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Our Ref: P7800 – CMRA.1
Date: 30th January 2017

Mr Peter Hargreaves
42 Congleton Road
Church Lawton
Stoke on Trent
ST7 3BA

Dear Mr Peter Hargreaves,

**RE: Proposed Residential Development at Rakeway Grange, Rakeway Road, Cheadle ST10 1QH.**

We have as requested carried out a Coal Mining Risk Assessment in accordance with guidance provided by the Coal Authority and as required by the Local Authority as part of the planning process.

The result of our assessment is detailed below:-

## 1.0 Introduction

We have been informed that your Client proposes to develop the existing land with residential properties, presumed to be of standard construction of two to three storey dwellings with soft landscaping and gardens with associated infrastructure.

As far as we are aware the site has not been the subject of a Desk Study (Phase 1) or Intrusive Ground Investigation (Phase 2).

Recommendations will be made as to how the risks associated with coal mining can be mitigated.

A site layout and boundary plan is included in Appendix A. A site location plan is attached to the Coal Authority mining report included in Appendix B.

## 2.0 Sources of Information

The following sources of information have been used:-

- Coal Authority Mining Report
- BGS Geological Mapping at a scale of 1:10560.
- BGS Memoir
- BGS Borehole Records

## 3.0 Identification and assessment of site specific risks

The Coal Authority (CA) mining report confirms that the site is not in an area to be affected by past underground mining. Therefore the risk posed to the ground surface from recorded workings is assessed as **negligible**.

The CA report **confirms** the likely presence of coal seams at or close to the ground surface that may have been worked at some time in the past. Accordingly the risk posed to the ground surface from any un-recorded workings in shallow coal seams is assessed as **high**.

The CA confirms that the site does not lie within 200m of the boundary of an opencast site from which coal is being removed by opencast methods. The CA confirms that the property does not lie within 800m of an opencast site for which a licence has been granted or is currently being determined. The CA confirms that the site is not within the boundary of an opencast from which coal has been removed by opencast methods. The risk from current, future or past opencast workings is therefore assessed as **negligible.**

The CA confirms that there are no known coal mining entries within, or within 20 metres of the boundary of the property. Therefore the risk to surface stability from recorded mine entries is assessed as **negligible**.

However the Coal Authority state that there may exist in the local area mine entries of which the Coal Authority have no knowledge and if shallow recorded or un-recorded workings are present beneath the site, the risk of un-recorded mine entries should be increased to **moderate.**

The CA states that there is no record of mine gas emission requiring action by the CA within the boundary of the property. It seems reasonable to conclude that the risk to the proposed development from mine gas emissions is **negligible**. However, this does not preclude a risk from ground gases from other sources.

Where coal measures strata lies close to the ground surface foundations could potentially penetrate or encounter coal seams within their excavation. There is therefore a potential for spontaneous combustion. The risk from spontaneous combustion from near surface coal seams is generally assessed as **low** but some form of precautionary mitigation might be required.

The site is underlain by the following geological formations:-

- Mid Pleistocene Diamicton Till
- Pennine Lower Coal Measures

## 4.0 Mitigation Strategy Proposed

The mitigation strategy proposed relates to the potential presence of shallow un-recorded workings and un-recorded mine entries.

The 1:10560 scale geological mapping, Geological Memoir and BGS borehole records suggest the following:-

- Nearby BGS boreholes suggest superficial deposits comprise firm to stiff, silty gravelly CLAY.

- The thickness of the superficial deposits are shown to vary across the different BGS boreholes, but is recorded to be between 2.4m and 5.3m thick.

- Pennine Lower Coal Measures rock is recorded to comprise blueish grey silty MUDSTONE. The nearest BGS boreholes are located in the river valley where rockhead is likely to be deeper, therefore it is conjectured that rockhead should be between 2.4m and 5.3m begl.

- The strata dip at approximately 6° to the west.

- The Woodhead coal seam is recorded to subcrop on the BGS map approximately 300m east of the site. Crop workings are also recorded on the map.

- The BGS memoir for the area records the Woodhead coal to be between 0.76m and 0.96m in thickness and on average 0.86m thick.

- The BGS map records an old marl pit approximately 250m east of the site with coal recorded in the base of the pit.

The BGS memoir states that the Woodhead coal is the "most widely worked of the Cheadle seams and reserves are now all but exhausted". It also states that although the seam has been worked the quality of the coal at Rakeway Colliery (located approximately 150m west of the site) was poor. No workings are recorded south of Rakeway however, due to the site being almost directly east of the colliery, it is considered probable that the Woodhead seam even at a poor quality, has been worked beneath the site by un-recorded methods.

It is conjectured that the Woodhead coal is present beneath the site between 16.9m and 18.8m below rockhead. The Rakeway Colliery records the coal seam to be present at approximately 50m begl, suggesting the seam dips at a greater angle than is recorded on the BGS map. However, using the worst case seam depth of 16.9m begl, it is conjectured that even if worked to its full extent by un-recorded methods, there will be sufficient competent rock cover above to not compromise surface stability.

There are no seams recorded above or below the Woodhead seam that could pose a risk to the surface stability of the site. It is therefore considered that the risk from un-recorded workings can be reduced to **negligible**.

The site is not at risk from current, future or past opencast workings and the level of risk as a result of our assessment will remain as **negligible.**

The risk from mine entries has been assessed as moderate based on the Coal Authority records (Section 3.0). As the Coal Authority state there can never be a 100% guarantee that no shafts are present. However, the CA hold the only definitive record and they have no record of any mine entries. As the Woodhead seam is generally of poor quality beneath the site and with a colliery nearby, it is considered unlikely that there any un-recorded mine entries will exist in the area. Therefore the risk of mine entries being present below the property has been reduced to **low to negligible.**

During construction if any anomalous features indicative of mine entries are revealed then GRM should be informed.

There are no coals present at or close to founding depths that could present a risk to structures due to the potential for combustion within the seam creating sufficient volume change to affect foundations. Therefore the risk from spontaneous combustion can be reduced from low to **negligible**.

## 5.0 Conclusion

The risks amended in line with 4.0 above can be summarised as follows:-

Recorded workings – **Negligible.**

Un-recorded shallow workings – **Negligible**.

Recorded mine entries – **Negligible.**

Un-recorded mine entries – **Low to negligible.**

Opencast workings – **Negligible**.

Mine gas emissions – **Negligible**.

Spontaneous combustion – **Negligible**.

## 6.0 Relevant Appendices

Appendix A – Site Layout and Boundary Plan

Appendix B - Coal Authority Mining Report which includes a site location plan.

We trust that the information provided is sufficient for your current requirements. if you require any additional information or clarification of the contents of this letter then do not hesitate to contact me.

Yours faithfully,

**Russell Hurcombe** MGeoSci (Hons) FGS
Geologist

**Clive Kirby** FGS C.Geol
Principal Geologist

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geoenvironmental - civil - structural

# APPENDIX A

GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

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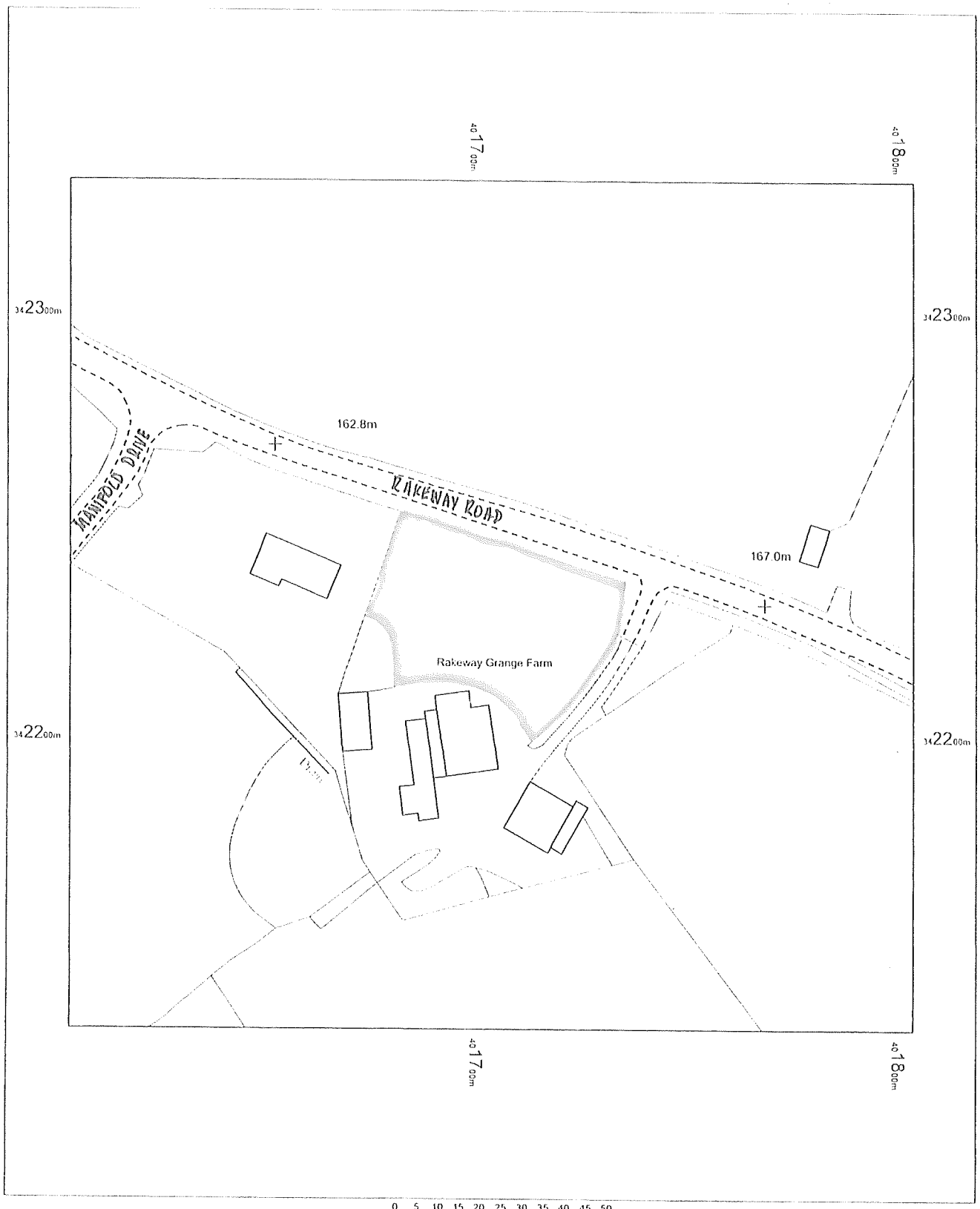


OS MasterMap 1250/2500/10000 scale
31 October 2016, ID: HMC-00572305
www.themapcentre.com

1:1250 scale print at A4, Centre: 401705 E, 342232 N

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geoenvironmental - civil - structural

# APPENDIX B

GRM Development Solutions provides
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- Geotechnical and Geo-environmental Services
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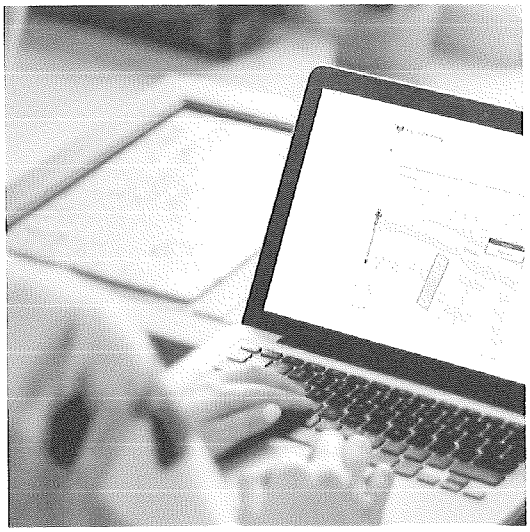
The Coal Authority

Resolving the impacts of mining



# CON29M Non-Residential Mining Report



LAND OF RAKEWAY GRANGE FARM
RAKEWAY ROAD
CHEADLE
STAFFORDSHIRE




| | |
|---|---|
| Date of enquiry: | 23 January 2017 |
| Date enquiry received: | 23 January 2017 |
| Issue date: | 23 January 2017 |
| Our reference: | 51001363161001 |
| Your reference: | P7800 |

# CON29M Non-Residential Mining Report

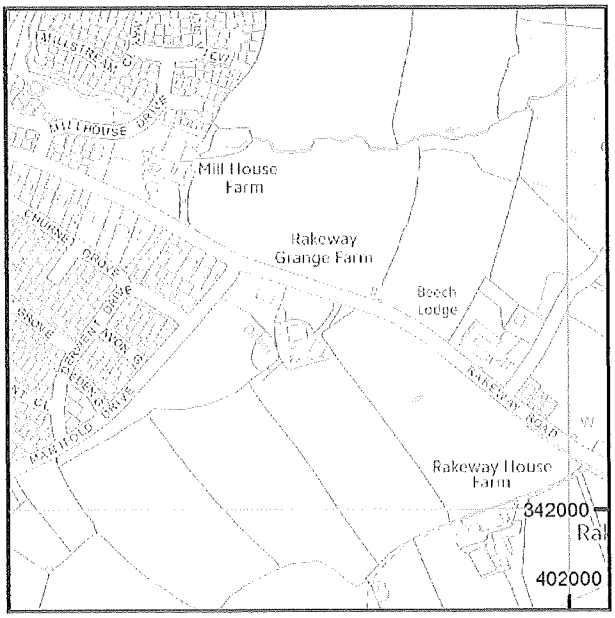
This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

**Client name**

GRM DEVELOPMENT SOLUTIONS LIMITED

**Enquiry address**

LAND OF RAKEWAY GRANGE FARM, RAKEWAY ROAD, CHEADLE, STAFFORDSHIRE




Approximate position of property

Map data

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200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

/company/the-coal-authority
/thecoalauthority
/coalauthority

# Summary

| Has the search report highlighted evidence or potential of | | |
|---|---|---|
| 1 | Past underground coal mining | Yes |
| 2 | Present underground coal mining | No |
| 3 | Future underground coal mining | Yes |
| 4 | Mine entries | Yes |
| 5 | Coal mining geology | No |
| 6 | Past opencast coal mining | No |
| 7 | Present opencast coal mining | No |
| 8 | Future opencast coal mining | No |
| 9 | Coal mining subsidence | No |
| 10 | Mine gas | No |
| 11 | Hazards related to coal mining | No |
| 12 | Withdrawal of support | No |
| 13 | Working facilities order | No |
| 14 | Payments to owners of former copyhold land | No |
| 15 | Information from the Cheshire Brine Subsidence Compensation Board | No |

**For detailed findings, please go to page 4.**

# Detailed findings

### 1. Past underground coal mining

The property is not within a surface area that could be affected by past underground mining.

However the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity. Your attention is drawn to the Comments on the Coal Authority information section of the report.

### 2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

### 3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

### 4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

There may however be mine entries/additional mine entries in the local area which the Coal Authority has no knowledge of.

### 5. Coal mining geology
The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

### 6. Past opencast coal mining
The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

### 7. Present opencast coal mining
The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

### 8. Future opencast coal mining
There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

### 9. Coal mining subsidence
The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

### 10. Mine gas
The Coal Authority has no record of a mine gas emission requiring action.

### 11. Hazards related to coal mining
The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

### 12. Withdrawal of support
The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

### 13. Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

### 14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

### 15. Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

# Comments on the Coal Authority information

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In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

## Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

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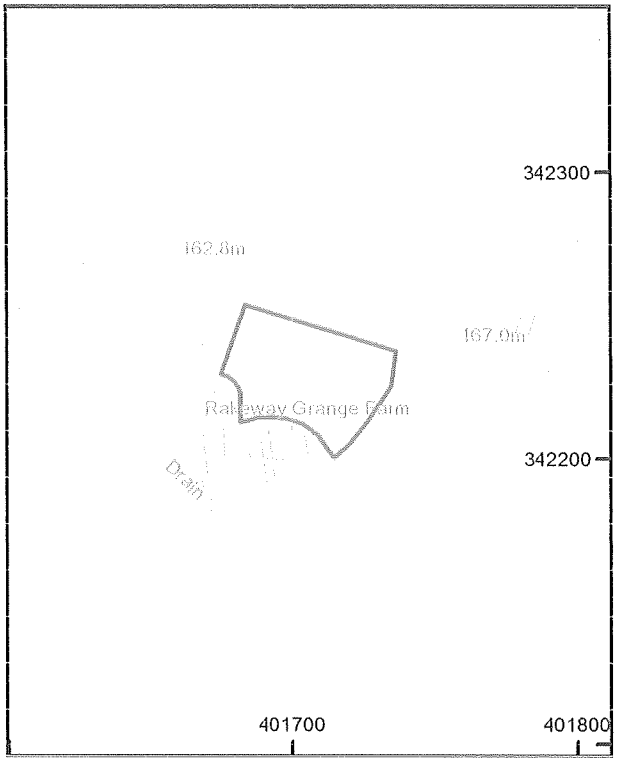
# Enquiry boundary

**Key**

Approximate position of enquiry boundary shown

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