of possessing anything with intent to do so. S 6 of the Criminal Law Act 1977 creates an offence of using or threatening violence without lawful authority for the purpose of securing entry into any premises, while there is known to be a person inside opposing entry. It is immaterial whether the violence is directed at property or people.

<sup>581</sup> Wildlife Law: Control of Invasive Non-native Species (2014) Law Com No 342, paras 3.95 and 3.96. Art 8 of the ECHR provides a right to respect for private and family life, home and correspondence.

<sup>582</sup> Above, paras 3.97 and 3.99.

<sup>583</sup> Above, para 3.103 and see Home Office, *Guidance on powers of entry gateway* (2012) p 9. The guidance was drawn up following the enactment of the Protection of Freedoms Act 2012.

<sup>584</sup> Wildlife and Countryside Act 1981, sch 9A para (21).

admission has been refused or is likely to be refused by an owner, the premises are unoccupied or the owner is temporarily absent, and where entry is to carry out operations under an emergency order or where there is no identifiable owner.<sup>585</sup> In all other cases, the environment authority may provide written authorisation for persons to enter, and the owner must be given reasonable notice. This is defined as not less than 48 hours.<sup>586</sup>

9.101 The Act also provides that the person authorised to enter may take other persons, equipment, machinery or materials with them and may take samples of anything on the premises.<sup>587</sup>

9.102 The scheme offers a carefully graduated hierarchy of mechanisms to achieve its objectives, from agreement to order, either to compel the owner to do the work themselves or to allow the authority to undertake the work and recoup the cost. There is a power to investigate non-compliance. There are differences in the nature of the hazard to be dealt with. Since non-native species are not usually a latent problem, there is no need for a general duty to inspect for their presence; the power is exercisable where there is cause to believe that the species is present. In a reformed coal tips regime, a general duty to inspect would allow problems to be identified before they pose a threat. With non-native species, in addition, the issue of preventive maintenance does not arise.

## **ENVIRONMENT (WALES) ACT 2016**

9.103 Section 16 of the Environment (Wales) Act 2016 provides NRW with a power to reach land management agreements for the sustainable management of natural resources. The provision permits the authority to reach an agreement with any person who has an interest in land in Wales about the management or use of the land if doing so promotes “any objective it has in the exercise of its functions”. A land management agreement may, for example, impose obligations in respect of the use of the land, restrictions on the exercise of rights over the land or provide for the carrying out of such works “as may be expedient for the purposes of the agreement”. An extension of this power to permit management agreements to be reached between coal tip owners and the authorities charged with responsibility for coal tip safety could provide an effective approach to tip maintenance.

## **CONTROL OF WATER DISCHARGE FROM MINES**

9.104 Sections 4A to 4G of the Coal Industry Act 1994, inserted by the Water Act 2003, provide wide powers to the Coal Authority to control the discharge of water from mines.<sup>588</sup> They are an example of a regulatory approach which allocates responsibility directly to an authority to conduct both management and remedial works, in a way which confers a wide discretion. The model is based on an acceptance that the discharge of water from mines is both a significant hazard and a liability arising from

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<sup>585</sup> Wildlife and Countryside Act 1981, sch 9A para (22).

<sup>586</sup> Wildlife and Countryside Act 1981, sch 9A para (23).

<sup>587</sup> Wildlife and Countryside Act 1981, sch 9A para (24).

<sup>588</sup> The control of water discharge from mines, as well as coal mining subsidence discussed below, are reserved matters. See the discussion in ch 5.

the historic mining industry which is the responsibility of the authority rather than the private owner. The powers are broad and encompass powers of entry and investigation in case of risk both to the environment and human health, discretion as to the appropriate action to be taken, and powers of compulsory purchase. The provisions are:

- (1) section 4A: power to prevent discharge of water from coal mine: under section 4A(1) the Authority may take such action as it considers appropriate (if any) for the purpose of preventing, or mitigating the effect of, the discharge of water from a coal mine into or on to any land or into any controlled waters;
- (2) section 4B: power of entry and investigation in cases of risk of serious pollution to the environment or danger to life or health from discharge of water from a coal mine in order to determine the extent of the pollution or of the danger, to determine whether and if so how the Authority should exercise its section 4A power, and to take action;
- (3) section 4C: power of compulsory purchase to prevent, or mitigate the effect of, discharge of water where this is causing or is likely to cause significant pollution or serious harm to human health;
- (4) section 4CA: power to “take such action as it considers appropriate” in respect of subsidence arising other than in connection with coal mining, and for the purpose of preventing or mitigating the discharge of water other than from a coal mine; and
- (5) sections 4D to 4G: powers to “take such action as it considers appropriate” in relation to discharge of water from a coal mine in Scotland.

## **COAL MINING SUBSIDENCE ACT 1991**

9.105 The Coal Mining Subsidence Act 1991 is an example of a regulatory approach which places a duty directly on a regulatory authority to deal with a mining liability. Under the Act, the Coal Authority is under a duty to take remedial action in respect of subsidence damage to any property which has been caused by the withdrawal of support from land as a result of coal mining, save where the damaged land is within the area of responsibility of any person as the holder of a mining licence.<sup>589</sup> The Authority is also under an obligation to pay the cost of remedial works carried out by a third party, and to pay compensation where the value of the property has fallen.<sup>590</sup>

## **STATUTORY CONTROLS IN OTHER JURISDICTIONS**

9.106 We have also looked at other jurisdictions for possible regulatory approaches to disused coal tips. Internationally, there have been many disasters caused by mining waste. This has led to legislation to manage active waste tips and dams. The approach often taken is to impose a requirement to provide a bond for the reclamation of a site at the time of the granting of a mining licence.

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<sup>589</sup> Coal Mining Subsidence Act 1991, ss 1 and 2, as amended by the Coal Industry Act 1994, s 43.

<sup>590</sup> Coal Mining Subsidence Act 1991, ss 11 and 12, as amended by the Coal Industry Act 1994, s 43.

- 9.107 This approach to regulation does not cover waste tips associated with mines abandoned before the introduction of the legislation. An example of this is the EU Mining Waste Directive, discussed in chapter 5. As we described in relation to the position in the UK, the Directive does not apply to mines closed before 2008.<sup>591</sup>
- 9.108 We were unable to discover any legislation relating specifically to the regulation of abandoned waste tips other than the 1969 Act. We were unable, for example, to find any legislation which places a duty to maintain or remediate an abandoned mine site. Instead, most models that we examined granted powers to state authorities to designate a site and to order remediation. These powers were usually accompanied by funds to finance the remediation, as well as powers of entry onto the site.
- 9.109 A good example of these approaches is the Surface Mining Control and Reclamation Act 1977 (SMCRA) in the United States. The Act provides for securing remediation both following mining operations and in respect of abandoned workings. First, it requires mine operators to provide a reclamation plan prior to the issue of any permit to commence mining. Operators must also provide a performance bond to guarantee that funding will be available to complete the reclamation, with a view to ensuring that reclamation is completed even if the operator goes out of business prior to completing the reclamation or is otherwise unable to complete the project. The bond is not released until after the state or federal regulatory office has concluded that the reclamation is successful, which can be over ten years after the reclamation process has been completed.<sup>592</sup>
- 9.110 The Act also sets a standard for reclamation, in that it requires a coal mining site to be restored to “a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses”. In practice, the interpretation of this requirement varies state by state.<sup>593</sup>
- 9.111 The SMCRA also provides funding for reclamation projects in relation to abandoned mines, backed by a power, rather than a duty, to designate sites. The Act established a trust fund, the Abandoned Land Mine Fund, to finance the reclamation of mines abandoned before the Act was passed in 1977. It also set up the Office for Surface Mining Reclamation and Enforcement. The fund is financed by a tax on coal mined by current coal mine operators. The Office oversees state reclamation programmes.<sup>594</sup>
- 9.112 In New South Wales, Australia, Division 3A of the Mining Act 1992 empowers a Minister to designate a derelict mine site, defined as a site that has been used for, or affected by, a mining operation which has been abandoned. The Minister “may cause steps to be taken to have a derelict mine site fully or partially rehabilitated and may, for that purpose, enter into contracts or agreements”.<sup>595</sup> An authorised person may then enter onto the land and “do anything that in the person’s opinion is necessary for

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<sup>591</sup> See para 5.5 above.

<sup>592</sup> L Sloss, “Coal Mine Site Reclamation”, *IEA Clean Coal Centre* (2013), [https://usea.org/sites/default/files/022013\\_Coal%20mine%20site%20reclamation\\_ccc216.pdf](https://usea.org/sites/default/files/022013_Coal%20mine%20site%20reclamation_ccc216.pdf) (last visited 17 March 2021).

<sup>593</sup> Above.

<sup>594</sup> See <https://www.osmre.gov/about.shtm> (last visited 17 March 2021).

<sup>595</sup> Mining Act 1992, s 242A.

or in connection with the rehabilitation”, providing that they have given reasonable notice to the landowner. If the landowner suffers damage as a result, they are entitled to reasonable compensation.<sup>596</sup> This compensation, and any other costs associated with the rehabilitation may be paid from the Derelict Mines Sites Fund.<sup>597</sup>

9.113 In Tasmania, under the Mineral Resources Development Act 1995, the Minister may “cause any abandoned mining land or land affected by former exploration activities to be rehabilitated” and “enter into any contract relating to the environmental rehabilitation of any abandoned mining land or land affected by former exploration activities”.<sup>598</sup> There is also a Rehabilitation of Mining Lands Trust Fund<sup>599</sup> available for this.

9.114 Western Australia has an Abandoned Mines Plan which was set up following the Mining Rehabilitation Fund Act 2012. The Plan was formalised following the Abandoned Mines Policy in January 2016. There is also a Mining Rehabilitation Advisory Panel which provides advice on rehabilitation projects.<sup>600</sup> The Geological Survey of Western Australia has also produced an inventory of abandoned mine site features.

9.115 There are some interesting approaches to reclamation within Europe. In Germany, tips have been used for wind and photovoltaic farms.<sup>601</sup> The Swedish Environmental Protection Agency and the Swedish Geological Survey have, on behalf of the government, jointly produced proposal for a strategy for handling mining waste that includes the re-purposing of coal waste (as long as it does not have acid-forming potential) for construction projects such as roads and dust walls on sand reservoirs. The proposal considers that these uses do not breach the Waste Framework Directive as long as the material is classified as a residual by-product of the main mining operation which can be used without processing, its end use is clear and use of the material is not prohibited for safety or environmental reasons.<sup>602</sup> In France, which has some of the highest coal tips in Europe, tips have been used as biodiversity

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<sup>596</sup> Mining Act 1992, s 242B (4).

<sup>597</sup> Mining Act 1992, s 242C.

<sup>598</sup> Mineral Resources Development Act 1995, s 180.

<sup>599</sup> Mineral Resources Development Act 1995, s 181.

<sup>600</sup> See Department of Mines, Industry Regulation and Safety, Abandoned Mines Program, <http://www.dmp.wa.gov.au/Environment/Abandoned-mines-projects-18193.aspx> (last visited 17 March 2021).

<sup>601</sup> J Kretschmann, AB Efremenkova, AA Khoreshok, “From Mining to Post-Mining: The Sustainable Development Strategy of the German Hard Coal Mining Industry” (2017) 50 *Earth and Environmental Science*.

<sup>602</sup> See Swedish Environmental Protection Agency and Geological Survey of Sweden, Förslag Till Strategi För Hantering Av Gruvavfall [Proposed Strategy for the Management of Mining Waste] (14 September 2017), <https://www.naturvardsverket.se/upload/miljoarbete-i-samhallet/miljoarbete-i-sverige/regeringsuppdrag/2017/gruvavfall/strategi-forslag-hantering-gruvavfall-20170913.pdf> (last visited 17 March 2021).

reserves.<sup>603</sup> France also provides a useful model for guidance to landowners who acquire tips after active mining has ceased.<sup>604</sup>

9.116 These international examples provide models for reclamation initiatives which seek to restore beneficial land use, rather than for safety-related maintenance. Reclamation initiatives do not form part of this project, but are considered in the next chapter as a possible adjunct to a regulatory framework.

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<sup>603</sup> K Patowary, "The Slag Heaps of Loos-en-Gohelle" (2015) *Amusing Planet*, <https://www.amusingplanet.com/2015/08/the-slag-heaps-of-loos-en-gohelle.html> (last visited 17 March 2021).

<sup>604</sup> Société de l'industrie minière, *Guide du détenteur de terrils et autres dépôts miniers issus de l'activité charbonnière* (2003). The guide helps owners to understand how to ensure the continued safety of the tip site, and recommends activities such as specialist surveys and frequent surveillance of the tip, especially after heavy rainfall.

# Chapter 10: Provisional proposals for a new coal tip safety regime

## GENERAL PRINCIPLES

- 10.1 We have noted the need to move away from a medium-specific to a more holistic approach in any future regulatory framework. In the context of coal tips, we think this means adopting a framework which is able to address a range of pollution risks as well as instability. The framework needs to be sufficiently robust to deal with the implications of climate change. It also needs to be sufficiently flexible to work in tandem with other legislation providing environmental protection, including in urgent situations, in order to deal with competing priorities and achieve the best possible environmental outcome.
- 10.2 A more holistic approach also raises the issue of whether the regulatory framework which is adopted for coal tips should be capable of expansion to cover waste from other types of mine found in Wales. This paper, the questions it asks and proposals it provisionally makes, are aimed at identifying a legal framework that addresses safety issues in coal tips only. But it may be that the framework that we identify can be extended, with or without modifications, to other types of mining waste. We welcome views on how workable and desirable it might be to include other types of tips within the scope the proposed legal framework. The matter is beyond our terms of reference and will be for the Welsh Government to decide, but the Welsh Government has indicated to us that it welcomes views on the issue.
- 10.3 Our review of the problems encountered in the current management of disused tips identified potential shortcomings in the regulatory framework created by Part 2 of the Mines and Quarries (Tips) Act 1969. In particular, the Act does not create a duty to ensure the safety of coal tips. It does not provide powers in respect of tip hazards other than instability; in addition, it does not create a power to intervene unless there is concern that a tip is unstable, and in consequence does not provide a power to intervene before a tip becomes a danger to carry out the kind of maintenance work that could prevent the tip becoming unstable. The powers it does create are fragmented across local authorities, leading to inconsistent safety standards and risk classifications.<sup>605</sup>
- 10.4 Our review of the legislative framework also suggests that two further principles can be distilled to guide the construction of a new framework: consistency of approach and the prevention of harm through a proactive rather than a reactive approach. These principles align well with the sustainable development principle set out in the Environment (Wales) Act 2016 and the requirement of the Well-being of Future Generations (Wales) Act 2015 to act in accordance with this principle. In particular, the sustainable development principle requires a public body to take account of the

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<sup>605</sup> See the discussion in ch 7.

long term, to take action which helps to prevent problems occurring, and to take an integrated approach.

## **TIPS ASSOCIATED WITH OPERATIONAL MINES**

- 10.5 Our provisional view is that it is not necessary to propose any change to the regime governing the few remaining tips in Wales associated with operational mines. We have been told that the existing regulatory regime is comprehensive and adequate. Where there are areas of concern, for example in the conditions governing the closure of mines and the remediation of the associated tips, these relate to the operation of the available controls in practice and not to the existing legal framework.

### **Consultation Question 1.**

- 10.6 We provisionally propose that the existing regulatory regime for tips associated with operational mines should not be altered.

Do you agree?

- 10.7 That regime is designed for tips that remain under the control of a mine operator whose colliery operations as a whole are subject to the Health and Safety at Work Act 1974; in most cases, the tips are still receiving colliery spoil. It is our provisional view that disused tips continue to require a separate regime tailored to the circumstances of tips that, by and large, are not on land owned or controlled by a body with mining or environmental expertise. Unlike the current regime, the new regime should take into account the fact that disused tips now include very large and, in some cases, hazardous tips created by industrialised coal mining.
- 10.8 The remainder of this chapter will look at the design of a possible regulatory framework which provides consistency in the management of disused tips and takes a proactive rather than a reactive stance.

## **ELEMENTS OF A NEW REGULATORY FRAMEWORK FOR DISUSED TIPS**

### **The definitions of a tip and of a disused tip**

- 10.9 The definition of a tip in Part 2 of the Mines and Quarries (Tips) Act 1969 is set out at paragraph 4.31 above.<sup>606</sup> Slightly more detailed definitions of a tip are used in regulation 2(1) of the Quarries Regulations 1999 and in regulation 2 of the Mines Regulations 2014, set out at paragraphs 4.64 and 4.74 above.<sup>607</sup> They differ from the 1969 Act definition in including express references to refuse in “a liquid state” and to overburden dumps, backfill, spoil heaps, stock piles and lagoons.

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<sup>606</sup> The definition was originally contained in s 2 of the 1969 Act, but was moved into s 11 when s 2 was repealed by the Mines Regulations 2014.

<sup>607</sup> The definition in the Quarries Regulations is the same as the definition in the Mines Regulations apart from a reference to an accumulation or deposit of “any substance at a quarry” and differences of layout.



- 10.10 The 1969 Act defines a *disused* tip as a tip other than one to which the Quarries Regulations 1999 or the Mines Regulations 2014 apply. We have already provisionally proposed above that the regimes in the Mines Regulations and Quarries Regulations should continue to apply to tips associated with active mines; we therefore provisionally consider that, as at present, the new legislation should be expressed not to apply to tips to which the Quarries Regulations or the Mines Regulations apply.
- 10.11 Unless any legislation that results from this project is extended to all types of mine and quarry waste, the legislation will require a definition of a coal tip. The detail of legislative drafting is a matter for Legislative Counsel, but a legislation of this sort inevitably uses terminology more familiar to those in the mining industry than to lawyers. We seek views on whether a satisfactory definition could be framed by replacing the reference to “refuse from a mine or quarry” in section 11 of the 1969 Act with wording such as “waste from coal mining” and whether a regime for disused tips needs to include reference to overburden dumps, backfill, spoil heaps, stock piles and lagoons.

### **Consultation Question 2.**

- 10.12 We seek views on whether a satisfactory definition of a disused coal tip could refer to waste from coal mining and whether it should include express reference to overburden dumps, backfill, spoil heaps, stock piles and lagoons.

### **Consultation Question 3.**

- 10.13 We provisionally propose that any new legislation should not apply to a tip to which the Quarries Regulations 1999 or the Mines Regulations 2014 apply.

Do you agree?

### **The definition of a tip owner**

- 10.14 Another issue of relevance in building the new regulatory framework is the definition that should be used of the “owner” of land containing a tip.<sup>608</sup> It will be important to have clarity about the identity of the owner to ensure that people who acquire interests in land containing a tip are aware of their liabilities both under the new scheme and generally, and are able to take out appropriate insurance.
- 10.15 We saw in chapter 4 that the definition of an owner for the purposes of the 1969 Act encompasses a freeholder who has not granted a lease, a tenant who has been granted a tenancy for a term of any length, provided that, at the relevant date, the

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<sup>608</sup> The definition adopted will be important in determining on whom the duty to notify the proposed supervisory authority of the existence of a tip or of a change of ownership will fall (see paras 10.31 and 10.32 below), and in relation to other powers and duties created by the regime, such as the proposed powers to enter into an agreement with an owner and to impose an order on an owner (paras 10.72 and 10.74 below) or to charge expenses to an owner (para 10.105 below).

term has at least a year to run or a freeholder who holds the reversion of a lease which, at the relevant date, has less than year to run.<sup>609</sup> The impact of this upon short leaseholders is to some extent mitigated by the court's power to order contribution, but the power is discretionary, leaving them uncertain as to the extent of their liabilities unless they have covered them in an agreement.<sup>610</sup> Our provisional view is that the law should provide a greater degree of certainty by directing liability to the person who is in economic terms the owner of the land containing a tip.

- 10.16 There is no definitive view on the point at which someone who holds a lease of land should be considered an owner rather than a renter. One indicator is whether a person has a financial stake in the land as a capital asset, or is merely paying a periodic sum for the occupation or use of the land, with the capital value remaining with the freeholder. In any individual case the terms of the lease may illuminate the issue: a lease at a full market rent does not generally have a capital value; on the other hand, a lease granted for a premium together with a low ground rent (and possibly a service charge) will often be a saleable asset, more akin to ownership.<sup>611</sup> The longer such a lease is, the greater is its capital value and the stronger is the leaseholder's connection to the land. In a regulatory scheme a bright line rule is necessary and the length of the lease may be the clearest marker. Leases granted for a term of more than 21 years are often seen as crossing a dividing line.<sup>612</sup>
- 10.17 We recognise that the fact a particular lease length is used in one context does not mean that it is necessarily appropriate in another. But it would be unusual to suggest that a person granted a lease for 21 years or less would be an owner; and the shorter their lease the less likely it is that they would have a financial interest in the capital asset. Insofar as liability for a coal tip could arise it seems to us to be undesirable as a matter of policy to provide that, for example, the tenant under a five-year agricultural lease is primarily liable rather than the freeholder.
- 10.18 We see no particular merit in the current rule that shifts liability back to a freeholder once a lease has less than a year to run. If the total length of a lease is used to determine whether the leaseholder should bear a burden of ownership, it seems more symmetrical for the burden to apply throughout the duration of the lease.

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<sup>609</sup> See para 4.42 above. The term "reversion" refers to control of the land reverting to the freeholder when a lease expires. For simplicity, this assumes that there are no intermediate leases. An intermediate leaseholder could be the "owner" where their lease had more than a year to run and a sub-lease had less.

<sup>610</sup> See para 4.55 above. Like the present discussion, that discussion ignores the possibility of intermediate leases. This is for simplicity only. We provisionally consider that our proposals would be equally appropriate for intermediate leases.

<sup>611</sup> There is academic writing that supports the idea of a "financial stake" denoting ownership. See for example S Bright & N Hopkins, "Home, Meaning and Identity: Learning from the English Model of Shared Ownership" (2011) 29 *Housing, Theory and Society* 377-397.

<sup>612</sup> For example, enfranchisement legislation gives rights where leases are granted for more than 21 years and those rights (to buy the freehold or extend the lease) are intended to benefit those who own their home rather than renters. See further the discussion of the issue in Leasehold home ownership: buying your freehold or extending your lease (2020) Law Com No 392.

#### **Consultation Question 4.**

10.19 To the extent that liability under the new regulatory framework rests with the owner of land containing a tip, we provisionally propose that the owner should be defined as the freeholder or a leaseholder under a lease of 21 or more years, except where their interest is in reversion upon a term of 21 or more years.

Do you agree?

#### **A single supervisory body for disused tips**

10.20 At present, functions in relation to disused tips lie with local authorities. We provisionally consider that the principle of consistency suggests first a need for a single supervisory entity whose duty it is to supervise the management of disused tips in such a way as to ensure their safety. That duty could be defined in broad terms as a duty to ensure that the tips are not a danger to human life and well-being or to the environment. We do not think that this duty should be confined solely to the stability of a tip. The main benefit of a single supervisory authority is that it can monitor all disused tips and ensure compliance with all regulatory requirements to a consistent standard across Wales. We do not envisage that this duty would require the supervisory authority to carry out all safety-related activities itself; it could engage others to carry out particular activities.

10.21 That authority might be required to make regular reports to the Welsh Ministers or the Senedd at stipulated intervals in order to provide accountability. This model is demonstrated by the reservoirs regime, under which Natural Resources Wales (NRW) is the responsible body and is under a duty to make reports to Welsh Ministers.<sup>613</sup> The benefits are also evidenced by the work of the Coal Tip Safety Task Force over the past year. In our pre-consultation discussions, almost all the stakeholders we spoke with thought that the current distribution of responsibility among individual local authorities impeded consistency and made it more difficult to maintain specialism. It is also likely that it is less cost effective. In the remainder of this chapter we refer to the proposed body as the “supervisory authority”.

10.22 The duty of the supervisory authority could be expressed either as a general duty to ensure safety or by reference to particular risks, which might or might not extend beyond instability. We provisionally favour a general duty; the authority would be well placed to gauge the risks presented by coal tips, and a duty limited to stated risks might hamper the authority undesirably.

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<sup>613</sup> See para 9.10 above.

#### **Consultation Question 5.**

10.23 We provisionally propose that a supervisory authority with responsibility for the safety of all disused coal tips should be established.

Do you agree? If not, please set out the alternative that you would favour.

10.24 In the event that the proposal of a single responsible authority finds favour, the next question is what form that entity should take. It could be an existing Wales-wide body, such as NRW, or a newly created Wales-wide body, or some form of co-ordinating body established at local government level.

#### **Consultation Question 6.**

10.25 We seek views on whether the supervisory authority should be an existing body or a newly created body.

#### **Consultation Question 7.**

10.26 If a new body is established, what form should the new body take? Should it be, for example, a central public body, a corporate joint committee of local authorities under the Local Government and Planning (Wales) Act 2021, or something else?

#### **Consultation Question 8.**

10.27 We provisionally propose that the supervisory authority's duty to ensure the safety of tips should be framed as a general one, rather than one limited to specified risks.

Do you agree?

#### **Tip register**

10.28 We provisionally propose that one of the duties of a new supervisory authority would be to compile and maintain a tip register. Both the reservoirs and flood and water management regimes provide a model for this duty. The information already gathered by the Coal Tip Safety Task Force could feed into the register, and we have been told by the Welsh Government that work is already under way to compile a register. The register entry for each tip should include stipulated standardised information to provide an initial template for its management. We suggest that the contents of the tip register should be prescribed by statutory instrument.

### **Consultation Question 9.**

10.29 We provisionally propose that a central tip register should be compiled and maintained.

Do you agree?

### **Consultation Question 10.**

10.30 We provisionally propose that the contents of the tip register should be prescribed by the Welsh Ministers by statutory instrument.

Do you agree?

### **Duty to notify tips and power of the authority to add tips to the register of its own motion**

10.31 Given that a record of all known coal tips in Wales will be compiled, we do not consider it appropriate to require landowners to notify all those tips afresh. However, the possibility cannot be discounted that previously unknown tips come to light, and there will be active tips which become disused at some point. We consider it preferable that the register be comprehensive, and incline to the view that landowners should be under a duty to notify the authority of the existence of any tip of which they become aware that is not already in the register. We appreciate the risk that the duty could extend to very small deposits of mining refuse that were not of any practical concern, but doubt that a threshold of size would be workable.

10.32 The duty to notify could be framed in terms of a duty to inform the supervisory authority of the existence of tip unless the owner has reason to believe that it has been registered. We envisage that the supervisory authority would notify a tip owner that a tip has been entered on the tip register at the time the statutory register is compiled or upon the later addition of a tip. This is likely to take the form of a notification that refers to the tip by reference to the tip boundaries as mapped into a polygon. The issue of public access to the register is considered further below. The duty to notify would also need to include a duty to notify of changes to the information on the register such as a change of ownership.

10.33 The experience of NRW in keeping the reservoirs register after smaller reservoirs were added to the regulatory framework suggests that making inclusion on the register solely dependent on notification by owners can be problematic. In the context of coal tips, when it may be difficult for owners to know whether they have a tip on their land, or where it may be difficult to trace the owner of land, this problem is even more apparent. We provisionally consider it important to provide the supervisory authority with a power to add a tip to the register of its own motion.<sup>614</sup>

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<sup>614</sup> See paras 9.36 and 9.41 above.

10.34 Such a power will enable the supervisory authority to update the register if additional disused tips come to light. The likelihood that there are unknown tips of sufficient size to be potentially dangerous seems to us to be low. A notification duty placed upon owners – which, to be meaningful, would have to be accompanied by a sanction for breach such as a fine – might do little more than engender disputes about whether the owner was aware that their land contained a tip. We seek views on the question.

10.35 We further suggest that a right of appeal should be given where ownership or the identification of the area as a tip is disputed. We discuss possible bodies to hear appeals later in this chapter.<sup>615</sup>

#### **Consultation Question 11.**

10.36 We provisionally consider that

- (1) the supervisory authority should have a duty and a power to include on the register any tip of which it is or becomes aware; and
- (2) an owner of land should have a right of appeal against the inclusion of the landowner as owner of land on which a tip is situated; the grounds of appeal should be (a) that the land owner is not the owner of the land in question and/or (b) that there is no tip situated on the land.

Do you agree?

#### **Consultation Question 12.**

10.37 We seek views on whether an owner of land should be under a duty to notify the supervisory authority of any tip of which the landowner is or becomes aware situated on land owned by the landowner, unless the landowner has reason to believe that it has already been registered.

#### **Maintenance of the register**

10.38 The maintenance of the register raises a further set of questions. If there is a requirement to include stipulated information in the tip registration, including information on inspection and maintenance, there will also need to be a requirement to keep this information up to date. We see the duty to update the register with new information known to the supervisory authority as forming part of the authority's duty to maintain the register. In some instances the authority will be dependent on the provision of information to it by third parties, such as where ownership of land

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<sup>615</sup> See paras 10.111 to 10.114 below.

containing a tip changes or where a tip owner is carrying out their own maintenance.<sup>616</sup>

### Publication of the register

10.39 One issue which arises with the creation of a tip register is whether the information on it should be public. One of the overarching principles in Welsh legislation is the need to act collaboratively, including ensuring public involvement and participation.<sup>617</sup> There is a risk that the information contained in the register could detrimentally affect property prices and the cost of insurance.<sup>618</sup> This is an important factor for consideration, but the purpose of our provisional proposals is to minimise risk through detailed prescription of inspection, maintenance and remediation requirements. This should mitigate any deterrent effect of a property being publicly identified as containing a coal tip. It may also be thought to be preferable that those considering dealing with a property – who potentially include private purchasers or tenants, as well as commercial entities such as insurance companies – should be able to discover the position from a public register. We think on balance that the information on the tip register should be public, subject to the exclusion of any information which needs to remain confidential in order to comply with data protection law.

10.40 Data protection legislation applies to personal data, which is data relating to an individual, or data that can be traced back to an individual.<sup>619</sup> The Data Protection Act 2018 requires a legal basis for the presentation of any personal data on a database. Potential legal bases for including this information are that "processing is necessary for compliance with a legal obligation to which the controller is subject"<sup>620</sup> or "processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller".<sup>621</sup>

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<sup>616</sup> See para 10.32 above for our proposed duty to notify of changes to the information on the register.

<sup>617</sup> See the discussion of the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 at paras 5.47 to 5.52 above.

<sup>618</sup> See para 8.33 above.

<sup>619</sup> Personal data is defined in art 4(1) of the General Data Protection Regulation (GDPR) as any information relating to an identified or identifiable natural person. An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. The Data Protection Act 2018 enacts the GDPR in the UK.

<sup>620</sup> GDPR (EU) 2016/679, art 6 (1)(c).

<sup>621</sup> GDPR (EU) 2016/679, art 6(1)(e).

### **Consultation Question 13.**

- 10.41 Do you think that the information in a tip register should or should not be publicly accessible? Are there any particular categories of information that should not be published?

### **Initial inspection**

- 10.42 On first registration, we provisionally propose that a duty of inspection should fall on the supervisory authority. This parallels the reservoirs regime.<sup>622</sup> In the case of higher risk tips, in consequence of the work commissioned by the Welsh Government since February 2020, an inspection will have been done over the last year, and information from it may be able to be used as the first inspection under the new regime. This will depend on the length of time taken to set up the new regulatory framework, and the frequency of inspections required for the particular tip. It may be that by the time the statutory duty to inspect is in place, a fresh inspection is required. We suggest that the supervisory authority should have a power to delegate the inspection function to other appropriately qualified bodies such as local authorities if the number of inspections required within a given time frame is not practicable. It could, for example, delegate the inspection of lower risk tips.

### **Consultation Question 14.**

- 10.43 We provisionally propose that, upon the entry of a tip onto the register, the supervisory authority should be under a duty to arrange an inspection of the tip unless it considers that a sufficiently recent and thorough inspection has been conducted.

Do you agree?

### **Tip management plans**

- 10.44 We envisage that the purpose of the initial inspection, as in the reservoirs regime, would be to undertake a risk assessment and design a tip management plan based on all the relevant features of the tip. This we see as key to ensuring tip safety. An example of an approach to preparing a tip management plan is set out in chapter 8.<sup>623</sup> This includes compiling a standardised set of data for the tip and its surroundings.
- 10.45 We anticipate that risk assessments would be prepared based on the physical profile of the tip (factors such as the material within it, its volume, height, drainage and stability, including any history of movement, the topography of the area and the potential impact of natural features) and the receptors that would be impacted in the event of a tip failure. In this way, the risk assessment could consider both the

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<sup>622</sup> See paras 9.6 to 9.28 above.

<sup>623</sup> See para 8.26 above.



likelihood and the consequences of failure. Another way of expressing this is that it would consider both the structure and the impact of the tip. The data could include all factors related to hazards, including, for example, internal combustion and pollution. This enables the development of a tip management plan that targets all safety hazards rather than solely those relating to stability. The plan could also take into consideration the tip's proximity to other tips, as clusters of tips, which may raise issues of multiple ownership, may generate particular management needs. In practice, a single consolidated management plan for the cluster of tips might need to be produced.<sup>624</sup>

10.46 The tip management plan developed from this data would be specific to the tip or cluster. It would include specifications such as the frequency of inspection, the maintenance and remediation work required, and a timescale for their completion. In practice, as some of the data needed for the tip management plan has already been gathered, it would need to be assessed for each tip whether any further data was required following registration.

10.47 The content of an individual tip management plan is a technical matter, not suitable for determination by us; we envisage that the Welsh Government would for the most part be content to leave it to the supervisory authority to exercise its own judgement on the matter. But we see some merit in giving the Welsh Ministers power to prescribe the matters to be included in a risk assessment and tip management plan at a general level.

10.48 We envisage that it would be the duty of the supervisory authority to ensure that a tip management plan is prepared for the tip or cluster of tips. It would be open to the authority to draw up the plan itself, or to arrange for the plan to be prepared.

#### **Consultation Question 15.**

10.49 We provisionally propose that

- (1) the supervisory authority should be under a duty to arrange for the compilation of a risk assessment and management plan for any tip included on the register; and
- (2) the Welsh Ministers should have power to prescribe the matters to be included in a risk assessment and management plan by statutory instrument.

Do you agree?

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<sup>624</sup> See the reference to the Pentre landslip at para 2.23 above for an example of the complexity which can be raised for tip management by the proximity of tips. In the case of the Pentre slip, this was made worse by the fact that the tips in the affected group were in multiple ownership.

## Classification of tips and designation of higher risk tips

### Classification system

10.50 As we describe in chapter 8, the Coal Authority tips response team has used a provisional five-part classification system for coal tips.<sup>625</sup> The classification system has almost exclusive regard to the risk of instability and classifies tips, broadly speaking, by reference to (a) the degree of risk of movement of the spoil and (b) the consequences of a movement of spoil by reference to the terrain onto which dislodged spoil would fall (the “receptors”). It seems to us right that, in addition to the likelihood of a slide, an important component of the test should be consideration of the tip receptors and the consequences of failure. As in the case of the Reservoirs (Scotland) Act 2011 discussed in chapter 9, risk could be defined by reference to a range of possible consequences, encompassing at a minimum risk to human health and safety and the environment.

10.51 Whilst movement is the most pressing and serious of the risks posed by coal tips, we are interested in consultees’ views on whether a long-term tip classification system should have regard to the other hazards discussed in chapter 2, namely pollution, combustion and flooding.<sup>626</sup>

#### Consultation Question 16.

10.52 We provisionally propose that the risk classification of coal tips should have regard to the risk of instability of a tip and the consequences of a slide of spoil.

Do you agree?

#### Consultation Question 17.

10.53 Should coal tip classification also have regard to the risk the tip presents of pollution, combustion or flooding?

### Designation of hazardous tips

10.54 We provisionally consider that the designation of certain tips as requiring a more rigorous standard of intervention is an important dimension of a new regulatory scheme. Once a certain threshold is met, for example a “significant hazard” test as applied to tips related to operational mines and quarries, an enhanced safety regime would be applied with increased involvement of the supervisory authority.

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<sup>625</sup> We refer here to the classifications A, B, C, D and R. The classification NR represents a temporary category, pending a complete assessment of the known tips. See paras 8.6 and 8.7 above.

<sup>626</sup> Views on the substantive issue of the risks to be taken into consideration in the classification system are likely to be influenced by the view expressed at Consultation Question 6 above as to how the duty of the supervisory authority should be framed.

10.55 The power to designate a higher risk structure or site can be found in the regulation of reservoirs, in the provisions for tips associated with operational mines and quarries, in flood risk management and in contaminated land legislation. In the case of contaminated land, this is accompanied by a power to transfer responsibility from the local authority to NRW. The flood risk management model in the Flood and Water Management Act 2010 includes imposing a duty on the owner not to alter a designated structure without the consent of the responsible authority. This could provide a useful additional control.<sup>627</sup>

10.56 One approach to designation would be to apply these requirements solely to those tips viewed as requiring the most immediate attention. Alternatively, it could be extended further into the tips currently with a lower risk rating if the individual profile of the tip requires more intensive remedial work. The consequences of a tip failure could be a significant factor in deciding whether the tip requires designation. The classification system already used by the Task Force lends itself to drawing these distinctions: categories C and D together already cover tips where a slide could endanger life or property, while differentiating between tips with a history or signs of instability (category D) and those without (category C).<sup>628</sup> In the future, if the regulatory framework were to be extended beyond coal tips to other types of mining waste, other factors would become relevant.

10.57 We seek views on whether the concept of higher risk should be defined by reference only to stability. We also seek views on whether the nature of the work required by a tip should be a factor influencing its designation; it might be appropriate to distinguish between tips that principally require maintenance and tips that require the installation of drainage, reprofiling or other more major engineering work. Given that designation would carry additional burdens for the relevant landowner, we provisionally propose that a right of appeal against designation should be provided.

10.58 The consultation question below canvasses some broad criteria for designation. We provisionally propose a power of the Welsh Ministers to prescribe criteria by statutory instrument.

#### **Consultation Question 18.**

10.59 We provisionally propose that the coal tips safety legislation should provide for the designation of a coal tip by the safety authority as “higher risk” where the tip meets criteria prescribed by the Welsh Ministers by statutory instrument.

Do you agree?

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<sup>627</sup> See above at para 9.8 (for reservoirs), paras 9.46 and 9.48 (for tips associated with operational mines and quarries), para 9.67 (for flood and water management) and para 9.86 (for contaminated land).

<sup>628</sup> If the higher risk category corresponded to the current D category, on provisional figures it would cover 78 of the 2,144 tips in Wales. Extending it to the category C tips would add a further 216 tips. A variation upon the criteria would, self-evidently, produce a different number.

### **Consultation Question 19.**

10.60 We seek views on whether the designation of a tip should be by reference to any of the following, or other, criteria:

- (1) the tip shows signs or has a recent history of movement or instability;
- (2) a slide of spoil from the tip would be likely to impact or affect
  - (a) buildings or areas designed for human habitation or occupation;
  - (b) a road, railway, canal or other infrastructure; or
  - (c) a watercourse;
- (3) there is a substantial risk of the tip releasing dangerous pollution into the environment;
- (4) there is a substantial risk of the tip causing flooding;
- (5) there is a substantial risk of material in the tip spontaneously igniting;
- (6) the tip requires engineering work.

### **Consultation Question 20.**

10.61 We provisionally propose that a person aggrieved by a designation of a coal tip as higher risk should have a right of appeal.

Do you agree?

### **Responsibility for designated tips**

10.62 Once a tip is designated, one option would be for the supervisory body to take over the whole of the inspection, maintenance and remediation work required by the tip management plan. This would ensure a consistent and proactive approach for each tip. It would keep all the relevant documentation up to date and in one place. All planning and prioritising could be coordinated in advance. It would also allow systematic prioritisation of work based on risk.

10.63 An alternative could be that the tip owner is placed under a duty to carry out the work, possibly under the supervision of appropriately qualified engineers (see below at paragraphs 10.117 to 10.119), and the supervisory authority is placed under a duty to inspect at sufficiently frequent intervals to ensure compliance and update records. The authority would also require enforcement powers in the event of non-compliance.

- 10.64 The review of stakeholder views in chapter 7, and our endorsement of the principle that prevention of harm should guide the design of the regulatory framework, incline us towards the view that, in the case of designated tips, the authority should be responsible for ensuring that the work specified in the tip management plan is carried out, usually by carrying out the work itself.
- 10.65 However, there are likely to be cases in which a tip owner prefers and is better placed to carry out the work (or make arrangements for its carrying out) than the supervisory authority. This could in particular be so where the owner is NRW, a local authority or the Coal Authority. We provisionally favour an approach based on agreement between the supervisory authority and the owner, giving the owner an opportunity to discuss the proposed measures with the authority. We envisage, however, that the negotiations would be conducted in the shadow of the authority's power of last resort to make an order. Where an agreement to carry out work is reached, this could, where appropriate, include stipulation for the work to be conducted or supervised by a suitably qualified engineer.<sup>629</sup>
- 10.66 We set out our proposals for agreements and orders in more detail in the next section of this chapter covering less hazardous tips, to which we consider that they have more potential for application. Precedents for such powers are found in the non-native species regime under the Wildlife and Countryside Act 1981<sup>630</sup> and in the power of NRW to direct measures to be taken to avoid environmental damage under the Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009.<sup>631</sup>

#### Inspection by the supervisory authority

- 10.67 Where the work was left to tip owners to undertake, whether pursuant to an agreement or an order, the regime would need to require and empower the supervisory authority to inspect the tips at appropriate intervals. Unlike the reservoirs model, we do not think that inspection should be left to the owner. We have noted that disused tip owners differ from many reservoir undertakers in that the owners have no continuing economic interest in the tip.<sup>632</sup> We think that this justifies an approach which places a greater burden on the supervisory authority itself to monitor the tip.
- 10.68 We envisage that the tip management plan would stipulate the frequency of inspection for the particular tip. The authority's inspection duty should include a requirement to review the designation; where a tip was judged to have been returned to a state which no longer justified designation, the tip could be returned to the lower level regime that we discuss below.

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<sup>629</sup> See paras 10.117 to 10.119 below.

<sup>630</sup> Discussed at paras 9.87 to 9.102 above.

<sup>631</sup> Discussed at para 5.23 above.

<sup>632</sup> See paras 9.29 to 9.31 above.

### **Consultation Question 21.**

10.69 We provisionally propose that in the case of a designated tip the supervisory authority itself should normally be under a duty to carry out the operations specified in the tip management plan for the tip.

Do you agree?

### **Responsibility for lower risk tips**

10.70 The next question to consider is the regime which should apply to those tips not found to need designation. This category is likely to cover the vast majority of the tips on the tip database. We have heard from stakeholders that the primary problem in the case of tips currently falling into the lower categories of risk is the absence of a power to ensure the carrying out of proactive maintenance work that could prevent the tip from becoming a hazard.<sup>633</sup> For this reason the application of the principle of prevention suggests a need to design a regime which operates to ensure that maintenance is carried out regularly and with a frequency dictated by the requirements of the particular tip.

10.71 The inspection following registration of the tip which we envisage will accompany a registration system should, we have already suggested, include preparation of a tip management plan which sets out maintenance requirements for the tip and any remediation works needed. The choice which then arises is whether this ongoing work should be carried out by an authority or by the tip owner. A system which imposes this duty entirely on an authority is likely to be very expensive. From a risk perspective, for tips which have been found not to require higher risk designation, it also does not appear to be justified.

### **Prescriptive maintenance agreements**

10.72 An approach which might work better for lower risk tips is a system of maintenance agreements. The authority could be given a power to reach a tip maintenance agreement with a tip owner, backed with the power to make a maintenance order in the event of non-compliance. This could be combined with a power to allow the relevant authority to decide to carry out the work themselves. This would be a valuable option if it concludes that the cost of administering the tip agreement and securing compliance is likely to exceed the cost of the works themselves. The possibility that these powers could be given to an authority other than the supervisory authority is discussed below.<sup>634</sup>

10.73 The maintenance agreement approach has the advantage of providing a hierarchy of mechanisms to secure compliance. We outlined this type of scheme in our discussion of powers to control non-native species.<sup>635</sup> Under this scheme, an agreement is

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<sup>633</sup> See para 7.17 above.

<sup>634</sup> See para 10.88 below.

<sup>635</sup> See paras 9.87 to 9.102 above.

reached between the environmental authorities and the owner of premises. This specifies the works to be done, who is to carry them out, and a timescale for completion. The agreement may also make provision for how the costs of the works are to be covered.

10.74 If the owner fails to comply with the agreement or refuses to enter into an agreement, the authority can make an order for the owner to carry out the works or provide for the authority to carry out the works itself. Save in an emergency, the owner has a right of appeal against such an order. The orders may include provision for payment by the authority to the owner in respect of the reasonable costs of operations to be carried out by the order, or for payment by an owner in respect of the reasonable costs of operations to be carried out by the authority.

10.75 Another parallel is the model for maintenance agreements with the owners of drainage systems under schedule 3 to the Flood and Water Management Act 2010. One problem identified to us by the Welsh Local Government Association in the use of the 2010 Act is the lack of power to compel maintenance or repair to ensure structural integrity where a feature has been designated.<sup>636</sup> Use of schedule 3-style mandatory maintenance plans could be used to underpin a power to compel maintenance. As with schedule 3 itself, the appropriate standards could be set by statutory guidance. The maintenance plan could be tailored to the individual tip and include detail as to what work is needed and who is responsible for carrying out the work.

10.76 The Environment (Wales) Act 2016 powers given to NRW to reach land management agreements with landowners also provide a model.<sup>637</sup>

10.77 The maintenance agreements for the tips placed in this category could take a highly prescriptive approach to assist tip owners with low levels of knowledge of tip safety. We noted when considering the regimes for tips associated with operational mines that the regulations were able to adopt an approach which set a high-level duty to ensure safety but left tip operators with a level of discretion as to how to achieve the objective.<sup>638</sup> We do not think that this approach would be appropriate for disused tip owners.

10.78 Maintenance agreements could include, for example: ongoing maintenance duties to check drainage systems at stipulated intervals and after heavy rainfall, to ensure that they are not blocked; duties to maintain and improve drainage systems, or to install and check monitoring equipment. They could also stipulate any remediation works required. Depending on the work required, it might be necessary to provide for the work to be carried out by a suitably qualified engineer (see paragraphs 10.117 to 10.119 below). In this case, the owner could contract with an approved engineer to do the work. This would be the equivalent of the day-to-day role of the supervising engineer in the reservoirs regime. In other cases, at the lower end of the risk spectrum, only basic unskilled maintenance work might be required and the owner could carry out the work themselves. Welsh Ministers could issue a code of practice to

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<sup>636</sup> See para 9.68 above.

<sup>637</sup> See para 9.103 above.

<sup>638</sup> See paras 9.45 and 9.55 above.

provide practical guidance on the use of the agreements and orders to provide an additional level of information and direction.

10.79 The regime would need to impose a duty to inspect the tips at appropriate intervals to ensure compliance. Once again, for the reasons given above at paragraph 10.67, we do not think that it is justified to place this duty of inspection on disused tip owners. The tip management plan kept in the tip register would stipulate the frequency of inspection for the particular tip. Following an inspection, the inspection record would be added to the tip register and in this way would keep the register up to date.

10.80 Compliance with a tip management plan could provide some protection for a tip owner from civil liability, as it would be an indication that the owner had done everything that could reasonably be required of them to prevent harm arising from the tip. This would not avoid liability under the rule in *Rylands v Fletcher*, but, as we saw in chapter 6, the rule has been confined in its application to very limited circumstances, and liability is limited to reasonably foreseeable consequences.<sup>639</sup>

#### **Consultation Question 22.**

10.81 We provisionally propose that an authority should be empowered to enter into a tip maintenance agreement with the owner of land registered in the tip register, providing for the carrying out by the owner of the operations specified in the tip management plan.

Do you agree?

#### **Consultation Question 23.**

10.82 Do you agree that a duty of inspection should fall to an authority to ensure compliance with the tip maintenance agreement?

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<sup>639</sup> See paras 6.10 to 6.12 above.



#### **Consultation Question 24.**

10.83 We provisionally propose that an authority should be able to make a tip maintenance order where

- (1) the owner has failed to comply with an agreement entered into and has been given appropriate notice of that failure and reasonable opportunity to rectify it;
- (2) the owner has been offered an agreement and has refused to enter into an agreement on suitable terms or has failed to respond within 42 days, and the authority think it unlikely that the owner will agree;
- (3) the authority considers the work specified in the order to be urgently necessary; or
- (4) it has been impossible to identify the owner despite having taken specified steps to do so.

10.84 The authority must be satisfied that the measures proposed are proportionate to the objective to be achieved.

10.85 The order must either require the owner to carry out the operations or provide for the authority to carry them out.

10.86 The owner should have a right of appeal against the imposition of a maintenance order.

10.87 Save in the case of an emergency order, the order must provide sufficient time within which to appeal.

Do you agree?

#### **The authority responsible for oversight of tip maintenance agreements**

10.88 Another choice which arises for this lower level category of tip is whether the new supervisory authority takes on responsibility for the oversight of maintenance agreements and orders and the routine inspections, or whether this should remain with the local authorities who have responsibility for disused tips at present. On the one hand, local authorities could be well placed to integrate this work with other duties, such as, for example, drainage and flood risk management, and might have additional capacity if they were relieved of responsibility for designated tips. On the other hand, although the supervisory authority could monitor compliance, local authority responsibility would arguably maintain the tendency of the current structure towards inconsistent application of requirements, and a more fragmented and less cost-effective approach. Depending on how responsibilities were allocated under the new regime, it could require more intensive work in reaching maintenance

agreements, inspecting to ensure compliance, and liaising with and reporting to the supervisory authority.<sup>640</sup>

10.89 The decision as to which body should be responsible for this enhanced maintenance regime will be affected by where the line is drawn between designated and non-designated tips. If the conclusion is that the supervisory authority should be responsible for a larger group of tips, such as those in categories C and D in the interim classification, there would be a smaller and less labour-intensive group of tips left to maintain. It may be within the capacity of the local authorities to take on an enhanced role in respect of this small group. If the supervisory authority were to deal with a smaller group, such as the current category D tips only, the burden on the local authorities of dealing with the remainder might be too great.

10.90 It is important in reaching a decision on how best to structure this work to recall that specialist stakeholders we spoke to consistently stressed that each tip is different and that a broad risk categorisation is not sufficient to determine the work which will be needed to ensure the safety of the tip.<sup>641</sup> The individual tip management plan should determine whether the work is best allocated to the enhanced regime for designated tips, or left to the lower level regime of maintenance agreements.

10.91 We were warned by stakeholders, particularly the Welsh Local Government Association, who drew on experience of operating flood management legislation, that a system which imposes a maintenance requirement on private landowners will need to be accompanied by a rigorous system of inspections. These must be sufficiently frequent to ensure that intervention is at an early stage. This is very costly. One of the lessons drawn from the operation of the 1969 Act machinery is that the system of notices and counter-notices is a time-consuming and cumbersome system to operate when safety works are needed. It is important not to replicate this in the design of a new system.<sup>642</sup>

10.92 One possibility could be that, where the cost to the authority of securing an agreed approach is greater than undertaking the maintenance work themselves, it would be better to place a tip in the designated category. The possibility of designation, with possible additional cost to the owner, could operate as an incentive to comply with a maintenance agreement.

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<sup>640</sup> See ch 7 for a discussion of the problems experienced by local authorities in the exercise of their powers under the Mines and Quarries (Tips) Act 1969.

<sup>641</sup> See ch 7.

<sup>642</sup> See paras 7.12 and 7.13 above.

### Consultation Question 25.

- 10.93 Do you think that responsibility for tip maintenance agreements for lower risk tips should fall to the supervisory authority or lie with local authorities?
- 10.94 If you think that responsibility should lie with the local authority, should this include both making and supervising the agreements, or should the supervisory authority be given the duty to make the agreement?

## ENFORCEMENT POWERS

- 10.95 In order to ensure that the regulatory regime we have proposed is effective, the authority tasked with its enforcement will require adequate ancillary powers. Currently, under Part 2 of the Mines and Quarries (Tips) Act 1969, local authorities have powers (a) to require information from tip owners and others and (b) to enter upon land to carry out exploratory tests, remedial operations and works of reinstatement.<sup>643</sup> Failure to provide information and obstruction of a person entitled to enter upon land under these provisions are criminal offences, as are obstructing the tests and works or damaging or interfering with works.<sup>644</sup>
- 10.96 We provisionally propose that there should be a wider power of entry onto land containing a registered or suspected disused coal tip for prescribed purposes. These purposes would need to include investigation, maintenance and repair. Apart from the 1969 Act itself, the legislation reviewed in chapter 9 offers possible models: the power of entry in the non-native species regime provided by schedule 9A to the Wildlife and Countryside Act 1981; and the power of entry in the provisions for designation of a structure or feature in schedule 1 to the Flood and Water Management Act 2010.<sup>645</sup> Similarly, section 64 of the Land Drainage Act 1991 gives a general power of entry to exercise any functions under the Act, subject, save in an emergency, to giving notice of intended entry. Intentional obstruction of entry is a summary offence punishable by a fine.<sup>646</sup>
- 10.97 Procedural guarantees such as the requirement to give advance notice of entry provide a balance between the public interest and the rights of the landowner. The authority would need to provide written authorisation for persons to enter, save in stipulated situations where a warrant would be required; these would include where,

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<sup>643</sup> Mines and Quarries (Tips) Act 1969, ss 12, 13, 17 and 18. These powers are limited to cases where a tip is known or suspected to be unstable.

<sup>644</sup> Mines and Quarries (Tips) Act 1969, ss 12(2), 13(6), 18(6) and 26.

<sup>645</sup> See paras 9.67 and 9.100 above. Sch 9A(23) to the Wildlife and Countryside Act 1981 provides a power of entry, at a reasonable time and upon notice, which must be exercised for the purposes specified, including to decide whether to offer a species control agreement, to make a species control order, and to investigate non-compliance. Sch 1 to the Flood and Water Management Act 2010 provides a power of entry, at a reasonable time and upon notice, to investigate whether a structure requires designation, to determine whether there have been alterations to the structure without consent, and to investigate compliance with an enforcement notice.

<sup>646</sup> See para 9.78 above.

following service of the notice, the owner refuses entry. A power of entry without notice would be required in the event of an emergency. A power for the authorised person to enter with other persons, machinery, equipment and other material, and to take samples, would also be required.

10.98 The 1969 Act, the non-native species and the schedule 1 regimes also offer models for the creation of offences of non-compliance. The 1969 Act and the non-native species provisions make it a criminal offence to fail to comply with an order or intentionally to obstruct of an operation. Where an enforcement notice has been served under schedule 1 to the 2010 Act following the designation of structure or feature, non-compliance with the notice is a criminal offence.<sup>647</sup>

10.99 We do not propose that non-compliance with a tip maintenance agreement should itself be an offence. The sanction for non-compliance with an agreement would be its replacement by a tip maintenance order, breach of which (without reasonable excuse) would be an offence.

#### **Consultation Question 26.**

10.100 We provisionally propose that

- (1) persons authorised in writing by the supervisory authority or any other public body charged with functions under the coal tip safety scheme should have a power of entry upon land for the purposes of
  - (a) inspecting or carrying out tests upon a known or suspected coal tip; and
  - (b) performing, supervising or inspecting works of maintenance or remedial operations upon a coal tip;
- (2) the power of entry should be exercisable upon 48 hours' written notice to the owner and any other person known to be in occupation of the land or in an emergency;
- (3) the supervisory authority or any other public body charged with functions under the coal tip safety scheme should have power to apply to a justice of the peace authorising entry by force;
- (4) persons authorised to enter land under these provisions should have power to take with them other persons or equipment as necessary; and
- (5) obstruction of any authorised person or of an inspection, test or works should be a summary offence.

Do you agree?

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<sup>647</sup> See 9.67 and 9.92 above.

### Consultation Question 27.

10.101 We provisionally propose that failure, without reasonable excuse, to comply with a tip maintenance order should be a summary offence.

Do you agree?

## CHARGING POWERS

10.102 The question of the extent to which the cost of operations on coal tips should fall on private parties or on the public purse is outside our terms of reference. The regime currently in place under Part 2 of the Mines and Quarries (Tips) Act 1969 places primary financial responsibility for addressing the consequences of tip instability with the owner as defined in section 36. This is subject to claims for contribution against others under sections 19 and 21 and the power of the Welsh Ministers under section 25 to make grants to fund remedial operations carried out by local authorities. As we indicated in chapter 3, public funds have at times been available for regeneration, but only under particular schemes.

10.103 Local authorities have told us that they have often found it difficult to recoup funds from owners.<sup>648</sup> In addition, there is a gap in the provisions, in that there is no power to charge for maintenance work or for exploratory tests which do not lead to remedial works being carried out.<sup>649</sup> The practical point has been made to us that it can be more cost-effective for a public body to carry out preventive maintenance work upon tips than to check up on and enforce its carrying out by a landowner.

10.104 One possible approach in such cases could be to follow the reservoirs model by imposing a fee on the owner of a tip at the time of registration, and an increased annual fee on the owner of a designated tip. This could be calculated at a level to cover the cost of inspections. It may be that, as suggested by our discussion of the reservoirs scheme in the previous chapter at paragraph 9.28, additional powers to shape the charging structure more closely to the nature of the work required would work better than a fixed annual fee. In this way, individual agreements could be reached with tip owners as to the charge to be made for the works. Conversely, some categories of work might be carried out at public expense.

10.105 These policy choices are a matter for the Welsh Government, and not for us. But the proposed regulatory framework will need a general power to charge to enable these choices to be made. We discuss appeals and claims for compensation or contribution in the next section of this chapter.

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<sup>648</sup> Paras 4.51 to 4.57 above set out the provisions which allow expenses to be claimed from a tip owner, contribution orders made against other parties, and applications for compensation by the tip owner. See paras 7.12 to 7.13 above for the experience of local authorities in operating the charging provisions in the 1969 Act.

<sup>649</sup> See paras 7.17 and 7.24 above.

### **Consultation Question 28.**

10.106 We provisionally propose that the supervisory authority and any other public bodies having functions under the coal tip safety scheme should have a general power to charge fees and expenses to the owner of land containing a tip, which could include periodic charges.

Do you agree?

## **APPEALS AND CLAIMS FOR COMPENSATION OR CONTRIBUTION**

10.107 The 1969 Act creates rights of appeal to the county court or the High Court in respect of notices to carry out works under section 14 and of claims of expenses by a local authority under section 23. It also contains a somewhat complicated web of rights to compensation and rights of contribution at sections 19 to 24. These provisions are described in chapter 4.

10.108 These provisions strike us as cumbersome, with the possibility of multiple applications to the court. We are unsure of the extent to which there remains a need for them in the light of our proposed revised definition of an owner and the fact that tipping of colliery spoil is now almost entirely a thing of the past. We welcome views on this and invite consultees to share with us any knowledge or experience they have of the various types of application or appeal that can be made under Part 2 of the 1969 Act.

10.109 If a contribution mechanism is retained, the categories of contributor in section 19(1) of the 1969 Act and the list of factors to be taken into account under section 19(4) seem to us to remain broadly appropriate, but we welcome views on this.<sup>650</sup> A single application to a court or tribunal, to resolve issues both of liability to contribute and the amount of the contribution seems preferable in principle to the successive applications that can arise under Part 2, but the current system gives owners a measure of certainty, before they undertake works, as to their ability to recover a contribution.

10.110 A further issue relates to the appropriate body to hear applications and appeals under a new scheme. These potentially fall into two categories: proceedings between private parties, such as applications for compensation or contribution, and proceedings between a private party, usually the “owner” of a tip (as defined) and an authority. In the second category we provisionally envisage: appeals against the registration of land as a tip or of a particular individual as the owner; appeals against the designation of a tip as higher risk; and appeals against a tip maintenance order.

10.111 Currently, “the court” for the purposes of Part 2 of the 1969 Act means the High Court or county court. In chapter 9 we described three existing models for appeal rights arising in relation to reservoir designation, maintenance plans made under schedule 3 to the Flood and Water Management Act 2010 and non-native species control orders.

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<sup>650</sup> The categories in s 19(1) are set out at para 4.54 above. The list of factors to be taken into account provided by s 19(4) are summarised at para 4.55 above.

Coal tip legislation could similarly provide for applications and appeals to be made to the Welsh Ministers and remitted to an appointed person, as in the case of reservoir designation.<sup>651</sup> Alternatively, appeals could be directed to the Planning Inspectorate, as in the case of schedule 3 maintenance plans<sup>652</sup> or to the First-tier Tribunal General Regulatory Chamber (Environment), as in the case of species control orders.<sup>653</sup>

10.112 Other possible appellate bodies are: the Upper Tribunal (Lands Chamber); an existing devolved tribunal such as the Residential Property Tribunal for Wales, Agricultural Land Tribunal for Wales or Valuation Tribunal for Wales; or a new devolved tribunal.<sup>654</sup>

10.113 Deciding the precise appeal mechanism is outside the scope of the project, and should be left to the Welsh Government to develop. We suggest, however, that as grounds of appeal may require distinct areas of expertise, for example in relation to ownership and identification of an area as a tip, it will be important to provide for the appeal to be heard by a person with appropriate expertise.

10.114 We welcome views on the most appropriate appeal mechanism for the purpose of assisting the Welsh Government to develop its policy.

#### **Consultation Question 29.**

10.115 Is it appropriate for legislation underpinning a new coal tip safety regime to include

- (1) a power to sell material not belonging to the owner of a coal tip that is removed from a tip in the course of remedial work on the tip; if so, should it be accompanied by a duty to account to the owner for the proceeds of sale?
- (2) provision for compensation where an order to carry out remedial works is revoked?
- (3) a duty to compensate persons other than the owner of a tip for damage to or disturbance of enjoyment of land in consequence of tests or remedial operations?
- (4) provision for the discretionary award of financial contributions to the liability of an owner? If so, should the categories of person liable be as set out in section 19(1) of the Mines and Quarries (Tips) Act 1969 and the circumstances to be taken into consideration be as set out in section 19(4) of the Act? If they should not be, what alternative provision should be made?

10.116 Elements of the proposed regulatory framework discussed so far are set out in the following diagram.

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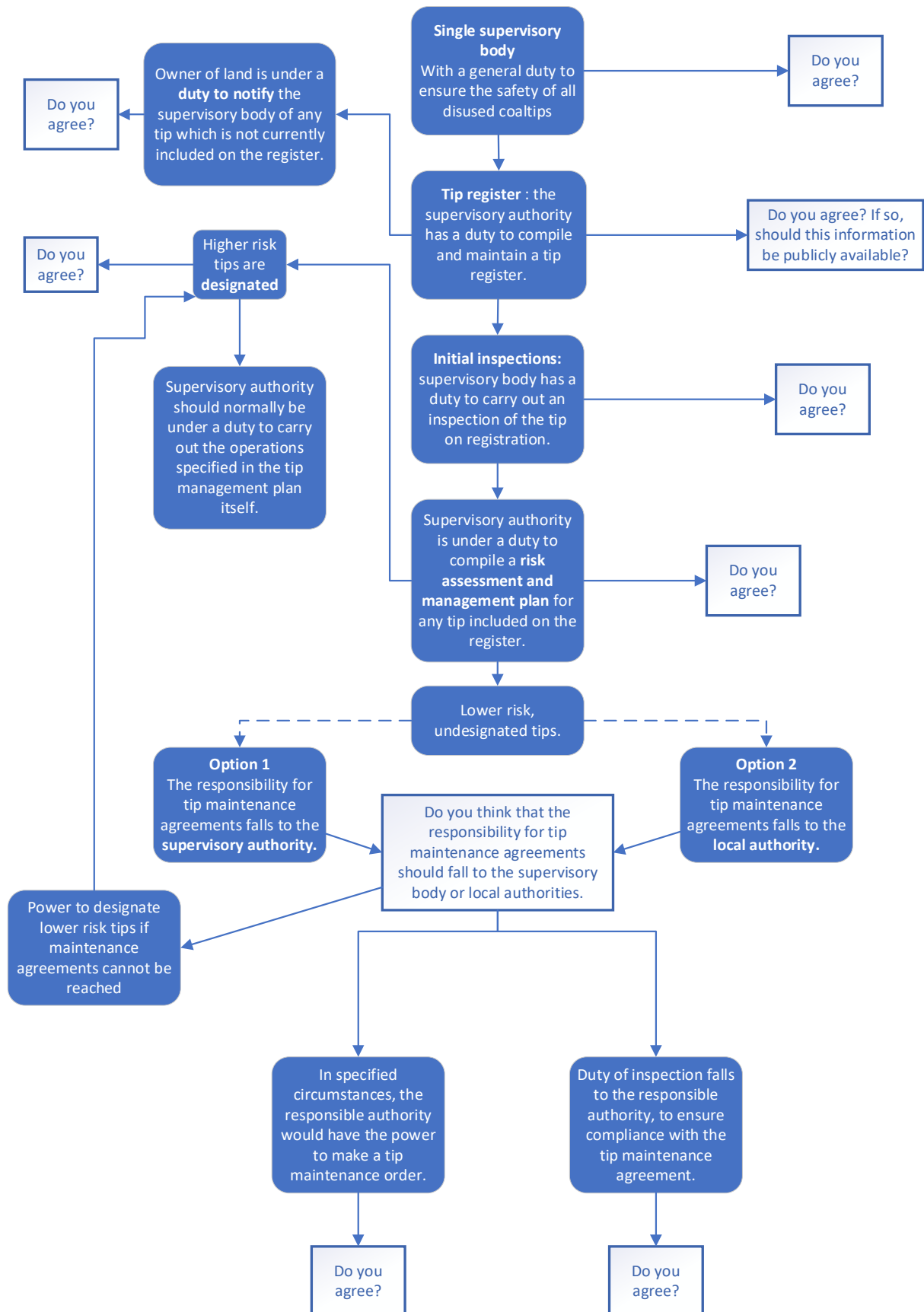
<sup>651</sup> See para 9.15 above.

<sup>652</sup> See para 9.77 above.

<sup>653</sup> See para 9.92 above.

<sup>654</sup> For more information about the Residential Property Tribunal for Wales, Agricultural Land Tribunal for Wales and Valuation Tribunal for Wales, and our provisional proposals in relation to a tribunal system for Wales, see Devolved Tribunals in Wales (2020) Law Commission Consultation Paper No 251.

## DIAGRAM TO REPRESENT ELEMENTS OF OUR PROPOSED REGULATORY FRAMEWORK





## PANEL OF ENGINEERS

10.117 In addition to the elements we have outlined above, we provisionally consider that an approved panel of engineers with specialist qualifications to inspect coal tips and supervise operations upon them is a good way to ensure both consistency and safety. As with the reservoirs model, the Institution of Civil Engineers could take on the role of professional accreditation, with recommendations made to Welsh Ministers for approval.

10.118 In the case of a public authority with a duty to inspect and maintain tips, it would be straightforward to ensure that the engineers employed to carry out this work were from a panel approved at an appropriate level. This is also likely to be straightforward in the case of tip owners such as local authorities, NRW and the Coal Authority operating a maintenance plan for their own tips. It is less straightforward for private tip owners charged with implementing a tip maintenance agreement who would be under an obligation to employ an engineer from the panel for certain types of work.<sup>655</sup> One of the problems encountered by local authorities in the operation of the 1969 Act is the occurrence of disputes with tip owners over the need for works to ensure stability. A panel of engineers might add to the expense of carrying out tip maintenance work, but could help to ensure a consistent approach.

10.119 As discussed at paragraph 9.32 above, the need for a specialist panel of engineers was appreciated by the Aberfan Disaster Tribunal in 1966, at a time when there was still an active mining industry and fewer disused tips. The argument in favour of a panel appears even stronger in light of the loss of mining specialism and the decline of the industry since that time.

### Consultation Question 30.

10.120 Do you think that a panel of engineers with specialist qualifications to inspect and supervise prescribed types of work on coal tips is a good way to ensure consistency and safety?

## CLASHES BETWEEN ENVIRONMENTAL LEGISLATION AND TIP SAFETY

10.121 The Environmental Permitting Regulations (EPR) were not designed to deal with a major disaster. The provision for emergencies in regulation 40 of the EPR is aimed at events in the immediate aftermath of a minor failure.<sup>656</sup> Equally, the 1969 Act did not contemplate a time when almost all tips were disused and was not designed to interact with environmental protection legislation. The reality is that clean-up work following a tip slide will take a long time, and will progress through stages of recovery and remediation. A more efficient regulatory framework will help to ensure that tip emergencies do not occur, but it is still important that the law should not act as a barrier to a solution if such an event does occur. For this reason, it is important that there are legal solutions for the disposal of tip material if it slides or is otherwise

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<sup>655</sup> See para 10.63 above.

<sup>656</sup> See para 5.20 above.

displaced. There are also non-urgent instances when environmental legislation clashes with tip maintenance, as in the case of the attenuation ponds described in paragraphs 7.32 to 7.34 above.

10.122 We do not think that an outright exemption for tip material from environmental legislation is the answer. This would be significant erosion of important environmental protection. An awareness at the time of an emergency response that it will eventually be necessary to seek the necessary permits and planning permission for solutions can act as a useful discipline.

### **A power of direction?**

10.123 We think that part of the answer in legislative terms may be to provide a power drafted along the lines of Civil Contingency Act powers to permit Welsh Ministers to give directions to require a Category 1 responder to perform a function to control, mitigate or respond to a coal tip emergency or threatened emergency.<sup>657</sup> The definition of a Category 1 responder would need to be extended for these purposes to include the new supervisory authority. The provision could enable action to avoid danger to human health and safety while also requiring consideration of the need to minimise harm to the environment. Directions could require the authority to give an undertaking to seek the necessary permits and planning permission when this becomes feasible. This would provide sufficient flexibility to ensure that the actions taken at the time of the emergency are lawful.

#### **Consultation Question 31.**

10.124 Do you think that the Welsh Ministers should be able to give directions to the supervisory authority and other relevant parties regarding actions to be taken in response to a coal tip emergency?

### **A wider emergency power under the Environmental Permitting Regulations**

10.125 We also think that it would assist to amend the emergency powers regulation in the EPR to ensure that not only the immediate emergency response but, where appropriate, short to mid-term actions taken are not in breach of the regulations. At present, Regulation 40(1) provides for an authority to take action in an emergency to avoid danger to human health, where all reasonable steps have been taken to minimise pollution and the regulator is informed promptly. The regulation could provide in addition for the authority to be protected in the aftermath of an emergency, until such time as it is feasible to apply for the appropriate permits to cover the longer-term solution. This could provide protection unless it could be shown that those acting were aware of the risk of environmental harm and failed to take reasonable precautions.<sup>658</sup>

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<sup>657</sup> See paras 5.41 to 5.45 above.

<sup>658</sup> S 4 of the Wildlife and Countryside Act 1981 provides a defence to offences of killing or injuring a wild bird where the action in question was necessary for public health and safety and there was no other satisfactory solution. Application of the defence is restricted to activities taken in circumstances where the defendant did

### Consultation Question 32.

10.126 Do you think that the power of the supervisory authority to take action in an emergency pursuant to regulation 40 of the Environmental Permitting Regulations (England and Wales) 2016 should be widened? If so, in what way?

### A more collaborative approach

10.127 Alongside legislative changes, the Welsh Government is drawing up a Protocol to ensure that the authorities involved in an emergency involving a coal tip are able to coordinate their response, to agree the best approach in the circumstances and to keep an audit trail of their actions. Guidance supporting a more collaborative and pragmatic approach will help to ensure that all parties consider the possibilities, and weigh the public safety and environmental harms of each course. Acting in pursuance of relevant guidance would be a relevant consideration in considering whether the steps taken by an authority to avert environmental harm were reasonable.

### Contingency infrastructure

10.128 Stakeholders have also suggested that contingency planning should include the need for contingency infrastructure to allow tip material to be stored in the event of a slide. These could be provided in areas with a high density of tips. The volume of material, as in the case of the Tylorstown slip, can be immense, and in practice it is unlikely that this could be the solution in every case, but it could contribute to a solution in some cases.<sup>659</sup>

### A greater range of disposal options for displaced coal tip waste?

10.129 Once the authority is in a position to seek consents for a longer-term solution to the disposal of the material, it may remain very difficult to find a solution for the disposal of such large volumes of material. This is illustrated by the retrospective planning applications made by the local authority following the slide at Tylorstown. The existing regulations may require the transport of the material over such large distances that the cost and environmental impact of transporting it is unreasonable.

10.130 This suggests that the EPR themselves may need amendment to allow bespoke storage solutions for tip material. For example, stakeholders suggested to us that there may be ways of defining the material as engineering material rather than as waste without requiring a process that constitutes treatment and thus requires a permit. It may be possible to do this at the level of guidance.<sup>660</sup> Advance planning by

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not have the time to apply for a licence or wait for the licence application to be determined, and retrospective notification is given to the relevant licensing authority as soon as reasonably practicable after the action, thus ensuring a measure of supervision. The approach is discussed in the Law Commission's report on Wildlife Law, Volume One (2015) Law Com No 362, paras 7.159 to 7.169.

<sup>659</sup> Meeting with Natural Resources Wales.

<sup>660</sup> See for example the Environment Agency, *Position Statement, Regulatory Framework for the implementation of the Mining Waste Directive* (2010), [https://webarchive.nationalarchives.gov.uk/20140328135419/http://www.environment-agency.gov.uk/static/documents/Research/PS019-MWD\\_Regulatory\\_Framework.pdf](https://webarchive.nationalarchives.gov.uk/20140328135419/http://www.environment-agency.gov.uk/static/documents/Research/PS019-MWD_Regulatory_Framework.pdf) (last visited 17 March

the authorities involved in decision-making around the disposal of tip material could also help to provide solutions which could be drawn upon in the event of an emergency. We think that it is beyond the scope of the present project to consider the form that these changes could take. The work could run alongside consideration of improved technical solutions.

### **Consultation Question 33.**

10.131 Do you suggest any other approaches to deal with clashes between environmental legislation and tip safety? If so, please set them out.

## **RECLAMATION PROJECTS**

10.132 It seems likely that, to reduce the risk of slides in extreme weather conditions of the sort that have been encountered recently, some of the coal tips in Wales, particularly those which fall into the “designated tips” category discussed above, will require not merely improved maintenance but engineering work. Stakeholders have also suggested that, with the heightened risk of coal tip drainage failure created by climate change, effectively hastening the end of their design life, the time is ripe for a fresh round of reclamation projects.

10.133 Reclamation differs from remediation alone in that an additional objective of the work is to bring the tip back into a specified beneficial use. We described in chapter 3 the extensive reclamation work conducted by the Welsh Development Agency until its demise in 2012. We also saw in the previous chapter that a helpful standard for reclamation is that set in the United States by the Surface Mining Control and Reclamation Act 1977 as requiring the restoration of former mining sites to “a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses”.

10.134 It might be possible to combine our proposed enhanced regime for higher risk tips with a longer-term strategic development approach to identify tips for larger capital projects. The process of tip designation we have outlined above could include consideration of their suitability for a larger remediation or reclamation project. The Australian models we considered illustrate the role for a wider regional rehabilitation strategy, and for an expert advisory panel.

10.135 One vehicle which could be used for this would be a corporate joint committee set up under the Local Government and Elections (Wales) Act 2021. As discussed in chapter 7, and mentioned above, this permits a corporate joint committee to be established broadly for any public sector function, including economic well-being.<sup>661</sup> Local authorities can work jointly to apply for the establishment of a corporate joint committee in relation to any of their functions. The Welsh Government can also set up

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2021). This was noted at para 3.6 above when we explained that the material produced by open cast mines is not treated as extractive waste for which a permit is required under the Environmental Permitting Regulations where the material is to be returned to the mining void.

<sup>661</sup> See paras 7.51 and 10.26 above.

such a committee in order to perform, for example, an economic well-being function.<sup>662</sup>

10.136 This approach would allow the development in effect of a Centre of Excellence for tip reclamation. Sustainable development principles under the Well-being of Future Generations (Wales) Act 2015 and Environment (Wales) Act 2016 could guide policy choices around tips. These principles include the need to consider the long-term public good. Expert stakeholders described to us the success of the Welsh Development Agency in reclaiming tips where there was economic value in the land, and that one of the difficulties with reclamation today was that the remaining tips are those with lower development value. The experience of the contaminated land regime shows that it is preferable to adopt an approach to remediation which puts the cost of remediation on those who will derive value from the remediation work.<sup>663</sup> The sustainable development principles can work to re-shape concepts of economic value in the context of the climate crisis. As we discussed earlier in this paper, one option would be to use reclaimed tips for carbon capture or for the protection of biodiversity.<sup>664</sup>

10.137 Traditionally, reclamation projects have relied on compulsory purchase of sites for remediation. A useful model for coal tips can be found in the compulsory purchase powers provided by the Coal Industry Act 1994 for the control of the discharge of water from mines.<sup>665</sup> An alternative might be to apply a licensing model. The Open Cast Mining Act 1958, for example, permitted open cast coal mining operations only where an authorisation had been granted for the purpose. Similarly, under the Coal Industry Act 1994 the Coal Authority retains ownership of unworked coal but grants licenses for coal mining operations. The land on which the coal tip is situated could be licensed to the supervisory authority for the period within which the works are carried out, while ownership is retained by the landowner.

10.138 An existing model illustrating alternatives to compulsory purchase can be found in recent metal mine site remediation. NRW provided us with the example of the Frongoch lead mine in mid-Wales. The site is one of the most polluting abandoned mine sites in Wales. The remediation project re-profiled and capped a large area of mine waste. Drainage channels conveyed clean run-off into a series of ponds and created a new wetland habitat. The first step in remediating the site involved diverting a stream around the site. The landowner granted the authority a licence to carry out the work during a fixed period in return for a nominal consideration. The re-profiling and capping works were completed by way of Deed of Grant with the landowner and a later Maintenance Access Period. The agreement also included rights and covenants to prevent damage to the constructed features in perpetuity. NRW made a single payment to the landowner for this phase of the works. The agreements with landowners in this instance were reached on a voluntary basis, but the powers under

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<sup>662</sup> See Local Government and Elections (Wales) Act 2021, pt V.

<sup>663</sup> See para 5.37 above.

<sup>664</sup> See para 7.61 above.

<sup>665</sup> See para 9.104 above.

section 16 of the Environment (Wales) Act 2016 to make land management agreements would also now be available.<sup>666</sup>

10.139 These suggestions extend beyond our terms of reference, but we think their inclusion reflects stakeholder concerns, helps to future-proof the regulatory framework, and is in keeping with the wider norms governing environmental policy making in Wales.

**Consultation Question 34.**

10.140 Do you think that new tip safety legislation should be combined with provision for the consideration of tip reclamation? If so, do you favour any particular model?

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<sup>666</sup> Robert Vaughan, Natural Resources Wales and see P Edwards, T Williams, P Stanley, *Surface water management and encapsulation of mine waste to reduce water pollution from Frongoch Mine, Mid-Wales* (2016), [https://www.imwa.info/docs/imwa\\_2016/IMWA2016\\_Edwards\\_46.pdf](https://www.imwa.info/docs/imwa_2016/IMWA2016_Edwards_46.pdf) (last visited 17 March 2021). See para 9.103 above for powers to reach a land management agreement under the Environment (Wales) Act 2016.

## Chapter 11: Consultation Questions

### Consultation Question 1.

11.1 We provisionally propose that the existing regulatory regime for tips associated with operational mines should not be altered.

Do you agree?

**Paragraph 10.6**

### Consultation Question 2.

11.2 We seek views on whether a satisfactory definition of a disused coal tip could refer to waste from coal mining and whether it should include express reference to overburden dumps, backfill, spoil heaps, stock piles and lagoons.

**Paragraph 10.12**

### Consultation Question 3.

11.3 We provisionally propose that any new legislation should not apply to a tip to which the Quarries Regulations 1999 or the Mines Regulations 2014 apply.

Do you agree?

**Paragraph 10.13**

### Consultation Question 4.

11.4 To the extent that liability under the new regulatory framework rests with the owner of land containing a tip, we provisionally propose that the owner should be defined as the freeholder or a leaseholder under a lease of 21 or more years, except where their interest is in reversion upon a term of 21 or more years.

Do you agree?

**Paragraph 10.19**

**Consultation Question 5.**

11.5 We provisionally propose that a supervisory authority with responsibility for the safety of all disused coal tips should be established.

Do you agree? If not, please set out the alternative that you would favour.

**Paragraph 10.23**

**Consultation Question 6.**

11.6 We seek views on whether the supervisory authority should be an existing body or a newly created body.

**Paragraph 10.25**

**Consultation Question 7.**

11.7 If a new body is established, what form should the new body take? Should it be, for example, a central public body, a corporate joint committee of local authorities under the Local Government and Planning (Wales) Act 2021, or something else?

**Paragraph 10.26**

**Consultation Question 8.**

11.8 We provisionally propose that the supervisory authority's duty to ensure the safety of tips should be framed as a general one, rather than one limited to specified risks.

Do you agree?

**Paragraph 10.27**



**Consultation Question 9.**

11.9 We provisionally propose that a central tip register should be compiled and maintained.

Do you agree?

**Paragraph 10.29**

**Consultation Question 10.**

11.10 We provisionally propose that the contents of the tip register should be prescribed by the Welsh Ministers by statutory instrument.

Do you agree?

**Paragraph 10.30**

**Consultation Question 11.**

11.11 We provisionally consider that

- (1) the supervisory authority should have a duty and a power to include on the register any tip of which it is or becomes aware; and
- (2) an owner of land should have a right of appeal against the inclusion of the landowner as owner of land on which a tip is situated; the grounds of appeal should be (a) that the land owner is not the owner of the land in question and/or (b) that there is no tip situated on the land.

Do you agree?

**Paragraph 10.36**

**Consultation Question 12.**

11.12 We seek views on whether an owner of land should be under a duty to notify the supervisory authority of any tip of which the landowner is or becomes aware situated on land owned by the landowner, unless the landowner has reason to believe that it has already been registered.

**Paragraph 10.37**

**Consultation Question 13.**

11.13 Do you think that the information in a tip register should or should not be publicly accessible? Are there any particular categories of information that should not be published?

**Paragraph 10.41**

**Consultation Question 14.**

11.14 We provisionally propose that, upon the entry of a tip onto the register, the supervisory authority should be under a duty to arrange an inspection of the tip unless it considers that a sufficiently recent and thorough inspection has been conducted.

Do you agree?

**Paragraph 10.43**

**Consultation Question 15.**

11.15 We provisionally propose that

- (1) the supervisory authority should be under a duty to arrange for the compilation of a risk assessment and management plan for any tip included on the register; and
- (2) the Welsh Ministers should have power to prescribe the matters to be included in a risk assessment and management plan by statutory instrument.

Do you agree?

**Paragraph 10.49**

**Consultation Question 16.**

11.16 We provisionally propose that the risk classification of coal tips should have regard to the risk of instability of a tip and the consequences of a slide of spoil.

Do you agree?

**Paragraph 10.52**

**Consultation Question 17.**

11.17 Should coal tip classification also have regard to the risk the tip presents of pollution, combustion or flooding?

**Paragraph 10.53**

**Consultation Question 18.**

11.18 We provisionally propose that the coal tips safety legislation should provide for the designation of a coal tip by the safety authority as “higher risk” where the tip meets criteria prescribed by the Welsh Ministers by statutory instrument.

Do you agree?

**Paragraph 10.59**

**Consultation Question 19.**

11.19 We seek views on whether the designation of a tip should be by reference to any of the following, or other, criteria:

- (1) the tip shows signs or has a recent history of movement or instability;
- (2) a slide of spoil from the tip would be likely to impact or affect
  - (a) buildings or areas designed for human habitation or occupation;
  - (b) a road, railway, canal or other infrastructure; or
  - (c) a watercourse;
- (3) there is a substantial risk of the tip releasing dangerous pollution into the environment;
- (4) there is a substantial risk of the tip causing flooding;
- (5) there is a substantial risk of material in the tip spontaneously igniting;
- (6) the tip requires engineering work.

**Paragraph 10.60**

**Consultation Question 20.**

11.20 We provisionally propose that a person aggrieved by a designation of a coal tip as higher risk should have a right of appeal.

Do you agree?

**Paragraph 10.61**

**Consultation Question 21.**

11.21 We provisionally propose that in the case of a designated tip the supervisory authority itself should normally be under a duty to carry out the operations specified in the tip management plan for the tip.

Do you agree?

**Paragraph 10.69**

**Consultation Question 22.**

11.22 We provisionally propose that an authority should be empowered to enter into a tip maintenance agreement with the owner of land registered in the tip register, providing for the carrying out by the owner of the operations specified in the tip management plan.

Do you agree?

**Paragraph 10.81**

**Consultation Question 23.**

11.23 Do you agree that a duty of inspection should fall to an authority to ensure compliance with the tip maintenance agreement?

**Paragraph 10.82**

#### **Consultation Question 24.**

11.24 We provisionally propose that an authority should be able to make a tip maintenance order where

- (1) the owner has failed to comply with an agreement entered into and has been given appropriate notice of that failure and reasonable opportunity to rectify it;
- (2) the owner has been offered an agreement and has refused to enter into an agreement on suitable terms or has failed to respond within 42 days, and the authority think it unlikely that the owner will agree;
- (3) the authority considers the work specified in the order to be urgently necessary; or
- (4) it has been impossible to identify the owner despite having taken specified steps to do so.

11.25 The authority must be satisfied that the measures proposed are proportionate to the objective to be achieved.

11.26 The order must either require the owner to carry out the operations or provide for the authority to carry them out.

11.27 The owner should have a right of appeal against the imposition of a maintenance order.

11.28 Save in the case of an emergency order, the order must provide sufficient time within which to appeal.

Do you agree?

**Paragraph 10.83**

#### **Consultation Question 25.**

11.29 Do you think that responsibility for tip maintenance agreements for lower risk tips should fall to the supervisory authority or lie with local authorities?

11.30 If you think that responsibility should lie with the local authority, should this include both making and supervising the agreements, or should the supervisory authority be given the duty to make the agreement?

**Paragraph 10.93**

**Consultation Question 26.**

11.31 We provisionally propose that

- (1) persons authorised in writing by the supervisory authority or any other public body charged with functions under the coal tip safety scheme should have a power of entry upon land for the purposes of
  - (a) inspecting or carrying out tests upon a known or suspected coal tip; and
  - (b) performing, supervising or inspecting works of maintenance or remedial operations upon a coal tip;
- (2) the power of entry should be exercisable upon 48 hours' written notice to the owner and any other person known to be in occupation of the land or in an emergency;
- (3) the supervisory authority or any other public body charged with functions under the coal tip safety scheme should have power to apply to a justice of the peace authorising entry by force;
- (4) persons authorised to enter land under these provisions should have power to take with them other persons or equipment as necessary; and
- (5) obstruction of any authorised person or of an inspection, test or works should be a summary offence.

Do you agree?

**Paragraph 10.100**

**Consultation Question 27.**

11.32 We provisionally propose that failure, without reasonable excuse, to comply with a tip maintenance order should be a summary offence.

Do you agree?

**Paragraph 10.101**

**Consultation Question 28.**

11.33 We provisionally propose that the supervisory authority and any other public bodies having functions under the coal tip safety scheme should have a general power to charge fees and expenses to the owner of land containing a tip, which could include periodic charges.

Do you agree?

**Paragraph 10.106**

**Consultation Question 29.**

11.34 Is it appropriate for legislation underpinning a new coal tip safety regime to include

- (1) a power to sell material not belonging to the owner of a coal tip that is removed from a tip in the course of remedial work on the tip; if so, should it be accompanied by a duty to account to the owner for the proceeds of sale?
- (2) provision for compensation where an order to carry out remedial works is revoked?
- (3) a duty to compensate persons other than the owner of a tip for damage to or disturbance of enjoyment of land in consequence of tests or remedial operations?
- (4) provision for the discretionary award of financial contributions to the liability of an owner? If so, should the categories of person liable be as set out in section 19(1) of the Mines and Quarries (Tips) Act 1969 and the circumstances to be taken into consideration be as set out in section 19(4) of the Act? If they should not be, what alternative provision should be made?

**Paragraph 10.115**

**Consultation Question 30.**

11.35 Do you think that a panel of engineers with specialist qualifications to inspect and supervise prescribed types of work on coal tips is a good way to ensure consistency and safety?

**Paragraph 10.120**

**Consultation Question 31.**

11.36 Do you think that the Welsh Ministers should be able to give directions to the supervisory authority and other relevant parties regarding actions to be taken in response to a coal tip emergency?

**Paragraph 10.124**

**Consultation Question 32.**

11.37 Do you think that the power of the supervisory authority to take action in an emergency pursuant to regulation 40 of the Environmental Permitting Regulations (England and Wales) 2016 should be widened? If so, in what way?

**Paragraph 10.126**

**Consultation Question 33.**

11.38 Do you suggest any other approaches to deal with clashes between environmental legislation and tip safety? If so, please set them out.

**Paragraph 10.131**

**Consultation Question 34.**

11.39 Do you think that new tip safety legislation should be combined with provision for the consideration of tip reclamation? If so, do you favour any particular model?

**Paragraph 10.140**



## Appendix 1: Acknowledgements

- 1.1 We would like to thank the following organisations, groups and people who have met with us or helped us during the course of the pre-consultation phase of the project. We would also like to thank Lori Frater, Llyr Jones, Sam Deeley and the Coal Tip Safety team at the Department for the Environment and Rural Affairs, Welsh Government, as well as the Task Force Partnership and Technical Groups.

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Edwards, Paul	Natural Resources Wales

Stakeholder	Organisation
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Lee, Professor Robert and students: Adele Mullerova Annabel Taylor Ebrar Reis Wing Lui	Member of Welsh Government Expert Group on Coal Tip Safety and Director of the Centre for Professional Legal Education and Research, Birmingham Law School, University of Birmingham

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Tunstall, Roger	Legal Services, Natural Resources Wales
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Stakeholder	Organisation
Waters, Roger	Service Director, Frontline Services, Rhondda Cynon Taf County Borough Council
Whelan, Chris	Department for Business, Energy and Industrial Strategy
Williams, Huw	Chief Legal Advisor to the Senedd
Woodier, James	Assistant Engineer, Flood Risk Management, Monmouthshire Council

## Appendix 2: Photographs

These photographs feature three coal tips in Rhondda Cynon Taf: the National Colliery tip at Wattstown, the Tylorstown tip that slid in February 2020 and the nearby tip nicknamed “Old Smokey” because of spontaneous combustion that lasted for several years. They illustrate past and more recent works of remediation and maintenance and the effect of the Tylorstown slide.<sup>667</sup>

### NATIONAL TIP

#### Berm and batter profile

The National tip was associated with the National Colliery in Wattstown. The tip underwent significant remediation and reprofiling, creating a “berm and batter” profile, and installing a large drainage channel, with transverse drainage channels feeding it along the bottom of each berm. Historical and present-day photos of the tip illustrate the remediation work.



The National tip in 1945 before any remediation work had been carried out.<sup>668</sup>

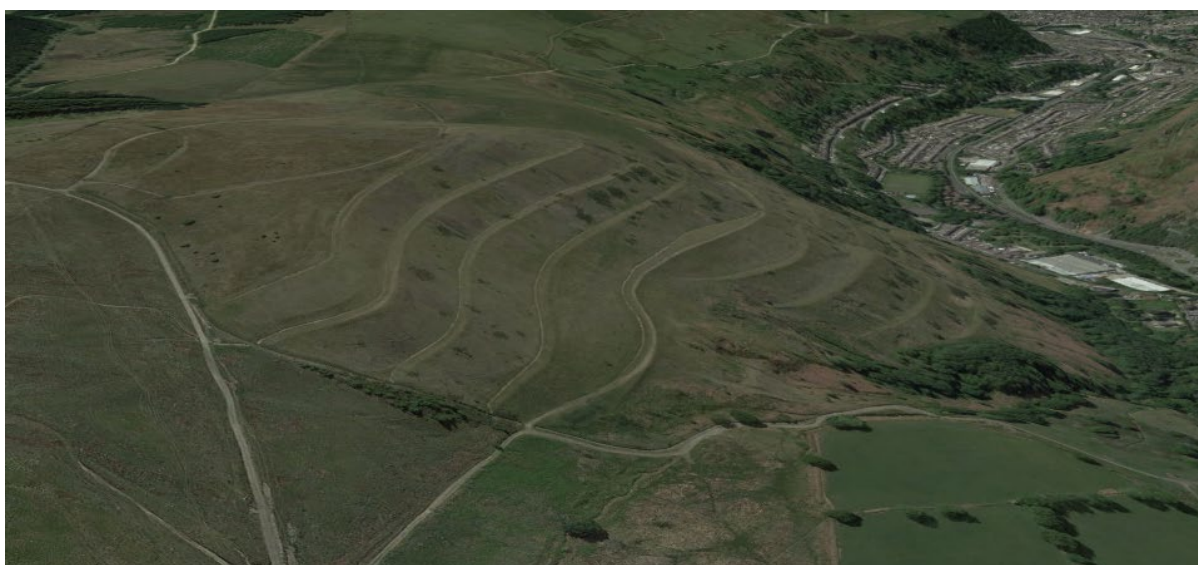
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<sup>667</sup> Photographs not specifically credited were taken by members of the project team.

<sup>668</sup> Map data: Google Earth, © 2021 The GeoInformation Group.



The tip prior to remediation work.<sup>669</sup> The slope of the tip is steep and is mostly bare and lacking vegetation.



The tip in 2020,<sup>670</sup> after significant remediation work. See the berms running horizontally across the slope of the tip, and the established vegetation.

<sup>669</sup> © Dr Mary Gillham Archive Project, "Wattstown tip above Wattstown just South of Tylorstown. Ynyshir and Porth at junction of 2 Rhondda rivers", <https://www.flickr.com/photos/marygillhamarchiveproject/25970844383/in/photostream/> (last visited 27 April 2021). Creative Commons Attribution 2.0.

<sup>670</sup> Map data: Google Earth, © 2021.





A closer view of the National tip showing the “berm and batter” profile.

### Drainage



The central drainage channel on the National tip taken looking upward from the berm in the previous photograph. It is a steep concrete channel running vertically down the face of the tip.





A transverse drainage channel on the National tip (running across the berm shown above) converging with the central drainage channel.



The central drainage channel on the National tip running downwards from the berm. The village of Wattstown is visible in the background, and a significant amount of water can be seen running down the channel.



Mesh covering a patch of loose rock on the tip, alongside a drainage ditch.

### **Monitoring equipment**



Recently installed equipment on the National tip monitoring movement of tip material.





More monitoring equipment in the foreground, with the Wattstown tip (which suffered a slide in December 2020) visible in the background.

#### TYLORSTOWN BEFORE AND AFTER THE FEBRUARY 2020 SLIDE



Tylorstown in 1945.<sup>671</sup> The ridges of two tips are visible, one above and behind the other.

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<sup>671</sup> Map data: Google Earth, © 2021 The GeoInformation Group.



Tylorstown in 2010.<sup>672</sup> The tips have now been revegetated with grass and trees.



Tylorstown in 2020, after the slide.<sup>673</sup> The upper tip has slipped, blocking the river and covering the hillside and valley floor with spoil.

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<sup>672</sup> Map data: Google Earth, © 2021 Getmapping plc.

<sup>673</sup> Map data: Google Earth, © 2021.





Spoil filling the riverbed.<sup>674</sup>



The top of the area exposed by the Tylorstown slide, viewed from a ridge. Note how the ridge of spoil stands out from the hillside, creating an artificial valley behind it.

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<sup>674</sup> Map data: Google Earth, © 2021.



In remediation work carried out since the February 2020 slide, water flowing from the hillside has been captured in pipes to prevent it from soaking into the spoil.



Further drainage pipes on the Tylorstown tip.



## THE ‘OLD SMOKEY’ TIP AT TYLORSTOWN

Old Smokey is a large conical tip and is located between the Tylorstown tip and the National tip. It has had some reprofiling work done to flatten the top.

This series of photographs shows the progression – the first is of the tip in 1945,<sup>675</sup> the second in 1973<sup>676</sup> and the third in 2021. Notice how much flatter the top of the tip is.



This photo from 1945 shows ‘Old Smokey’, its conical shape and pointed top standing out starkly from its surroundings. In the background, the National tip is visible.

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<sup>675</sup> Map data: Google Earth, © 2021 The GeoInformation Group.

<sup>676</sup> © Dr Mary Gillham Archive Project, “Old Smoky under snow, 21/01/73” available at: <https://www.flickr.com/photos/marygillhamarchiveproject/26481358572/in/photostream/> (last visited 27 April 2021). Creative Commons Attribution 2.0.



This photo from 1973 shows 'Old Smokey' from a different angle, still with a pointed tip and under snow. Bare patches of spoil are still visible, though some vegetation has been established.



In this photo, 'Old Smokey' has a significantly flatter top, established vegetation and there are conifers growing on it.