



ARKIV

Statens vegvesen Buskerud vegkontor
Pb. 2265
3003 DRAMMEN,

FOR ARKEOLOGI, KUNSTHISTORIE OG NUMISMATIKK	
Universitetet i Oslo	
Saksb.: JHL	Kopi: 27 NOV 1998
Ark.: 06	
Saksnr. 98/7420	Dok. nr.: 1

Saksbeh: Knut Paasche
Dir. tlf: 32 80 85 93
Telefaks: 32 80 86 72
Vår ref: 98/1065-4 (Oppgis ved henv.)
Arkivkode:
Vår dato: 19.11.98
Deres dato: 02.07.98
Deres ref: 97/03152-029

Sokna-Ørgenvika, konsekvensutredning til offentlig høring

Konsekvensutredningen for ny riksveg 7 Sokna-Ørgenvika er ført i pennen av Statens vegvesen Buskerud og kom ut i juni 1998. Feltarbeidet for kulturminner ble utført av kulturavdelingen i fylkeskommunen allerede i 1993 og 1994. Ansvar for arbeidet i Buskerud fylkeskommune var Inger Liv Gøytil Lund når det gjelder det arkeologiske arbeidet og Jørn Jensen for nyere tids kulturminner. Feltarbeidet ble gjennomført av Anne Saastad og Lise Talleraas (nyere tid) og Knut Paasche (arkeologi). I tillegg til konsekvensutredningen foreligger det på kulturminnesiden to rapporter:

1. Konsekvenser for kulturminner (nyere tids kulturminner og), Anne Saastad og Lise Talleraas 1993.
2. Arkeologiske registreringer, Knut Paasche 1994.

Den endelige konsekvensutredningen trekker sine slutninger på grunnlag av disse to, og kulturminnehensynene er derfor slik vi ser det tilstrekkelig belyst. Vi vil likevel bemerke at rapporten for nyere tids kulturminner kunne vært tydeligere når det gjelder verneverdien til de enkelte objektene (gårdstun eller andre bygningsmiljøer).

Temakartet for kulturminner og kulturmiljøer har vi også merknader til. For nyere tids kulturminner skilles det mellom "Vernet eller registrert verneverdig" og "Andre viktige objekter". Så vidt vi kan se er det bare Lunder kirke og Sokna stasjon som er plassert i første kategori, begge disse kulturmiljøene har et mer formelt vern og kunne kalles "Vernet". Mange av de andre objektene som kalles "Andre viktige objekter" er helt klart verneverdige, og dette begrepet som er mye brukt i slike sammenhenger, burde anvendes her.

Slik vi ser det er undersøkelseplikten med denne konsekvensutredningen likevel ikke tilstrekkelig opplyst i henhold til kulturminnelovens § 9. Store arealer og liten detaljeringsgrad gjør at en, spesielt for de automatisk fredete kulturminne, må komme inn også på et seinere planstadium. Behovet for ytterligere kulturminneregistreringer er også understreket under kap. 5.5.1 i konsekvensutredningen. Slik vi ser det er det for kulturminnevernet ikke nødvendig med tilleggsundersøkelser på konsekvensutredningsnivå.

Konsekvensutredningen må sees i sammenheng med kommunedelplanen for Sokna-Ørgenvika i Ringerike og Krødsherad kommune. Det er her det endelige vedtaket om fastlegging av vegtrasé fastsettes. Vanligvis vil heller ikke en kommunedelplan gi tilstrekkelig grunnlagsmateriale for i detalj å kunne vurdere hvorvidt den foreslåtte arealdisponeringen innebærer konflikt i forhold til automatisk fredete kulturminner. Arealbruken vil først bli avklart når de enkelte reguleringsplaner sendes til

fylkeskommunen som sektormyndighet for kulturminnevern. I dette tilfellet, hvor det er valgt et alternativ som skal planlegges videre, tror vi det kan være en fordel å foreta detaljregistreringer på kommunedelplannivå.

Selv om det vil være naturlig med enkelte detaljregistreringer på reguleringsplannivå, forventer vi ikke at det hovedbildet vi sitter igjen med etter registreringene i 1993 og 94 skal forandre seg nevneverdig. Spesielt i utmarksområdene regner vi ikke med at det bildet, med relativt få spor etter bruken av utmarka i forhistorisk tid, vil forandre seg nevneverdig på et seinere planstadium.

På s. 8 i konsekvensutredningen konkluderes det med at det i Krødsherad ikke berøres viktige kulturminner. Det er her registrert et område med såkalt fossil dyrket mark (se s. 6 i rapporten fra de arkeologiske registreringene). Dette er spor etter tidligere tiders åkerlandskap i form av rydningsrøyser og åkerterrasser. Disse kulturminnene kan gå tilbake til tiden før 1537, og vil således kunne regnes som automatisk fredete. Området berøres av samtlige traséalternativer. Det samme gjentas på s. 43 og 53, hvor det står at den planlagt traséen her ikke kommer i konflikt med registrerte kulturminner, noe som altså ikke medfører riktighet.

Konsekvensutredningen inneholder ikke alternativer for arkitektoniske og estetiske utforminger av tiltaket og beskrivelse av konsekvenser for estetiske hensyn, slik det skal ifølge forskrift om konsekvensutredninger av 13.12.1996. Dette er uheldig, men må sees i sammenheng med at grunnlagsarbeid for konsekvensutredningen ble gjennomført før den nye forskriften ble tatt i bruk.

Med hilsen



Gei Helgen e f
fylkeskonservator



Knut Paasche
fylkesarkeolog

Kopi m. vedlegg:

Riksantikvaren
Universitetets Oldsaksamling / IAKN
Regionalavdelingen / her

TILLEGG TIL

ARKEOLOGISK REGISTRERING RV. 7 SOKNA - ØRGENVIKA
Parsell: Sokna-Breivassdammen og Breivassdammen-Ørgenvika.

Knut Paasche, april 1995.

Etter å ha mottatt C-14 dateringer fra kullprøver er det grunnlag for å presisere konklusjonene fra registreringsrapporten. Det er flere konflikter mellom ulike forslag til vegtrasé og automatisk fredete kulturminner (Dateringsrapport fra Beta Analytical Inc. Florida, 1995).

Det er datert i alt syv forskjellige C-14 prøver:

BETA-77887	R1	Cal AD 1650	trolig nyere tid
BETA-77888	R2	Cal AD 1675-1945	nyere tid
BETA-77889	R5	Cal AD 555	overgangen eldre yngre jernalder
BETA-77890	R8	Cal AD 1640	mulig middelalder
BETA-77891	R9	Cal AD 1295	middelalder
BETA-77892	R13	Cal AD 1650	trolig nyere tid
BETA-77893	R19	Cal AD 1425	middelalder

Det må regnes som interessant at det er registret kullgroper av samme størrelse og type både fra yngre jernalder, middelalder og nyere tid. Det vanligste er at metoden med brenning av kull i grop endres til brenning av kull i kullmiler eller såkalte industrimiler utover på 1500-tallet.

For konfliktvurderingene i registreringsrapporten (Paasche 1994:7) betyr disse dateringene følgende:

Konflikten mellom R1 og R2 og lenke A og lenke B faller bort, da disse kullgropene R1 og R2 høyst sannsynlig er fra nyere tid eller etter år 1537.

I forhold til de fire hovedalternativene betyr dateringene likevel at det er mindre konflikter uansett valg av trasé. Flere av kullgropene som er datert er fra middelalderen eller yngre jernalder, og det må regnes som svært sannsynlig at flere av de andre (ikke daterte kullgropene) da også kan være forhistoriske.

Dateringene bekrefter at et eventuelt veganlegget bør følges opp videre etter endelig valg av trasé. Dette for å se om det er flere kullgroper eller andre kulturminner som ennå ikke er registrert, men også med tanke på eventuelle jernutvinningsanlegg i tilknytning til kullgropene.

BETA ANALYTIC INC.

DR. MURRY TAMERS
MR. DARDEN HOOD
Co-directors

4985 SW 74 COURT
MIAMI, FL 33155
U.S.A.

To: Dr. Inger Liv Goytil Lund
Hulturadm, Busherud Plyhe
Hauges Gate 89
3020 Drammenm, Norway

Your fax number FAX 011 47 3280 8672

February 19, 1996

Dear Dr. Lund:

Two samples submitted for standard conventional analysis contain less than 1 gram of suitable carbon and require the extended counting service for precise results. The additional cost is \$135.00 per sample. After pretreatments, approximately 1/2 of the original sample was remaining. This is very typical.

If precision of +/- 100 to 150 is acceptable, we may proceed with standard analysis. Extended counting will give +/-'s as close to 100 as is possible.

Please send instructions. Should we proceed with standard analysis or extended counting.

Sincerely,

Darden Hood
Co-director
Tele. 1 305 667 5167
FAX 1 305 663 0964
beta@analytic.win.net
<http://www.win.net/~analytic>



BETA ANALYTIC INC.

DR. J.J. STIPP and DR. M.A. TAMERS

UNIVERSITY BRANCH
4985 S.W. 74 COURT
MIAMI, FLORIDA, USA 33155
PH: 305/667-5167 FAX: 305/663-0964
E-mail: beta@analytic.win.net

REPORT OF RADIOCARBON DATING ANALYSES

FOR: Dr. Inger Liv Goyti, Lund
Hulturadm, Busherud Plyhe

DATE RECEIVED: December 14, 1994

DATE REPORTED: January 9, 1995

Sample Data	Measured C14 Age	C13/C12 Ratio	Conventional C14 Age (*)
Beta-77892 CAMS-17341 SAMPLE #: R13 ANALYSIS: AMS MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid	290 +/- 50 BP	-25.9 o/oo	280 +/- 50 BP
Beta-77893 CAMS-17342 SAMPLE #: R19 ANALYSIS: AMS MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid	500 +/- 60 BP	-25.2 o/oo	500 +/- 60 BP

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By International convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.



BETA ANALYTIC INC.

DR. J.J. STIPP and DR. M.A. TAMERS

UNIVERSITY BRANCH
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MIAMI, FLORIDA, USA 33155
PH: 305/667-5167 FAX: 305/663-0964
E-mail: beta@analytic.win.net

REPORT OF RADIOCARBON DATING ANALYSES

FOR: Dr. Inger Liv Goytjil Lund
Hulturadm, Busherud Plyhe

DATE RECEIVED: September 19, 1994

DATE REPORTED: October 27, 1994

Sample Data	Measured C14 Age	C13/C12 Ratio	Conventional C14 Age (*)
Beta-76301	870 +/- 70 BP	-25.0* o/oo	870 +/- 70* BP

SAMPLE #: X106

ANALYSIS: radiometric-standard

MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid

Beta-76304	600 +/- 70 BP	-25.0* o/oo	600 +/- 70* BP
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SAMPLE #: X131

ANALYSIS: radiometric-standard

MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid

NOTE: four (4) additional samples (X76,97,110,120) were submitted, but not analyzed pending instructions.

*Knut
Kom du ta kopier
av C₁₄ dat. +
rapport og sende til
Jan Henning.*

Dates are reported as RCYBP (radiocarbon years before "present" = 1950A.D.). By International convention, the reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

relative to the PDB-1
... and the RCYBP ages were normalized to
-25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.



BUSKERUD FYLKESKOMMUNE

3020 Drammen

Besøksadresse: Hauges gate 89

Telefon 32 80 85 00

KULTURADMINISTRASJONEN

Telefaxnr. 32 80 86 72

TELEFAX

TIL: BETA ANALYTIC INC.....

FRA: KULTURADMINISTRASJONEN
INGER LIV GAYTIL LUMR.....

DATO: 26.02.96.....

ANTALL SIDER (medregnet denne): 2.....

TIL FAXNR.: 00 1 305 663 0964.....

BESKJED: PLEASE PROCEED WITH
STANDARD ANALYSIS.....



BETA ANALYTIC INC.

DR. MURRY TAMERS
MR. DARDEN HOOD
Co-directors

4985 SW 74 COURT
MIAMI, FL 33155
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Sincerely,

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25.2:lab. mult=1)

Laboratory Number: Beta-77893

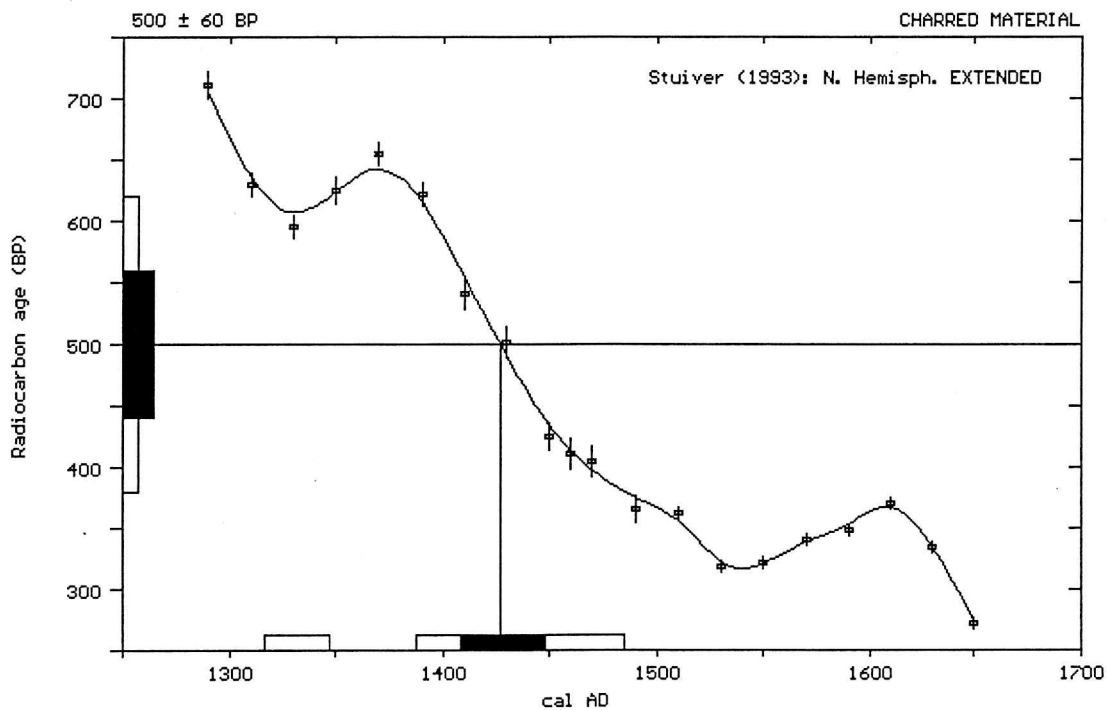
Conventional radiocarbon age: 500 +/- 60 BP

Calibrated results:
(2 sigma, 95% probability) cal AD 1315 to 1345 and
cal AD 1390 to 1485

Intercept data:

Intercept of radiocarbon age
with calibration curve: cal AD 1425

1 sigma calibrated results:
(68% probability) cal AD 1410 to 1450



References:

- Vogel, J. C., Fuls, A., Visser, E. and Becker, B., 1993, *Radiocarbon* 35(1), p73-86
Talma, A. S. and Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322
Stuiver, M., Long, A., Kra, R. S. and Devine, J. M., *Radiocarbon* 35(1)

Results prepared by:

Beta Analytic, Inc. 4985 S.W. 74th Court, Miami, Florida 33155

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25.9:lab. mult=1)

Laboratory Number: Beta-77892

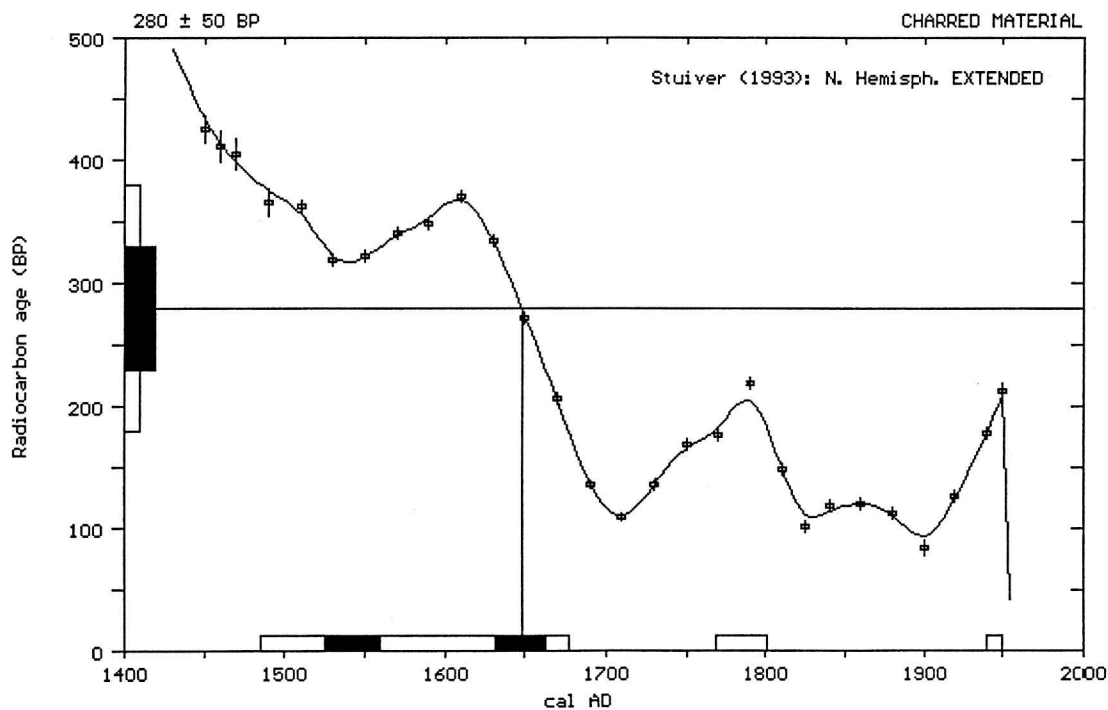
Conventional radiocarbon age: 280 +/- 50 BP

Calibrated results: cal AD 1485 to 1675 and
(2 sigma, 95% probability) cal AD 1770 to 1800 and
cal AD 1940 to 1950

Intercept data:

Intercept of radiocarbon age
with calibration curve: cal AD 1650

1 sigma calibrated results: cal AD 1525 to 1560 and
(68% probability) cal AD 1630 to 1665



References:

- Vogel, J. C., Fuls, A., Visser, E. and Becker, B., 1993, *Radiocarbon* 35(1), p73-86
Talma, A. S. and Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322
Stuiver, M., Long, A., Kra, R. S. and Devine, J. M., *Radiocarbon* 35(1)

Results prepared by:

Beta Analytic, Inc. 4985 S.W. 74th Court, Miami, Florida 33155

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: estimated C13/C12=-25:lab mult.=1)

Laboratory Number: Beta-77891

Conventional radiocarbon age*: 680 +/- 90 BP

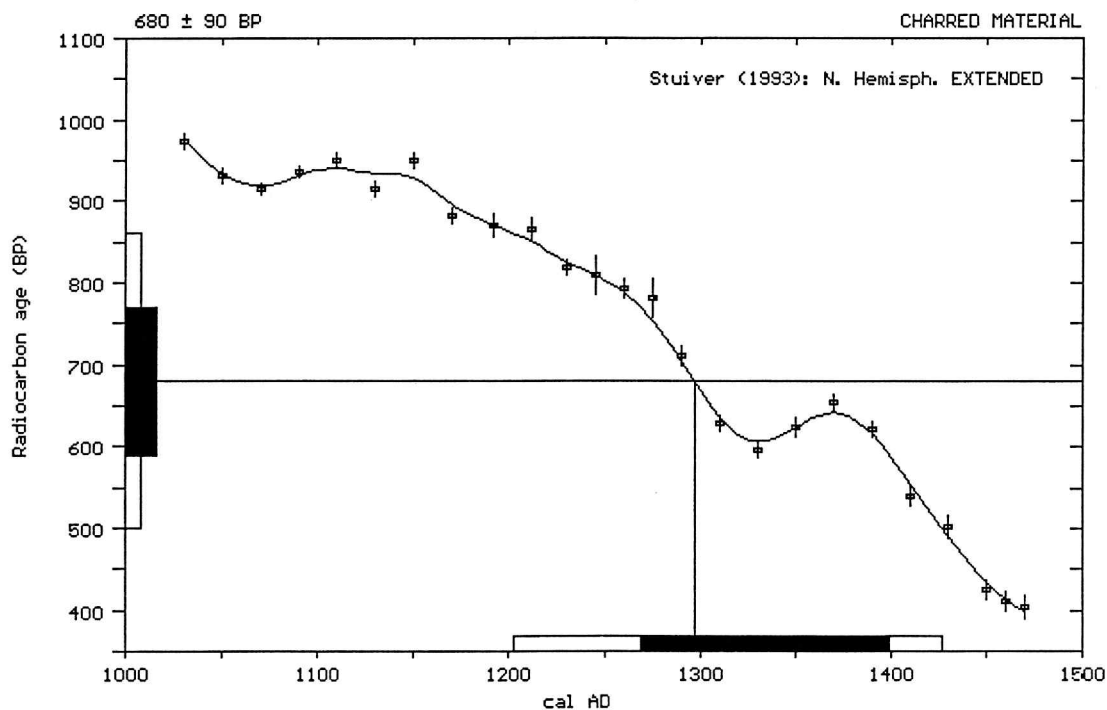
Calibrated results: cal AD 1205 to 1425
(2 sigma, 95% probability)

* C13/C12 ratio estimated

Intercept data:

Intercept of radiocarbon age
with calibration curve: cal AD 1295

1 sigma calibrated results: cal AD 1270 to 1400
(68% probability)



References:

- Vogel, J. C., Fuls, A., Visser, E. and Becker, B., 1993, *Radiocarbon* 35(1), p73-86
Talma, A. S. and Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322
Stuiver, M., Long, A., Kra, R. S. and Devine, J. M., *Radiocarbon* 35(1)

Results prepared by:

Beta Analytic, Inc. 4985 S.W. 74th Court, Miami, Florida 33155

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: estimated C13/C12=-25:lab mult.=1)

Laboratory Number: Beta-77890

Conventional radiocarbon age*: 310 +/- 80 BP

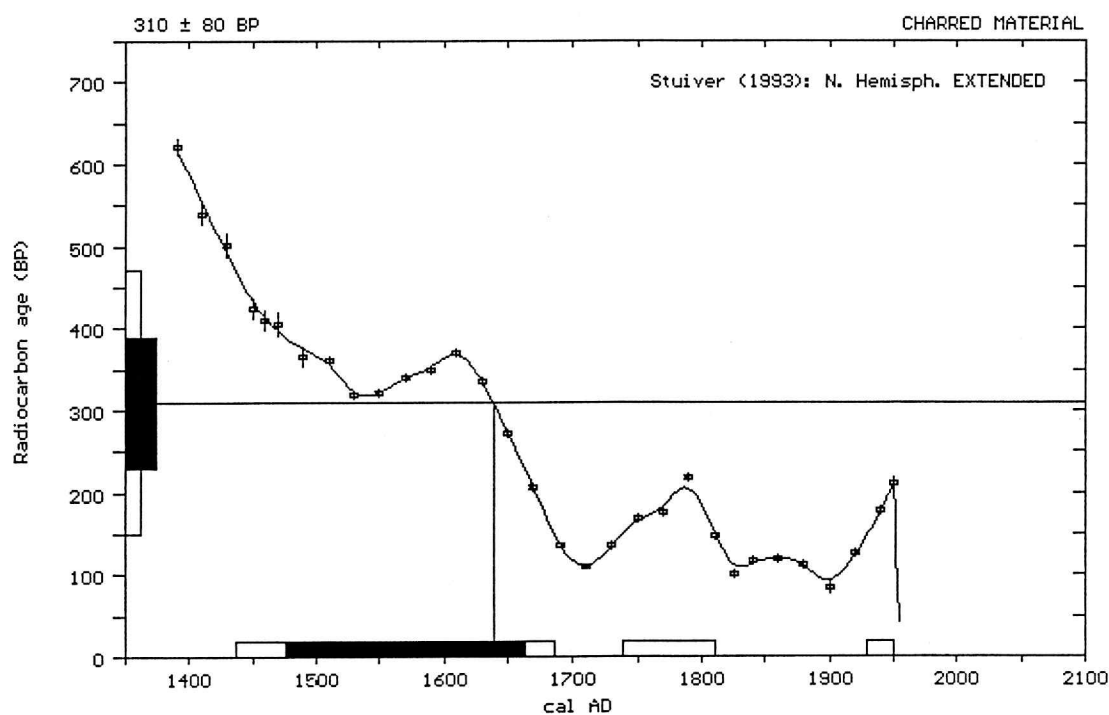
Calibrated results: cal AD 1435 to 1685 and
(2 sigma, 95% probability) cal AD 1740 to 1810 and
cal AD 1930 to 1950

* C13/C12 ratio estimated

Intercept data:

Intercept of radiocarbon age
with calibration curve: cal AD 1640

1 sigma calibrated results: cal AD 1475 to 1665
(68% probability)



References:

- Vogel, J. C., Fuls, A., Visser, E. and Becker, B., 1993, *Radiocarbon* 35(1), p73-86
Talma, A. S. and Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322
Stuiver, M., Long, A., Kra, R. S. and Devine, J. M., *Radiocarbon* 35(1)

Results prepared by:

Beta Analytic, Inc. 4985 S.W. 74th Court, Miami, Florida 33155

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: estimated C13/C12=-25; lab mult.=1)

Laboratory Number: Beta-77889

Conventional radiocarbon age*: 1530 +/- 60 BP

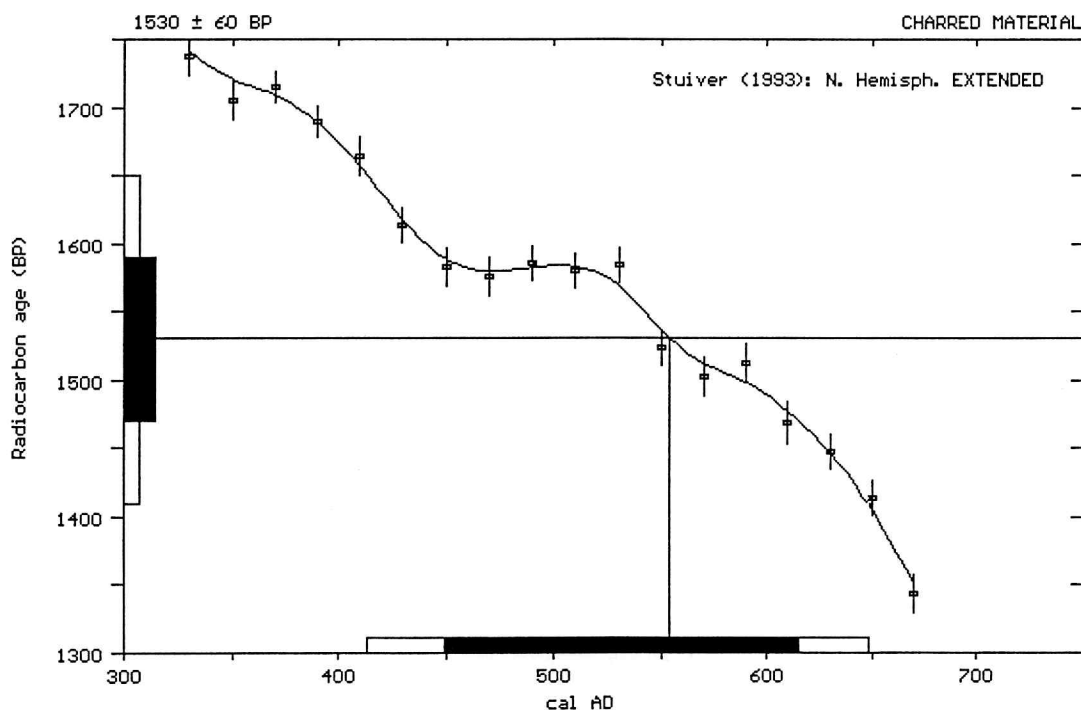
Calibrated results: cal AD 415 to 650
(2 sigma, 95% probability)

* C13/C12 ratio estimated

Intercept data:

Intercept of radiocarbon age
with calibration curve: cal AD 555

1 sigma calibrated results: cal AD 450 to 615
(68% probability)



References:

- Vogel, J. C., Fuls, A., Visser, E. and Becker, B., 1993, *Radiocarbon* 35(1), p73-86
- Talma, A. S. and Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322
- Stuiver, M., Long, A., Kra, R. S. and Devine, J. M., *Radiocarbon* 35(1)

Results prepared by:

Beta Analytic, Inc. 4985 S.W. 74th Court, Miami, Florida 33155

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: estimated C13/C12=-25; lab mult.=1)

Laboratory Number: Beta-77888

Conventional radiocarbon age*: 190 +/- 80 BP

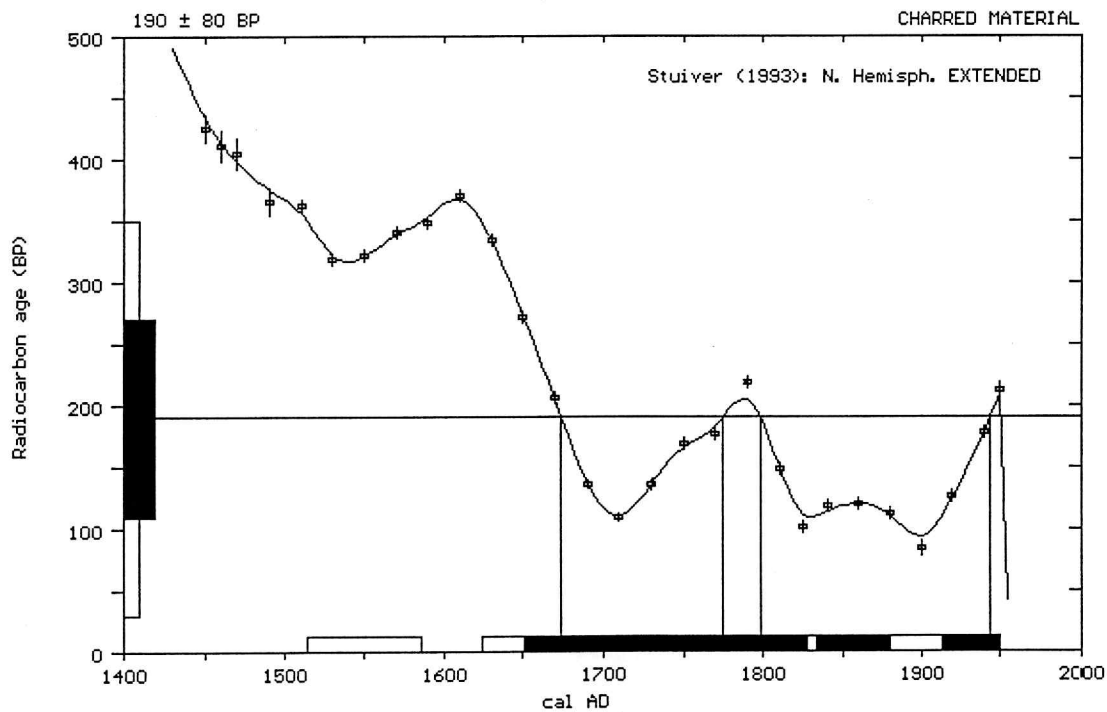
Calibrated results: cal AD 1515 to 1585 and
(2 sigma, 95% probability) cal AD 1625 to 1950

* C13/C12 ratio estimated

Intercept data:

Intercepts of radiocarbon age
with calibration curve: cal AD 1675 and
cal AD 1775 and
cal AD 1800 and
cal AD 1945

1 sigma calibrated results: cal AD 1650 to 1825 and
(68% probability) cal AD 1835 to 1880 and
cal AD 1915 to 1950



References:

- Vogel, J. C., Fuls, A., Visser, E. and Becker, B., 1993, *Radiocarbon* 35(1), p73-86
Talma, A. S. and Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322
Stuiver, M., Long, A., Kra, R. S. and Devine, J. M., *Radiocarbon* 35(1)

Results prepared by:

Beta Analytic, Inc. 4985 S.W. 74th Court, Miami, Florida 33155

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: estimated C13/C12=-25:lab mult.=1)

Laboratory Number: Beta-77887

Conventional radiocarbon age*: 270 +/- 70 BP

Calibrated results:
(2 sigma, 95% probability)

cal AD 1460 to 1695 and
cal AD 1725 to 1815 and
cal AD 1920 to 1950

* C13/C12 ratio estimated

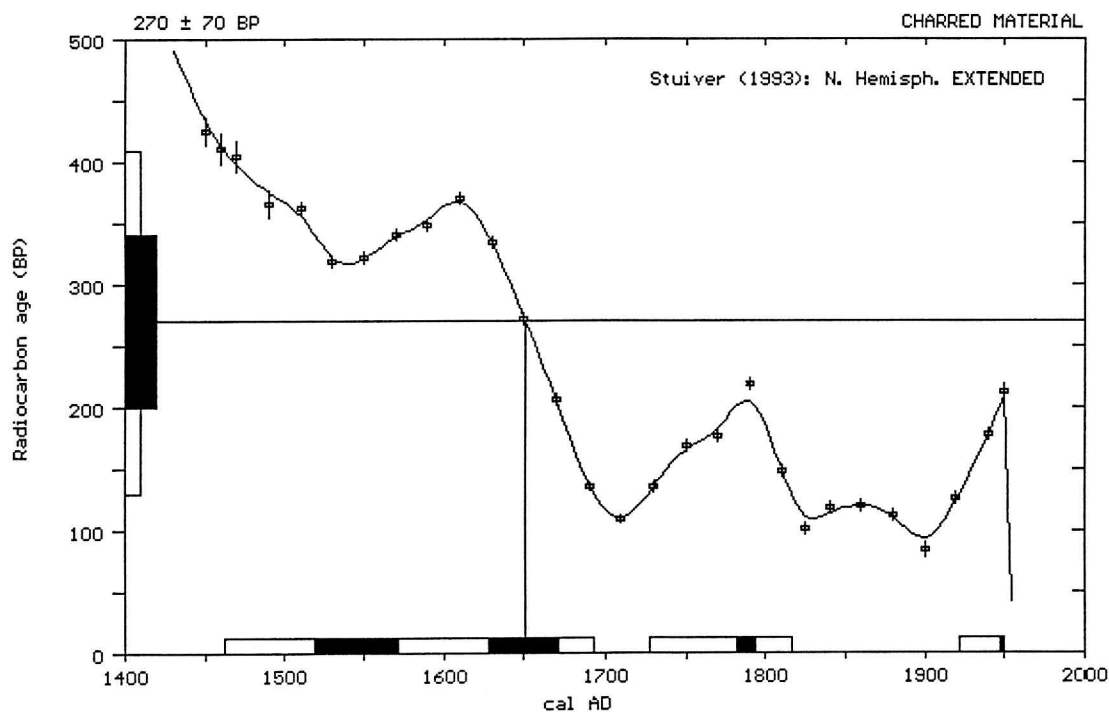
Intercept data:

Intercept of radiocarbon age
with calibration curve:

cal AD 1650

1 sigma calibrated results:
(68% probability)

cal AD 1520 to 1570 and
cal AD 1630 to 1670 and
cal AD 1780 to 1795 and
cal AD 1945 to 1950



References:

- Vogel, J. C., Fuls, A., Visser, E. and Becker, B., 1993, *Radiocarbon* 35(1), p73-86
Talma, A. S. and Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322
Stuiver, M., Long, A., Kra, R. S. and Devine, J. M., *Radiocarbon* 35(1)

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: estimated C13/C12=-25; lab mult.=1)

Laboratory Number: Beta-76304

Conventional radiocarbon age*: 600 +/- 70 BP

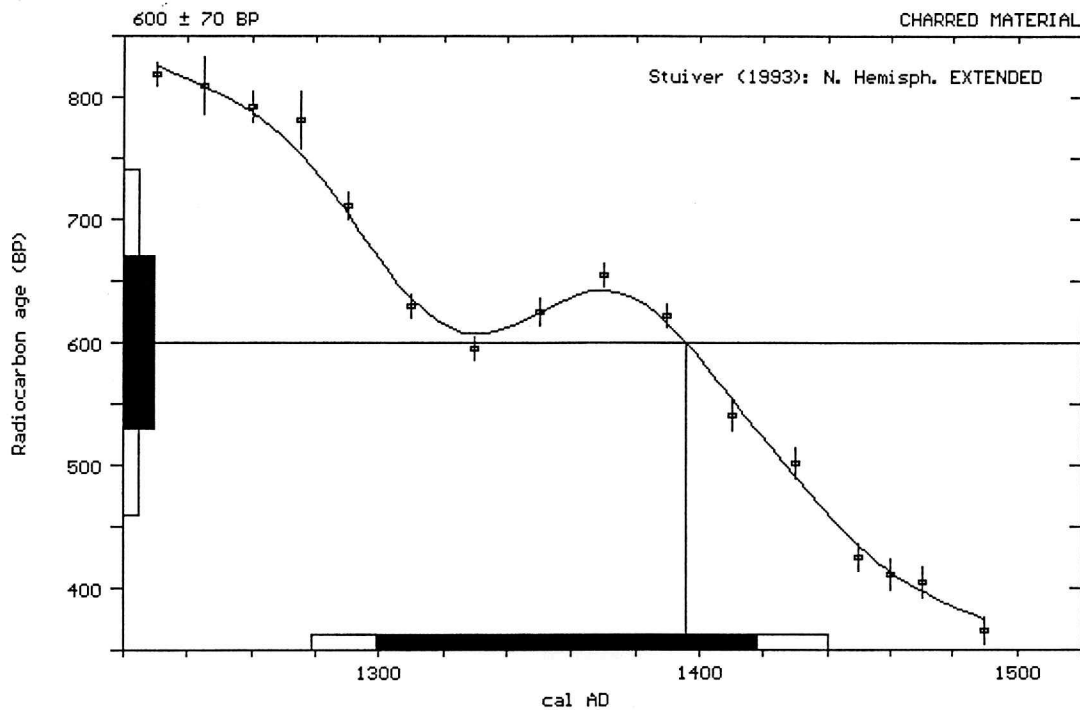
Calibrated results: cal AD 1280 to 1440
(2 sigma, 95% probability)

* C13/C12 ratio estimated

Intercept data:

Intercept of radiocarbon age
with calibration curve: cal AD 1395

1 sigma calibrated results: cal AD 1300 to 1420
(68% probability)



References:

- Vogel, J. C., Fuls, A., Visser, E. and Becker, B., 1993, *Radiocarbon* 35(1), p73-86
Talma, A. S. and Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322
Stuiver, M., Long, A., Kra, R. S. and Devine, J. M., *Radiocarbon* 35(1)

Results prepared by:

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: estimated C13/C12=-25:lab mult.=1)

Laboratory Number: Beta-76301

Conventional radiocarbon age*: 870 +/- 70 BP

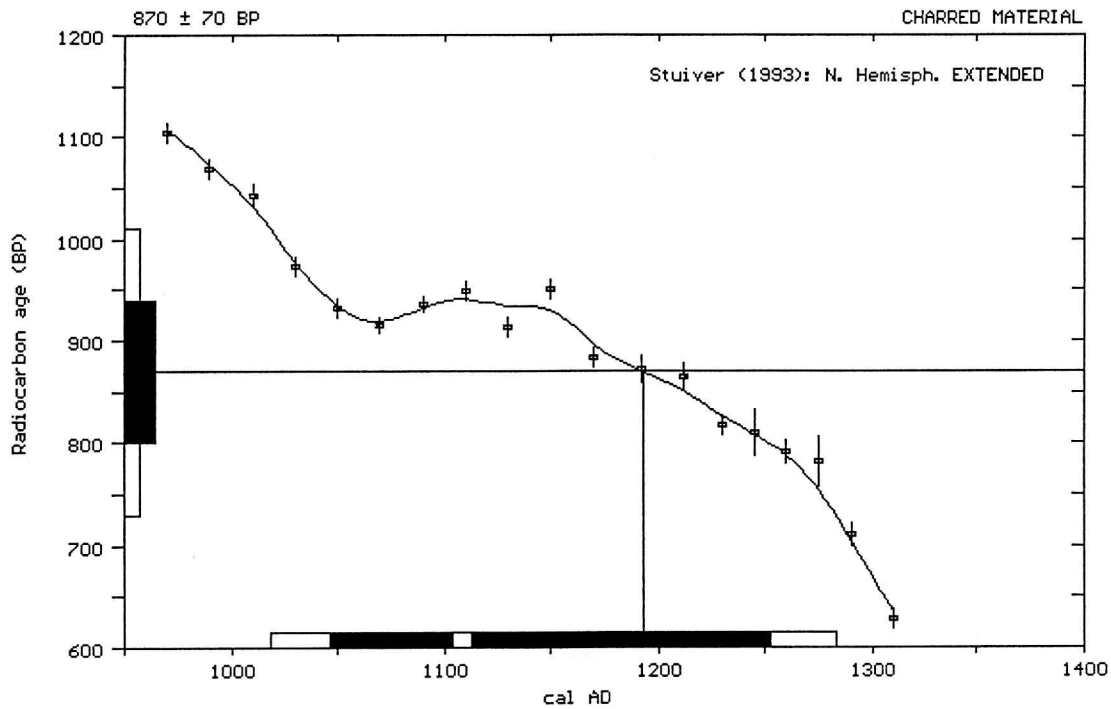
Calibrated results: cal AD 1020 to 1285
(2 sigma, 95% probability)

* C13/C12 ratio estimated

Intercept data:

Intercept of radiocarbon age
with calibration curve: cal AD 1195

1 sigma calibrated results: cal AD 1045 to 1105 and
(68% probability) cal AD 1115 to 1250



References:

- Vogel, J. C., Fuls, A., Visser, E. and Becker, B., 1993, *Radiocarbon* 35(1), p73-86
Talma, A. S. and Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322
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Results prepared by:

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BETA ANALYTIC INC.

DR. J.J. STIPP and DR. M.A. TAMERS

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REPORT OF RADIOCARBON DATING ANALYSES

FOR: Dr. Inger Liv Goytil Lund

PAGE: 2 of 2

Sample Data

Measured
C14 Age

C13/C12
Ratio

Conventional
C14 Age (*)

NOTE: Two additional samples, R13 and R19, were converted from radiometric analysis to AMS analysis due to small sample size. They are presently being analysed by AMS and will be reported at a later date.

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By International convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.



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REPORT OF RADIOCARBON DATING ANALYSES

FOR: Dr. Inger Liv Goytøl Lund
Hulturadm, Buserud Plyhe

DATE RECEIVED: November 15, 1994

DATE REPORTED: December 21, 1994

Sample Data	Measured C14 Age	C13/C12 Ratio	Conventional C14 Age (*)
Beta-77887	270 +/- 70 BP	-25.0* o/oo	270 +/- 70* BP
SAMPLE #: R1 ANALYSIS: radiometric-standard MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid COMMENT: the small sample was given extended counting time			
Beta-77888	190 +/- 80 BP	-25.0* o/oo	190 +/- 80* BP
SAMPLE #: R2 ANALYSIS: radiometric-standard MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid			
Beta-77889	1530 +/- 60 BP	-25.0* o/oo	1530 +/- 60* BP
SAMPLE #: R5 ANALYSIS: radiometric-standard MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid			
Beta-77890	310 +/- 80 BP	-25.0* o/oo	310 +/- 80* BP
SAMPLE #: R8 ANALYSIS: radiometric-standard MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid COMMENT: the small sample was given extended counting time			
Beta-77891	680 +/- 90 BP	-25.0* o/oo	680 +/- 90* BP
SAMPLE #: R9 ANALYSIS: radiometric-standard MATERIAL/PRETREATMENT:(charred material): acid/alkali/acid COMMENT: the small sample was given extended counting time			

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Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

C14

Gård	Bnr	C14nr	Lab	Labnr	Matrrial	Gn	Bruk	Jour	Plan	Navn	Kom	ato	Sig	Fel	Dat/kon	Cal1s	Cal2s
			2 Beta	76304											600+/-70	AD1300-1420	AD1280-144
			1 Beta	76301											870+/-70	AD1045-1105	AD1020-128
	1		9 Beta	77893	Trekull	151		RV	RV. 7	Sokna-Ørgenvika	Ringeri	05.94	KP	19	500+/-60	AD1410-1450	AD1315-134
	1		8 Beta	77892	Trekull	157		RV	RV. 7	Sokna-Ørgenvika	Ringeri	05.94	KP	13	280+/-50B	AD1525-1560	AD1485-167
	1		5 Beta	77889	Trekull	161		RV	RV. 7	Sokna-Ørgenvika	Ringeri	05.94	KP	5	1530+/-60	AD450-615	AD415-650
	3		7 Beta	77891	Trekull	311		RV	RV. 7	Sokna-Ørgenvika	Ringeri	05.94	KP	9	680+/-90B	AD1270-1400	AD1205-142
	5		6 Beta	77890	Trekull	312	Nordtjernli	RV	RV. 7	Sokna-Ørgenvika	Ringeri	05.94	KP	8	310+/-80B	AD1475-1665	AD1435-168
Hovland	1		3 Beta	77887	Trekull	140		RV	RV. 7	Sokna-Ørgenvika	Ringeri	05.94	KP	1	270+/-70	AD1520-1570	AD1460-169
Hverven	1		12 Beta	90004	Trekull	43		utgrav	E16	Høn. krysset-Hvervenkaste	Ringeri	10.95	KP	8	1600+/-60		
Hverven	1		11 Beta	90003	Trekull	43		utgrav	E16	Høn. krysset-Hvervenkaste	Ringeri	10.95	KP	7	1550+/-11		
Hverven	1		10 Beta	90002	Trekull	43		utgrav	E16	Høn. krysset-Hvervenkaste	Ringeri	10.95	KP	1B	1700+/-80		
Oppåegård	6		4 Beta	77888	Trekull	149	Øvergård	RV	RV. 7	Sokna-Ørgenvika	Ringeri		KP	2	190+/-80	AD1650-1825,	AD1515-158