# Case Name: Okehampton Artillery Range: Linear and Curved Target Railways on F Range

# Case Number: 1424325

# Background

In 2014 we began a project to consider the military buildings on Okehampton Training Camp, Devon for addition to the National Heritage List for England. The project was initiated by a request from the Defence Infrastructure Organisation (DIO) of the Ministry of Defence (MoD) for confirmation of whether the buildings had special architectural or historic interest. At the same time the Okehampton Artillery Training Range was identified as an area which also required assessment, due to its historic and operational relationship to the camp. Research carried out in 2002 identified a number of remains associated with the military activity on the Range. An inspection of these remains was carried out by us on 23 and 24 June 2014, as a result of which 6 sites have been carried forward as part of this project, including the linear and curved target railways at F Range, Black Down.

# Asset(s) under Assessment

Facts about the asset(s) can be found in the Annex(es) to this report.

Annex	List Entry Number	Name	Heritage Category	HE Recommendation
1	1424351	Okehampton Artillery Range: Linear and Curved Target Railways on F Range	Scheduling	Add to Schedule

### Visits

Date 23 June 2014 Visit Type Full inspection

# Context

The assessment of C19 and C20 military features on Okehampton Range is taking place directly after the Camp phase of the project in order to give due consideration to the two distinct sets of structures. The Range and its structures are historically related to the Camp and its buildings.

Okehampton Range is not in a conservation area or adjacent to any listed buildings. There are several Scheduled Monuments of various dates within the area of assessment. It is within Dartmoor National Park. Many of the range feature lie within a Site of Special Scientific Interest.

# Assessment

### CONSULTATION

The owner, the occupier/leaseholder, the local authority, the Historic Environment Record and colleagues in the National Planning and Conservation Department and Heritage Protection Department were invited to comment on the factual details of the case as part of the consultation process.

The Defence Infrastructure Organisation (DIO) has responded on behalf of the occupier, the Ministry of Defence (MoD). They have made a single representation relating to all of the features that are under consideration for designation, which was a full and considered response to the consultation reports. They

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have recognised that some of the features have historic significance, although they have raised objections to the designation of certain features. The relative merits of each feature and their claims to national importance are addressed in the Discussion section of this report. They have noted that all of the features are in good condition, are well managed, under no threat, lie within a SSSI and that the land-management regime has been designed to satisfy environmental requirements which are also generally favourable to the historic environment. In the case of the linear target railway on F Range they noted that successive works to the road that bisects the railway have removed any archaeology associated with it, and assert that the section should not be included in any scheduling designation on the site.

A representative has responded on behalf of the landowner, the Duchy of Cornwall, to make a number of comments including that the linear (straight) railway is shown on the 1898 OS map published 1902, and that the curved railway was installed by 1946, and all buildings are gone.

Both the DIO and the Duchy have asked that any areas that are scheduled should exclude all modern infrastructure, tracks, cable runs, drainage, associated trenches, landscaping, fencing, and modern disturbance. Where it is deemed they do not contribute to the national importance of a site, modern tracks, surfaces and fencing will be excluded from a scheduling, while the ground beneath them may be included.

Claim: from the evidence supplied by the DIO, they have identified that a cable trench runs under the point at which a loop road intersects the incline railway.

Response: this road, which has cut into part of the bank and track bed, is not included in the designation, as identified in the schedule entry.

Claim: there may be other services not identified within the proposed scheduled area.

Response: without further information about the location of these features it is not possible to exclude them from the scheduling. However, any proposed work to services running through the monument should be discussed with the relevant Historic England Ancient Monument Inspector who can discuss the proposed work and advise whether Scheduled Monument Consent is required.

Colleagues in both the Designation and Investigation departments provided further information regarding comparable sites elsewhere.

#### DISCUSSION

The 1979 Ancient Monuments and Archaeological Areas Act (1979 Act) sets out the legal requirements for the scheduling of archaeological sites and monuments. It notes that sites may be scheduled by reason of their archaeological, historic, architectural, artistic or traditional national importance. Scheduled Monuments and Nationally Important but Non-Scheduled Monuments (DCMS October 2013) sets out the particular considerations used by the Secretary of State when determining whether sites of all types are suitable for statutory designation through scheduling; the key considerations are period, rarity, documentation, group value, survival and potential. Only the most relevant criteria will be applicable to an individual site. They should not be regarded as definitive, but as indicators which contribute to a wider judgment based on the individual circumstances of a case. Archaeological sites are assessed for their national importance, which is the key indicator of their significance. Those which are identified as of national importance may then be scheduled, if this is considered to be the most appropriate tool for their future management. Sites may be considered to be of national importance, but the Secretary of State may still use his discretion not to add the site to the Schedule.

Our Scheduling Selection Guide for Military Sites Post-1500 (April 2011) provides more specific guidance on the qualities to be looked for when considering the designation of these structures. It states that between 1860 and 1914, specialist structures, such as unusual training facilities, may deserve designation because of their national rarity. Some examples of training facilities have already been scheduled, such as the practice redoubts and trenches on Wagbullock Hill (Berkshire). No target railways have been designated, or are not thought to have been individually assessed previously. The incline target carrier railway at East Tor has been recommended for scheduling as part of this project (1424327).

#### PERIOD

The establishment of Okehampton Artillery Training Range in the 1870s was a key period in the development of British military tactics and techniques. The First Boer War of 1880-1 had exposed the ill-preparedness of the Royal Artillery for combat against a mobile enemy that was highly-skilled in stealth tactics and marksmanship. This fact, along with technological improvements in weaponry, led to the increased use of the training areas on Dartmoor, and more diverse training methods were employed such as an embryonic form of

trench warfare. In order to train effectively, the artillery were required to engage in rapid firing exercises and these had become increasingly hard to achieve at the Royal Artillery School at Shoeburyness, due to the disruption it caused to shipping in the Thames estuary.

The weaknesses revealed in the first Boer campaign were addressed with a revised training strategy for the RA's summer manoeuvres at Dartmoor, where target practice with improved field guns and rudimentary trench warfare drills were carried out. The increased activities on Dartmoor utilised ever-more advanced weaponry that relied on considerable amounts of horse-power (literally) to mobilise. The range continued in use for army training and the harsh landscape proved an effective training ground. The adaptation and improvements of training features, such as target railways, reflect the advancement in artillery capabilities.

#### RARITY

As one of five pre-1900 artillery ranges Okehampton Range is one of the earliest ranges of this type to be established in England. It was preceded by the Royal Artillery (RA) School at Shoeburyness, Essex, which was established in 1850. This site was the 'flagship' site for the RA and the remains of permanent mid-C19 camp buildings survive. There was a range to the south and later ranges to the north. Much of the older range has been reused as a public park. A number of the C19 camp buildings and structures relating to the training area to the south are listed; there is also a prehistoric settlement scheduled over part of the training area. To the north a large part of the later range became a rocket test facility. The artillery firing was principally directed towards Maplin Sands and the open waters.

The other training ranges established in England by the RA in the C19 were Okehampton (1873, now being assessed), Lydd (1882), Golden Hill, Isle of Wight (1888) and Salisbury Plain (1899). At Golden Hill, no permanent buildings were built and the artillery exercises were probably primarily fired out towards the sea. Salisbury Plain is an extensive military landscape and in 1919 Larkhill, one of the earliest camps, became the home to the Royal School of Artillery. The associated range has a number of artillery practice structures and trenches from the early C20 onwards. Other artillery ranges followed later, such as Redesdale (within the Otterburn Ranges), established in 1911.

Lydd Artillery Range is the most comparable with Okehampton in terms of date. It was positioned on the Kent coast, and a permanent camp was constructed to its north shortly after 1882. The early camp appears to have never had a full complement of camp buildings, unlike at Okehampton, underlining that Lydd was of lesser importance to the RA's training needs. Lydd was probably occupied all year round, and mainly used by the companies billeted at nearby barracks such as Folkestone, and ad-hoc visiting companies. Okehampton on the other hand served the whole regiment on a rolling programme through an extended summer season, as part of a mandatory training programme vital to the aims of the Royal Artillery. As Lydd Camp grew in the First and Second World Wars its development took place in a rather disparate manner. Part of the camp now stands over a section of the extensive C19 rifle range, which has further eroded Lydd's historic setting and contextual interest, whereas at Okehampton the range on Dartmoor is intact. The Lydd artillery range includes some probable late-C19/early-C20 military features; however the most substantive structures relate to the network of Second World War target carrier railways.

Okehampton is a rare survival as an example of an artillery range that has been in use since the 1870s, a longevity which is demonstrable in the surviving landscape features. As the headquarters for the School of Gunnery during the summer months, it is particularly notable for its role in the development and adoption of new and innovative military techniques. It offered an imaginative training programme, using a variety of static, moving and disappearing targets, the remains of which are still in evidence. The ruggedness and roughness of the Dartmoor landscape was of particular importance in establishing its suitability as a robust and dynamic training ground. Its success has meant that Okehampton Range has continued in use throughout the C20 and C21, with earthworks and structures surviving that illustrate the continuing evolution of military training. Those features which have been identified for designation form a key part of this range landscape, contributing to our understanding of the development of military training practices during the late-C19 and C20.

The linear target carrier railway is a rare example of its type. The only other known carrier outside Dartmoor dating to the pre-motorised era is at Catterick. Other, later examples of moving targets survive at a few other locations including Otterburn, Lydd and Fylingdales Moor, but these generally do not survive well. Another target railway, on East Mill Tor at Okehampton, is being considered for designation as part of this project (1424327).

The curved target carrier railway is probably of later date, and is not shown on the maps earlier than 1947. However, the mapping has been shown to be unreliable in some cases, and the railway may well date from the early C20. The use of iron rather than steel for the bearing fixings indicates an early date, and the railway

appears to have been well-established by the time aerial photography took place in the 1940s. Furthermore, establishment of two different forms of target railway in close proximity is rare.

#### SURVIVAL

The target railways at F Range are late-C19 and early C20 training features. There have been some alterations to the assemblage, however, it mostly retains intact ditches and banks throughout. MOD states that the embankment and cutting features around the location of the road have been destroyed. It is agreed that this area does not survive well and it is recommended that the linear target railway should be designated in two separate areas of protection, to the north and south of the road. Furthermore, other features in the immediate vicinity such as former firing points, redoubts and other possible former target railways do not survive well and do not meet the criteria for scheduling. The curved target railway survives particularly well with some fittings such as cable bearing remaining in situ.

In summary, the earthworks and structure survive well overall and compare favourably with the only other known examples to survive (at East Mill Tor, Okehampton Range, and at Catterick). They form an important part of the historic training programme at this significant artillery range.

#### **GROUP VALUE**

The variety of related military training features illustrates the evolution of military capabilities and adaptation to developing training requirements at Okehampton. The survival of structures across this multi-phase training area clearly demonstrates its continued use from the late C19 to the present day. There are a wide variety of earthworks and structures which form part of the military landscape, including communication networks, boundary features, observation positions and other features relating to various phases of military activity across this range. Although not all of these have been identified for scheduling, either due to their standard design, level of survival or a lack of information about their date of origins, these features contribute to an understanding of the range and its development. The linear and curved target railways at F Range are positioned closely to each other, which suggest an interrelated use as well as a common function. They provide an unusual, perhaps unique, example of a multi-phase military target railway complex, and are thereby granted additional group value. The other military features that lie close by, including earthworks such as redoubts and firing points, have been much altered and no longer retain their original form to the extent that they retain national importance.

The range is further enhanced by the proximity of the associated camp buildings, particularly those that relate to the earliest phase of the camp construction, including several listed buildings. Although some key buildings have been lost or drastically altered, most of the buildings one would expect to find in a military camp remain in a legible form and position on the original camp layout. The range is also part of a wider military context, as part of the wider Dartmoor landscape that has witnessed military intervention for many centuries, including the expansion of the MOD training area to the south including the later Willsworthy and Merrivale ranges.

#### CONCLUSION

After examining all the records and other relevant information and having carefully considered the archaeological interest of this case, the criteria for scheduling are fulfilled. The linear target railway and associated structures at F Range are therefore recommended for scheduling.

#### REASONS FOR DESIGNATION DECISION

The linear and curved target railways at F Range, Black Down are recommended for scheduling for the following principal reasons:

\* Period: the Royal Artillery Training Range at Okehampton played an important role in the advancement of new military techniques and tactics from the late C19 to the present day, and has a strong cultural and historical significance, within both a regional and national context;

\* Survival: the target railways survive well as earthworks, providing clear evidence of their original construction and the development of artillery tactics and weaponry. The curved railway has some remaining cable bearings in situ;

\* Rarity: as the official summer school of the School of Gunnery, the range at Okehampton became the most important artillery range established in the late C19, with a set of imaginative, and in some cases unique, practice range features. Late-C19 target carrier railways are particularly rare, and those from the first half of the C20 are also not common;

\* Documentation: the features have been documented in historical maps of the range, aerial photography, and a number of landscape and condition surveys throughout the C21;

\* Group value: the site has strong group value with the other related military training features. The associated camp to the north is of historic significance in itself, particularly the listed late-C19 buildings, and the two sites

should not be seen in isolation of each other. The Okehampton target railways are a key part of a larger multi-phased military landscape that can be seen across Dartmoor.

### Countersigning comments:

Agreed. The linear and curved target railways on F range are unusual examples of pre-motorised target railways forming part of the complex provision for artillery training within the Okehampton range. The target railways survive well and demonstrate the changing training requirements necessary for responding to developments in arms provision and military tactics in the late C19 and early C20. Given this, they merit scheduling. Deborah Williams

26th May 2015

Annex 1

List Entry

#### List Entry Summary

This monument is scheduled under the Ancient Monuments and Archaeological Areas Act 1979 as amended as it appears to the Secretary of State to be of national importance.

Name: Okehampton Artillery Range: Linear and Curved Target Railways on F Range

List Entry Number: 1424351

#### Location

Okehampton, Devon. Located at SX5812 9117.

The monument may lie within the boundary of more than one authority.

County	District	District Type	Parish
Devon	West Devon	District Authority	Okehampton Hamlets

#### National Park: DARTMOOR

Grade: Not Applicable to this List Entry

#### Date first scheduled: Date of most recent amendment:

#### Legacy System Information

The contents of this record have been generated from a legacy data system.

**Legacy System:** Not applicable to this List entry. **Legacy Number:** Not applicable to this List entry.

#### **Asset Groupings**

This List entry does not comprise part of an Asset Grouping. Asset Groupings are not part of the official record but are added later for information.

#### **List Entry Description**

#### Summary of Monument

A late-C19 linear target railway, designed and used for artillery training, with a later curved target railway nearby.

#### Reasons for Designation

The linear and curved target railways at F Range, Black Down are scheduled for the following principal reasons:

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\* Documentation: the features have been documented in historical maps of the range, aerial photography, and a number of landscape and condition surveys throughout the C21;

\* Group value: the site has strong group value with the other related military training features. The associated camp to the north is of historic significance in itself, particularly the listed late-C19 buildings, and the two sites should not be seen in isolation of each other. The Okehampton target railways are a key part of a larger multi-phased military landscape that can be seen across Dartmoor.

#### History

Dartmoor has been used as a defensive location since at least the Bronze Age. There is evidence of Iron Age, Roman, Medieval and Civil War military use in the Okehampton area, indicating the strategic significance of the area as the elevated gateway to the south west of England. Okehampton Artillery Training Range is on the northern edge of Dartmoor, to the south of the associated Camp that lies within the C13 Okehampton Deer Park. Medieval settlements were scattered through the park; the remains of one extends to the north of the range and others lie close by.

The modern military use of the moor dates back to the late C18 when it was used to train the Okehampton Militia. By the early C19, soldiers guarding Dartmoor Prison used the moor for training, and troops garrisoned in the Palmerston Forts in South Devon used Dartmoor by the mid-C19. The Militia also continued training, often on Hay Tor, and in large numbers. Later in the C19, due to improvements in the range and power of artillery weapons, the Royal Artillery School of Gunnery at Shoeburyness (est. 1859) became unsuitable for training, and Dartmoor was identified as a suitably barren and uninhabited area to become its summer headquarters. Training became formalised into regular summer manoeuvres for the Royal Artillery from 1873, with the permission of the landowner the Duchy of Cornwall. In 1875 a committee was set up under Major-General F Eardley-Wilmot FRS, whose purpose was to look at the problems of providing field artillery training under realistic service conditions, visited the northern part of Dartmoor and once again found it a suitable landscape for battlefield training. The recent provision of a train station at Okehampton was also in its favour. In 1876, the first annual training event took place using the north moor, with a tented camp located at Okehampton.

By the early 1890s the War Office and Royal Artillery resolved to build a permanent camp at Okehampton to provide better protection against the harsh weather conditions. On 31st December 1892, the War Office secured a 999 year lease for the site of the camp: 94 acres of land on the Okehampton Park Estate. Other artillery training camps were set up at Lydd (1882), Golden Hill, Isle of Wight (1888) and Salisbury Plain (1899).

In 1895 an additional 10,000 acres of High Moorland were leased from the Duchy. From May to September each year, batteries from across England travelled by rail to Okehampton for two or three weeks training. In 1901 a battery consisted of 5 officers, 166 men, 6 guns and at least 89 horses. The camp could accommodate two brigades each containing four batteries.

In the late-C19, probably in response to the tactics employed by the Boers during the wars in South Africa, trenches were dug, principally to determine methods of attacking these defensive positions. Further earthworks were created to facilitate training including earthen parapets and redoubts. An imaginative firing programme was also established with the addition of an extensive system of static, moving and disappearing targets. These were intended to represent advancing infantry, cavalry and guns. The targets were moved in a variety of ways including horses pulling targets on tracks, ropes, pulleys and sledges. Earth and granite covered concrete, splinter-proof shelters were also built to facilitate the observation of the artillery training and to instruct on the movement of targets. Some have subsequently been demolished, and those that survive remain in use as training features with the exception of Observation Post 22, at the corner of East Okement Farm, which is still used to observe manoeuvres.

Early communication was carried out by semaphore, with flag stations erected on high points across the moor. Later an extensive network of telephone cables was installed with concrete telephone points placed at strategic positions.

It is unclear whether any formal training was provided at Okehampton for First World War recruits as those who joined up typically received a short period of training before being sent to the front. Formal training did occur at sites such as Larkhill Camp, Salisbury Plain, which was established during the First World War. Artillery training continued at Okehampton during the 1920s and 30s. Shortly after the outbreak of the Second World War, virtually the whole of Dartmoor was requisitioned for army training. The D-Day preparations of 1943/4 led to the replacement of British troops with the American 4th and 29th Divisions, who took part in the Normandy invasion. Subsequently, training took place at Okehampton for the campaigns in Korea (1950-53) and Suez (1956). Since the late C20 the Camp and Range have been used extensively by the Territorial Army, Commando Brigades and the Royal Marines.

F Range on Black Down and West Mill Tor was used from the late C19 for artillery training, and a linear target carrier system was established here around this time. It is shown on a map (WO78/3334) as Railway for Moving Target, which is a copy of an 1892 map published in 1906. The late-C19/early-C20 map evidence of Okehampton Range is at times conflicting, with some military features that were otherwise known to have been in place not always shown. No military features are shown on Black Down on the 1898 Ordnance Survey Map. By 1906, the linear target railway was in place with two engine sheds, and a redoubt and electric light shed to the east. The shed may have provided illumination for night firing, and is no longer extant.

In the C20, F Range was used for anti-tank weaponry training, and there are a number of additional military features in the landscape around the target railway relating to this activity, including firing positions, a targetry and a short target railway to the east. An aerial photograph of 1946 (RAF/3G/TUD/UK/138) shows that a further target carrier was built by this time, to the south west of the linear railway. It has a curved rather than linear path, and appears to have been operated using pulleys and ropes, rather than engine power or momentum.

F Range was used for firing the rifle-launched 94mm Energa Grenade and the Light Anti-Tank Weapon (LAW) until training ceased in the late C20. Two missile firing positions were established to the east of the north end of the linear target railway. Upon the closure of this range a target was relocated to H Range, and the other military features on the site have become redundant.

The features were identified and surveyed as part of a study of the military range by the Royal Commission on the Historical Monuments of England in 1993 and again by English Heritage in 2004 (Probert). They have been recorded as part of the National Mapping Programme for Dartmoor and also as part of a historical and photographic survey of the range carried out in 2002 (Francis).

#### Details

PRINCIPAL FEATURES: the earthwork remains of a former artillery target railway of late C19 date, which runs north to south from the lower, south-facing flank of Black Down to the Red-a-ven Brook immediately west of West Mill Tor. Also, the earthwork remains of an early-mid-C20 curved target carrier to the south west.

DESCRIPTION: the earthwork remains of a former artillery target railway run north to south from SX5823592141 to SX5812791168. The embankments and cuttings remain, indicating an original length of 960m, and the rails have been removed. The first 60m of the line at the northern end of the railway lie in what is now a deep, 3-4m, cutting with irregular sides and traces of masonry and concrete. This is described in 1906 as 'Engine Shed' and presumably formed covered accommodation for the targetry. The trackbed leaves the site of the former shed at 416m OD and gently descends to 411m near the centre (where another engine shed is marked on the 1906 map) before rising slightly to 412m at the southern end. At SX5820691879 it crosses a road, which is not included in the scheduled area. The trackbed averages 3.0m wide and there are some indentations of sleepers. Motive power for this feature is uncertain though unlikely to have been a locomotive, the engine sheds probably housing stationary engines. Given the slight incline of the line it seems likely that the targetry was partly gravity-powered on its north to south run. Pulleys and wire tensioning blocks, which were at one time visible along the edges of the trackbed, may have assisted this and also formed a retrieval system to return the targetry to the north end. To the west of the railway, at approx. SX5815791764, is an earth mound, possibly related to the southernmost late-C19 engine shed. Finds of 0.5 solid rounds on the target railway suggest that it was used for training with the Boyes anti-tank rifle.

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The earthwork remains of a curved target carrier run north-east to south-west from approx. SX5818591788 to SX5799691363. The cutting averages approx. 1.0m wide and 0.5m deep. Any tracks that may have been in place have been removed. The bends in the cutting have a steel or iron pin and tube used as cable bearings for the carrier. One possible use in the 1920s is via a sleigh made of two pieces of rolled corrugated iron sheeting on which canvas figures were attached, pulled by a limber. Kite balloon wire would be used to prevent the sleigh skidding, in conjunction with the bearing pins and tubes. The southern end of the carrier splits into two and terminates at a point that formerly had pulleys staked to the ground. The northern end terminates close to the mound at the former engine shed at SX5815791764.

EXTENT OF SCHEDULING: the monument comprises 3 separate areas of protection and the boundary runs between SX5823592141 in the north and SX5799691363 in the south, to include the target carrier track beds and cuttings. A buffer of 2m is included around the whole monument for the support and preservation of the earthworks. The road that crosses the linear target railway at SX5820691879 is not included in the scheduling.

#### **Selected Sources**

#### Websites

#### Armed Forces on Dartmoor: A Brief History, accessed 11/2/2015 from

https://www.gov.uk/government/uploads/system/uploads/attach ment\_data/file/33309/armed\_forces\_ondartmoor\_brief\_history.p df

English Heritage Pastscape - Monument No. 1396549, accessed 9/2/2015 from http://www.pastscape.org.uk

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#### Other

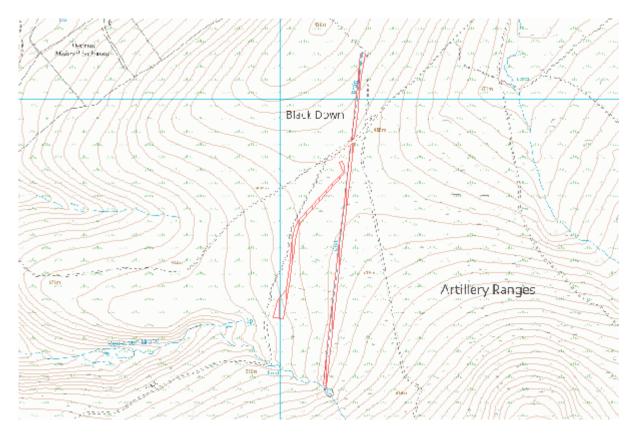
Francis, P (2002) Okehampton Artillery Range, Devon: Report and Photographic Survey (unpublished)

Probert, S, (2004) Okehampton Range: Monument Baseline Condition Survey English Heritage (unpublished)

WO78/4547 Okehampton Ordnance Survey Map of Camp and Artillery Ranges 1892 Reproduced in 1906, from the National Archives

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### National Grid Reference: SX5816791528



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