

RPS

MEAD LANE, HERTFORD

Survey of Bats and Reptiles, 2011

Alan Bull

For: **BRB (Residuary) Ltd**

October 2011

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Notice to Interested Parties

To achieve the study objectives stated in this report, we were required to base our conclusions on the best information available during the period of the investigation and within the limits prescribed by our client in the agreement.

No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Thus, we cannot guarantee that the investigations completely defined the degree or extent of e.g. species abundances or habitat management efficacy described in the report.

Document Information

| | |
|----------------------------|--|
| Report title: | Mead Lane, Hertford. Survey of Bats and Reptiles, 2011 |
| Client: | BRB (Residuary) Ltd |
| Document ref: | JPP2798-R-001a |
| Project manager: | Neal Gates |
| Author(s)/Surveyor: | Alan Bull, Andrew Seth, Jennifer Spelling |
| Report date: | October 2011 |

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|-----------------------|---------------|------------|
| Checked by: | Roger Buisson | 26/10/2011 |
| Authorised by: | Neal Gates | 30/10/2011 |

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0 EXECUTIVE SUMMARY

- 0.1 Following a Phase I and Scoping Survey undertaken by RPS in July 2011 which made recommendations for further surveys, RPS was commissioned by BRB (Residuary) Ltd to undertake a Reptile Survey and Bat Activity Survey for the site at Mead Lane, Hertford.
- 0.2 The aim of the survey was to determine the use of the site by reptiles and bats with reference to the future development of the site.
- 0.3 The survey area is located in Hertford to the north of Hertford East Railway Station. The site is approximately 1 ha and is bounded by Mead Lane to the north, railways and further scrub to the east, railways to the south and Mill Road to the west. The survey area is located within an area of mixed land uses, with railway, industrial buildings and residential properties.
- 0.4 The reptile survey was carried out by placing sheets of roofing felt (refugia), measuring approximately 0.5m² across the site. They were placed within the areas of unimproved grassland within the site. A total of 20 refugia sheets were placed around the site, within three arrays. Figure 2.1 shows the location of arrays and the number of sheets within each array.
- 0.5 The bat survey was carried out using a single survey route, with stopping points. It was surveyed on three occasions during June-September 2011. This route approached all areas of the site to within approximately 50m and encompassed areas of potentially good habitat for foraging bats.
- 0.6 The reptile survey at Mead Lane found one species of reptile, a Slow Worm. The bat survey found three species of bat. These were Soprano Pipistrelle, Common Pipistrelle and Noctule.
- 0.7 The site at Mead Lane is of limited value to both reptiles and bats.
- 0.8 Any clearance works or fence erection should be undertaken under the supervision of an Ecological Clerk of Works and at the appropriate time of year, ideally between March and October.
- 0.9 It is considered that with the implementation of appropriate mitigation through timing of works and with appropriate creation of new habitat, this will help to minimise the impacts to the reptiles and bats that use the site and surrounding area.
- 0.10 Removal of scrub to accommodate the new development is also likely to impact on breeding birds on site. Vegetation clearance should therefore be undertaken outside of the breeding bird season (the bird breeding season is March to August inclusive).

I INTRODUCTION

Background to the study

- I.1 Following a Phase I and Scoping Survey undertaken by (RPS in July 2011). Which made recommendations for further surveys, RPS was commissioned by BRB (Residuary) Ltd to undertake a Reptile Survey and Bat Activity Survey for the site at Mead Lane, Hertford (RPS 2011). RPS understands that the site is proposed for redevelopment into a mixed land use development with some soft landscaping and garden areas.

Aims and objectives

- I.2 The aim of the survey was to determine the use of the site by reptiles and bats with reference to the future development of the site.
- I.3 The main objectives were to:
- identify presence / absence of reptiles on the site;
 - identify bat activity on the site; and
 - advise on appropriate mitigation if necessary.

Conservation Status

Reptiles

- I.4 All British reptile species are listed on Schedule 5 of the Wildlife and Countryside Act 1981, as updated by the Countryside and Rights of Way Act 2000.
- I.5 Adder *Vipera berus*, Grass Snake *Natrix natrix*, Slow-worm *Anguils fragilis* and Common Lizard *Zootaca vivipara* receive partial protection under part of Section 9(1) and all of Section 9(5) of the Wildlife and Countryside Act 1981. As such it is an offence to:
- intentionally or recklessly kill or injure any individual; and
 - sell, offer for sale, possess or transport for the purpose of sale or publish advertisements to buy or sell individual reptiles.
- I.6 All four of these reptile species are also UK Biodiversity Action Plan (UKBAP) Priority Species and are included on Section 41 of the Natural Environment and Rural Communities Act 2006 as species of principal importance for the conservation of biodiversity in England and Wales.
- I.7 Planning Policy Statement 9 (PPS9) states that Local Authorities should ensure that these species are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. In addition, Planning Authorities should refuse development where harm to the species or their habitats

would result, unless the need for, and benefits of, the development clearly outweigh that harm.

Bats

- 1.8 All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981, as updated by the Countryside and Rights of Way Act 2000. All British bats are also included on Schedule 2 of The Conservation (Natural Habitats, &c.) Regulations 1994 as European Protected Species. These Regulations have further been amended by the Conservation (Natural Habitats etc.) (Amendment) Regulations 2007 and taken together, these pieces of legislation make it an offence to:
- intentionally or recklessly kill, injure or capture bats;
 - deliberately or recklessly disturb bats (whether in a roost or not); and
 - damage, destroy or obstruct access to bat roosts
- 1.9 A roost is defined as 'any structure or place which [a bat] uses for shelter or protection'. As bats tend to reuse the same roosts, legal opinion is that a roost is protected whether or not bats are present at the time of survey.
- 1.10 As a consequence of the changes resulting from the 2007 Regulations, in particular, the removal of the 'incidental result defence' (regulation 40(3)(c) and 43(4)) which covers acts which are "an incidental result of a lawful activity and which could not reasonably have been avoided", it means that the strict liability offence of damaging or destroying a breeding site or resting place will no longer be subject to a defence. A licence will therefore be required by those who carry out any operation that will result in offences being committed e.g. destruction of a bat roost or the felling of a tree.
- 1.11 In addition, Greater Horseshoe *Rhinolophus ferrumequinum*, Lesser Horseshoe *Rhinolophus hipposideros*, Barbastelle *Barbastella barbastellus* and Bechstein's *Myotis bechsteinii* are also listed in Annex II of the EC Habitats Directive, which effectively requires that the best of these species' roosting and foraging sites are designated as Special Areas of Conservation (SACs).
- 1.12 The following bat species are listed as being of principal importance for the conservation of biodiversity in England, (commonly referred to as UKBAP Priority species): Barbastelle, Bechstein's, Noctule *Nyctalus noctula*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Brown Long-eared *Plecotus auritus*, Greater Horseshoe, and Lesser Horseshoe.
- 1.13 Planning Policy Statement 9 (PPS9) states that Local Authorities should ensure that these species are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. In addition, Planning Authorities should refuse development where harm to the species or their habitats would result, unless the need for, and benefits of, the development clearly outweigh that harm.

Survey area

- I.14 The survey area is located in Hertford to the north of Hertford East Railway Station. The site is approximately 1 ha and is bounded by Mead Lane to the north, railways and further scrub to the east, railways to the south and Mill Road to the west. The survey area is located within an area of mixed land uses, with railway, industrial buildings and residential properties.

2 METHODS

Reptile Survey

- 2.1 Sheets of roofing felt (refugia), measuring approximately 0.5m² were placed across the site. They were placed within the areas of unimproved grassland within the site.
- 2.2 A total of 20 refugia sheets were placed around the site, within three arrays. Figure 2.1 shows the location of arrays and the number of sheets within each array.
- 2.3 Refugia were placed both in likely reptile basking spots (for example, un-shaded patches next to cover) and in areas of long grass, next to potential hibernation sites (for example, piles of rubble or disused rabbit burrows) to ensure that all habitat was sampled.
- 2.4 The refugia were checked on seven separate occasions between August and September 2011. As far as possible, refugia were not checked in heavy rain, strong wind or when the temperature was below 10°C or above 20°C. On hot, clear sunny days, reptiles are less likely to need to use the refugia for thermoregulation as temperatures can be maintained without prolonged periods of basking (Froglife, 1999; Gent & Gibson, 1998). The optimal survey period for reptiles (as recommended in the Herpetofauna Worker's Manual (Gent and Gibson, 1998)) is April, May and September.
- 2.5 Any visual sightings of reptiles seen basking on or sheltering underneath the refugia were noted, and their locations recorded onto recording forms.
- 2.6 The survey dates and weather for the seven reptile visits are shown in Table 2.1.

Table 2.1: Reptile survey dates and weather

| Visit number | Date | Temperature °C | Description of weather |
|--------------|----------|----------------|--|
| 1 | 08/08/11 | 16 | Dry, cloud 1/8, Wind NW F1 |
| 2 | 12/08/11 | 22 | Dry, Cloud 8/8 |
| 3 | 19/08/11 | 13.5 | Dry, Cloud 2/8 |
| 4 | 30/08/11 | 17 | Dry |
| 5 | 05/09/11 | 14.5 | Dry, Wind F1 |
| 6 | 15/09/11 | 20 | Dry, Cloud 4/8, No wind, Visibility Good, |
| 7 | 22/09/11 | 16 | Dry, Cloud 1/8, Light wind F1, Visibility Good |

Bat Activity survey

- 2.7 A single survey route, with stopping points, was identified and used to survey the site on three occasions during June-September 2011. This route approached all areas of the site to within approximately 50m and encompassed areas of potentially good habitat for foraging bats.

- 2.8 Figure 2.2 shows the route used, with stopping points, for the bat activity survey at the proposed application site.
- 2.9 These surveys were carried out using a Pettersson D240x time expansion bat detector. The survey route was walked at an even pace, with all bat activity being recorded. Surveys were carried out following Bat Conservation Trust Good Practice Guidelines (BCT 2007) with surveys conducted from 30 minutes before sunset until up to 2 hours after sunset.
- 2.10 All bat passes were noted and all bats were identified to species level, where possible, on site. Echolocation calls were also recorded onto Edirol recording devices and subsequently analysed using computer software (BatSound Sound Analysis) for confirmation. Where possible, additional notes on size, flight height, type of flight (such as commuting, foraging, fast or slow) and direction of flight were also recorded during the survey.
- 2.11 Bat activity can be strongly associated with weather conditions. Surveys were predominately carried out in favourable conditions when bat activity was deemed to be likely (dry with little to no wind and temperatures greater than 8°C).
- 2.12 Weather conditions during the three Bat Activity surveys are shown in Table 2.2.

Table 2.2: Bat Activity survey dates and weather

| Visit number | Date | Temperature °C | Description of weather |
|---------------------|-------------|---------------------------|-------------------------------|
| 1 | 28/07/11 | 21 | Dry, no wind, Cloud 6/8 >500m |
| 2 | 01/09/11 | 19 at start; 15 at finish | Dry, no wind, no cloud |
| 3 | 13/09/11 | 16 at start; 15 at finish | Dry, wind F2 SW, no cloud |

3 RESULTS

Reptiles

- 3.1 One juvenile Slow-worm was recorded on 8th August in Array 1.
- 3.2 No reptiles were seen during the other six visits to the site.

Bats

- 3.3 Three species of bat were recorded during the transect surveys between July and September. These were Noctule, Common Pipistrelle *Pipistrellus pipistrellus*, and Soprano Pipistrelle.
- 3.4 Table 3.1 shows the number of bats recorded during the transect surveys.

Table 3.1: Total number of bats recorded for each species

| Species | Visit 1 28/07/11 | Visit 2 01/09/11 | Visit 3 13/09/11 |
|---------------------|---------------------|---------------------|---------------------|
| Common Pipistrelle | 1 | 0 | 2 |
| Soprano Pipistrelle | 4 | 0 | 0 |
| Noctule | 2 | 2 | 0 |
| Total records | 7 | 2 | 2 |

- 3.5 The locations of bat passes of the three bat species recorded at the proposed application site are shown in Figure 3.1
- 3.6 Foraging activity was recorded by both Common and Soprano Pipistrelle and commuting activity was recorded by all three species.
- 3.7 No social activity was recorded by any of the three species.

4 EVALUATION

Reptiles

- 4.1 The suitable habitat for reptiles present on site was the areas of unimproved neutral grassland where the reptile refugia sheets were placed.
- 4.2 The proposed application site at Mead Lane, Hertford is considered to be of little value to reptiles, with just one record of a Slow-worm recorded in August.
- 4.3 The one Slow-worm observed was a juvenile and, although possible that this had dispersed onto the site from elsewhere, the possibility remains that the population of reptiles present on site is slightly higher than recorded during the surveys.

Bats

- 4.4 Three species of bat were recorded during the bat activity surveys. These were Noctule, Common Pipistrelle and Soprano Pipistrelle.
- 4.5 All three of these bat species are described as widespread throughout Hertfordshire, with the two Pipistrelle species described as being occasionally common and Noctule described as being relatively scarce (Hertfordshire & Middlesex Bat group website).
- 4.6 The proposed application site at Mead Lane is used by both Common and Soprano Pipistrelle for foraging, whilst Noctule may use this site as a commuting route from nearby roosts to alternative foraging areas.
- 4.7 Although no social activity was recorded by any of the three species, which may indicate the presence of mating males with nearby territories, it cannot be ruled out that maternity roosts of any of the three species may be located near to the Mead Lane site.

5 IMPLICATIONS FOR FUTURE DEVELOPMENT

Reptiles

- 5.1 Although the population of reptiles is very small, any development on the proposed application site at Mead Lane is likely to impact upon reptiles.
- 5.2 It is recommended that a number of measures are put in place to reduce the impact on reptiles and retain some of the suitable reptile habitat present on site.
- 5.3 These measures are to include:
- Retaining areas of suitable reptile habitat on site;
 - Erection of reptile fencing around such areas to prevent disturbance; and
 - Removal of scrub and vegetation at appropriate time of year.
- 5.4 If the areas of suitable habitat for reptiles are due to be lost as part of the development, then mitigation will need to be put in place, to prevent injury or killing of animals during the works in accordance with their legal protection.
- 5.5 Habitat to be retained during development that contains reptiles should be protected by the erection of fencing during the construction process. This will prevent unauthorised materials being deposited, plant tracking across the areas or personnel entering areas and causing disturbance. Reptile fencing should also be erected around the area to stop the reptiles from straying into the working area.
- 5.6 If an area of suitable habitat of sufficient size is being retained on site, then the mitigation recommended for reptiles would be to:
- move the reptiles out of the area to be developed via habitat modification under the supervision of an Ecological Clerk of Works. This would involve strimming the vegetation and removing the cuttings to encourage reptiles to move out of the affected area into adjacent retained habitat. This should be undertaken in March - October; or
 - where the retained receptor site is not linked to the area to be lost by suitable habitat or there is too great a distance for reptiles to move themselves, then reptiles would need to be caught and translocated.
- 5.7 If the extent of suitable habitat to be retained on site is not sufficient to support the existing reptile population then reptiles would need to be translocated to a suitable receptor site. The suitability of any receptor sites will need to be assessed through further survey work to establish if there is a current reptile population, and where the site can support the additional number of animals that would be translocated.

- 5.8 Ideally, the reptile fencing should be erected on-site before reptiles become inactive in October or once they've become active again in March. The fencing would need to be erected under the supervision of an Ecological Clerk of Works.
- 5.9 Vegetation within the areas of suitable habitat for reptiles should be removed between March and October, though ideally before late August/early September, while reptiles are active, and before young hatch as reptiles emerging from hibernation/ and hatchlings are vulnerable to predation, if there is no vegetation cover.
- 5.10 The vegetation would need to be cut in two passes, the first cut to 25 cm above the ground and the second cut to 10 cm with a minimum 24 hour period between cuts to allow reptiles to move out of the area.
- 5.11 The vegetation should be cleared from the western end of the site, moving east in a directional manner, to ensure reptiles are not left 'stranded' or forced towards the road or other unsuitable habitat, leaving them vulnerable to predation.
- 5.12 The scrub outside of the suitable areas of reptile habitat will also need to be removed from the site, preferably by hand. Log and rubble piles will need to be dismantled by hand by an ecological clerk of works. No heavy machinery should access the areas of the site containing reptile habitat until the vegetation has been cleared.
- 5.13 If clearance of vegetation is undertaken during the breeding bird season (typically March-August inclusive) a suitably qualified ecologist should check for breeding birds immediately prior to clearance works being undertaken. If active nests are found to be present, an area of vegetation should be left around the nest until any chicks have fledged.
- 5.14 Any reptiles found during the clearance works should be removed by hand by the ecologist, and placed in appropriate habitat nearby.

Bats

- 5.15 The number of bats using the site at Mead Lane is very small. However, it is recognised that any development on site would lead to a loss of suitable foraging habitat for bats.
- 5.16 Bats use linear features for foraging, typically hedgerows and tree lines. It is recommended that some habitat is retained on site to allow bats to forage. Connectivity of habitat should also be retained, where possible, joining any retained habitat left on the site of the proposed development, to neighbouring scrub and vegetation to the east of the site.
- 5.17 The habitat along the railway line offers an ideal commuting route corridor for bats that may roost elsewhere and forage on site.
- 5.18 The necessity for lighting around any on-site developments should also be considered to reduce the impacts on foraging bats around the site, as artificial lighting can increase the chances of predation.

- 5.19 Should any street-lighting or flood-lighting be deemed necessary around the site, the following measures would ensure that the impact of lighting on bats is minimised:
- use of low pressure sodium lamps instead of high pressure sodium or mercury lamps with the mercury lamps used fitted with UV filters and the brightness should be as low as legally possible;
 - the times during which the lighting can be used should be limited to provide some dark periods and the lighting should be directed to where it is needed to avoid light spillage;
 - any upward lighting should be minimal to avoid light pollution;
 - light can be restricted to selected areas by fitting hoods which direct the light below the horizontal plane, at preferably an angle less than 70 degrees; and
 - limiting the height of lighting columns and directing light at a low level reduces the ecological impact of the light. Road or trackways in areas important for foraging bats should contain stretches left unlit to avoid isolation of bat colonies.
- 5.20 No bat roosts should be directly illuminated as this could delay bat emergence and shorten the amount of time available for foraging. This may lead to bats abandoning their roosts.
- 5.21 Although no bat roosts were identified on site, there is the potential that the Hertford East Railway Station buildings may contain small numbers of roosting bats. As a result, these buildings should not be subject to additional illumination as a precautionary measure.
- 5.22 Mitigation could also include the provision of bat roosting boxes on any buildings or trees included in the design plan.

6 CONCLUSIONS

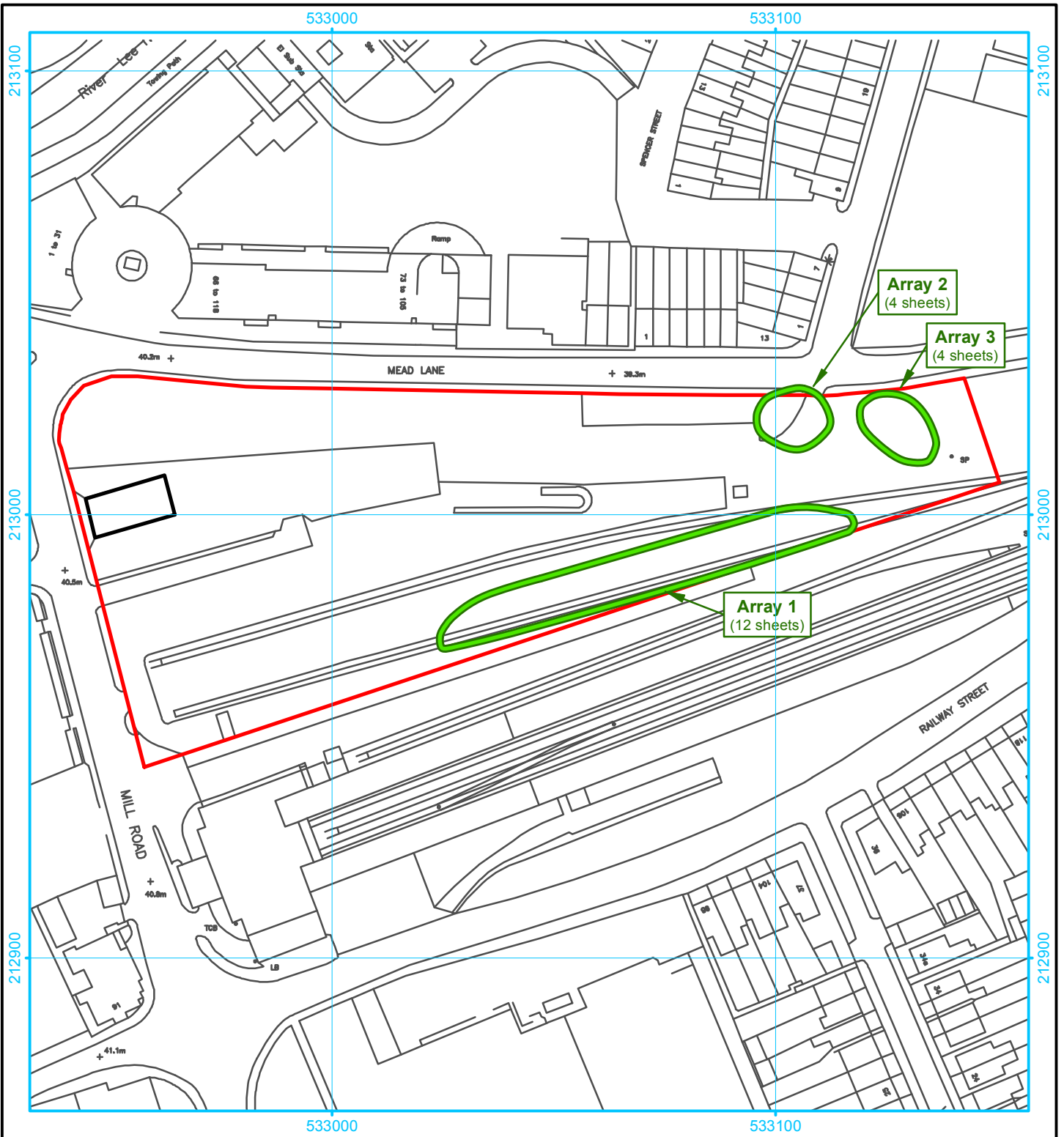
- 6.1 The reptile survey at Mead Lane found one species of reptile, a Slow Worm and three species of bat. These were Soprano Pipistrelle, Common Pipistrelle and Noctule.
- 6.2 The site at Mead Lane is of limited value to both reptiles and bats.
- 6.3 However, the presence of reptiles and bats utilising the site for foraging pose constraints on the development.
- 6.4 Any clearance works or fence erection should be undertaken under the supervision of an Ecological Clerk of Works and at the appropriate time of year, ideally between October and March inclusive.
- 6.5 It is considered that with the implementation of appropriate mitigation through timing of works and with appropriate creation of new habitat, this will help to minimise the impacts to the reptiles and bats that use the site and surrounding area.
- 6.6 Reptiles are legally protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). All bats species are legally protected in the UK.
- 6.7 Removal of scrub to accommodate the new development is also likely to impact on breeding birds on site. Vegetation clearance should therefore be undertaken outside of the breeding bird season (the bird breeding season is March to August inclusive).
- 6.8 If vegetation removal is carried out during the bird breeding season, a nesting bird check must first be carried out by a suitably qualified ecologist. If the site is declared free of nesting birds, then vegetation must be removed within 48 hours. If birds are found to be nesting, then a buffer zone must be marked around the vegetation with the nest, and vegetation removal cannot be carried out until the chicks have fledged.

7 REFERENCES

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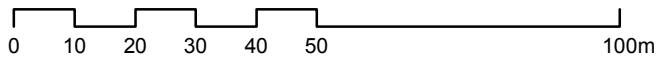
FIGURES

Figure 2.1: Location of the three Arrays of Reptile Sheets at Mead Lane



Key

- Site boundary
- Reptile refugia

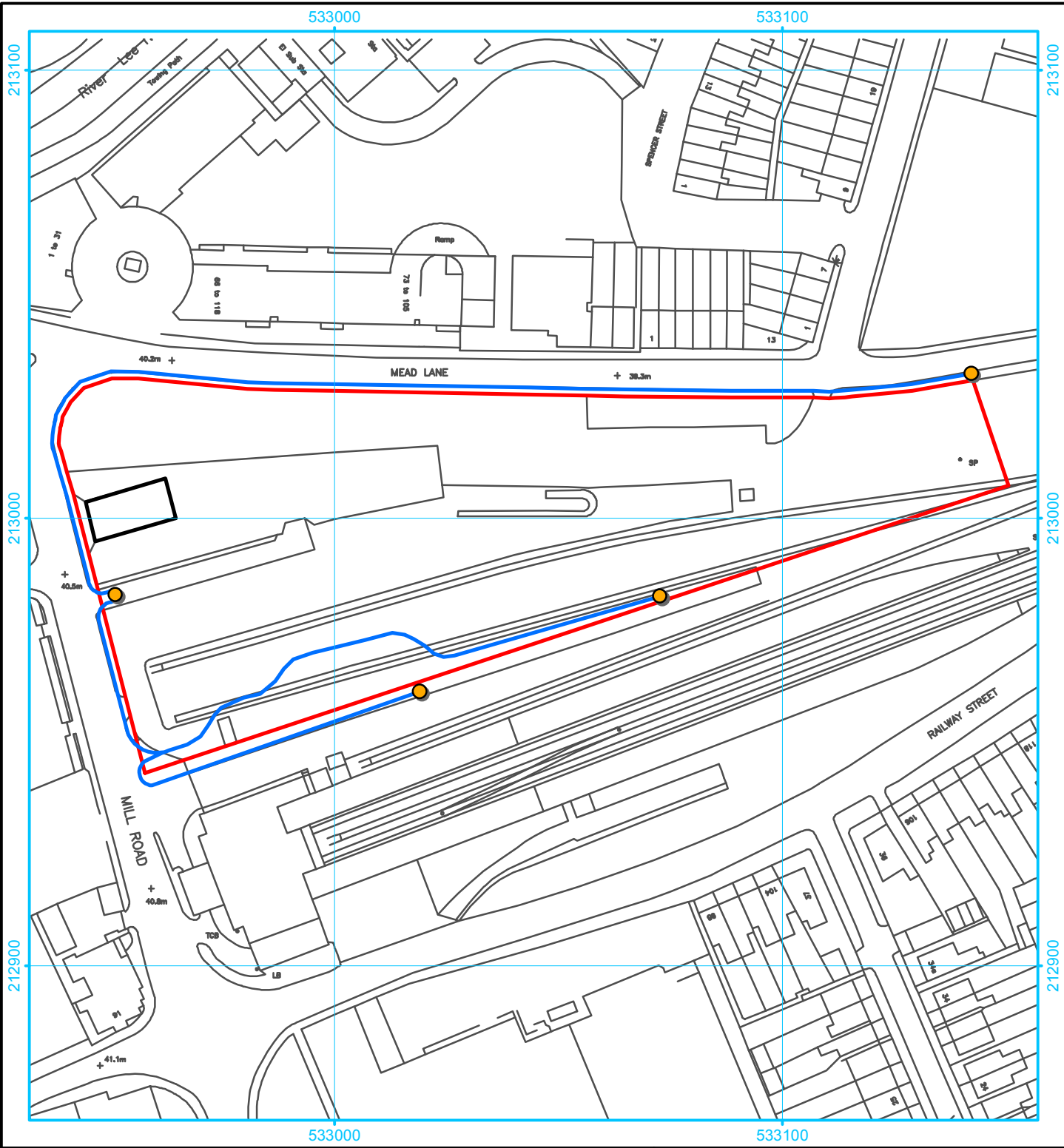


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| Project: | Hertford East Station | | |
| Title: | Location of the three Arrays of Reptile | | |
| Date: | 25/09/2011 | Scale: | 1:1,250 @A4 |
| Drawn: | BF | Checked: | AB |

Job: **JPP2798** Figure No: **2.1** Rev: **A**

Figure 2.2: Bat Activity Survey Route at Mead Lane



Project Ref: O:\JPP2798 Mead Lane, Herford\GIS\JPP2798_BatRoute.mxd

Key

- Site boundary
- Bat survey route
- Stopping point



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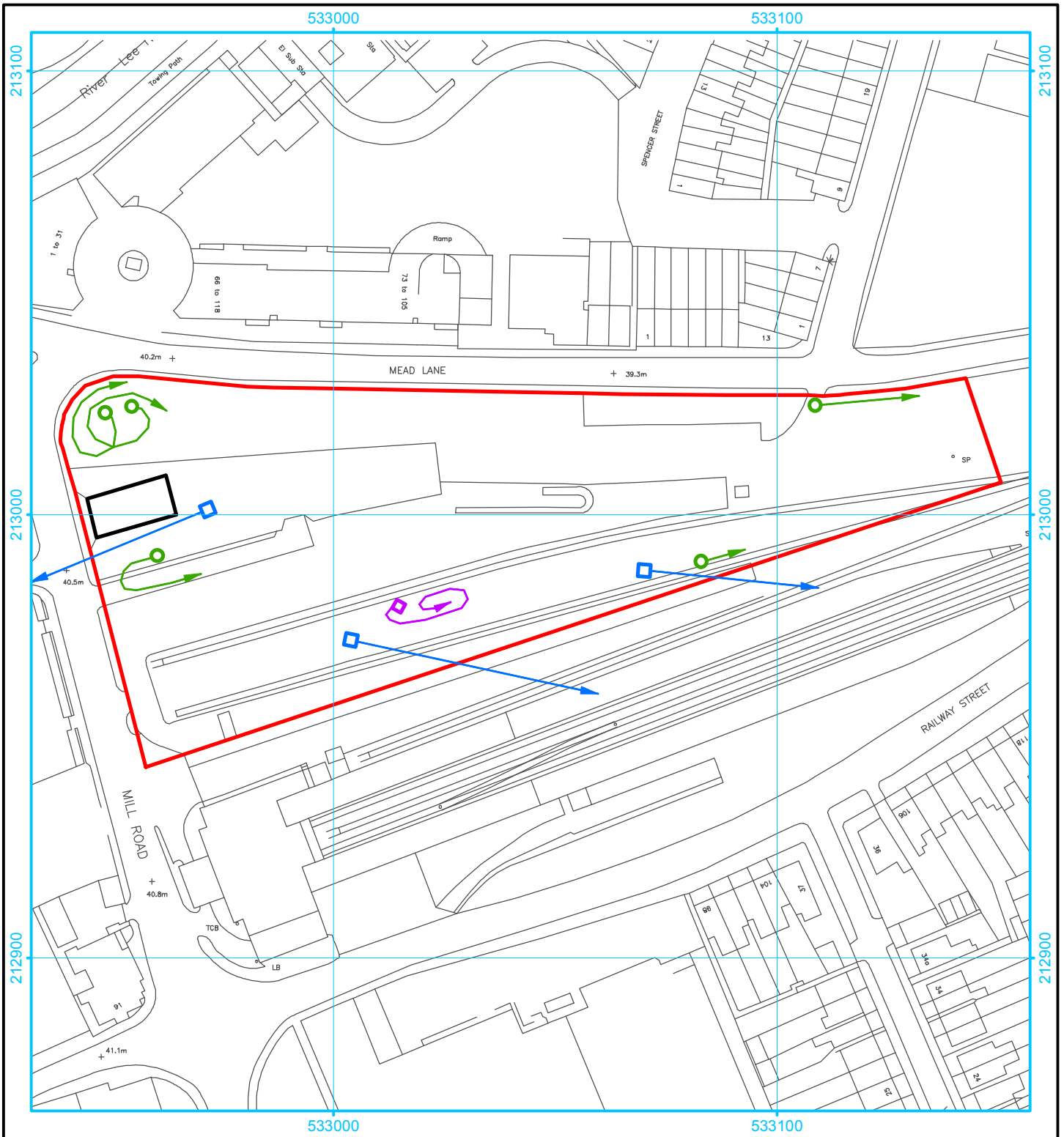
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| ■ | Client: BRB (Residuary) Ltd |
| | Project: Herford East Station |
| | Title: Bat Activity Survey Route |
| | Date: 25/09/2011 Scale: 1:1,250 @A4 |
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■ Job: **JPP2798** Figure No: **2.2** Rev: **A**



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Figure 3.1: Locations of bat passes of the three bat species recorded at Mead Lane



Key

Site boundary

Bat passes

Common Pipistrelle

Noctule

Soprano Pipistrelle



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Title: Locations of bat passes of the three bat species recorded

Date: 25/09/2011

Scale: 1:1,250 @A4

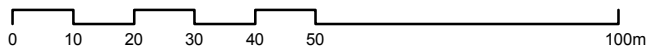
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Figure No: 3.1

Rev: A



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