

Efterforskning og kortlægning af sandressourcer i Nordsøen for Kystdirektoratet – Lodbjerg A og B

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Bilag

Reservationsområde 1 (supplerende fase IA):

- A1:** Eksisterende data og interesseområder
- A2:** Fase IA boringspositioner og udvalgte fase IB surveyområder

Lodbjerg A kortbilag:

- B1:** Fase IB Sejlinjer
- B2:** Bathymetri baseret på multibeam opmåling
- B3:** Side-scan sonar mosaik
- B4:** Prøvetagningpunkter (Vibrocores og HAPS)
- B5:** Substrattypekort
- B6:** Kortlagt ressourcemægtighed
- B7:** Potentielt Fase IB område

Lodbjerg B kortbilag:

- C1:** Fase IB Sejlinjer
- C2:** Bathymetri baseret på multibeam opmåling
- C3:** Side-scan sonar mosaik
- C4:** Prøvetagningpunkter (Vibrocores og HAPS)
- C5:** Substrattypekort
- C6:** Kortlagt ressourcemægtighed

Boringer:

- D1:** Boringspositionsliste
- D2:** Boringsbeskrivelser med udvalgte analyseresultater
- D3:** Fotos af boringer
- D4:** Boringer: Kornstørrelse-, vandindhold-, og glødetabsanalyser (oversigt)
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HAPS prøvetagninger (WSP survey, kortfattet oversigt):

- E1:** HAPS positioner og feltbeskrivelser
- E2:** HAPS analyseresultater

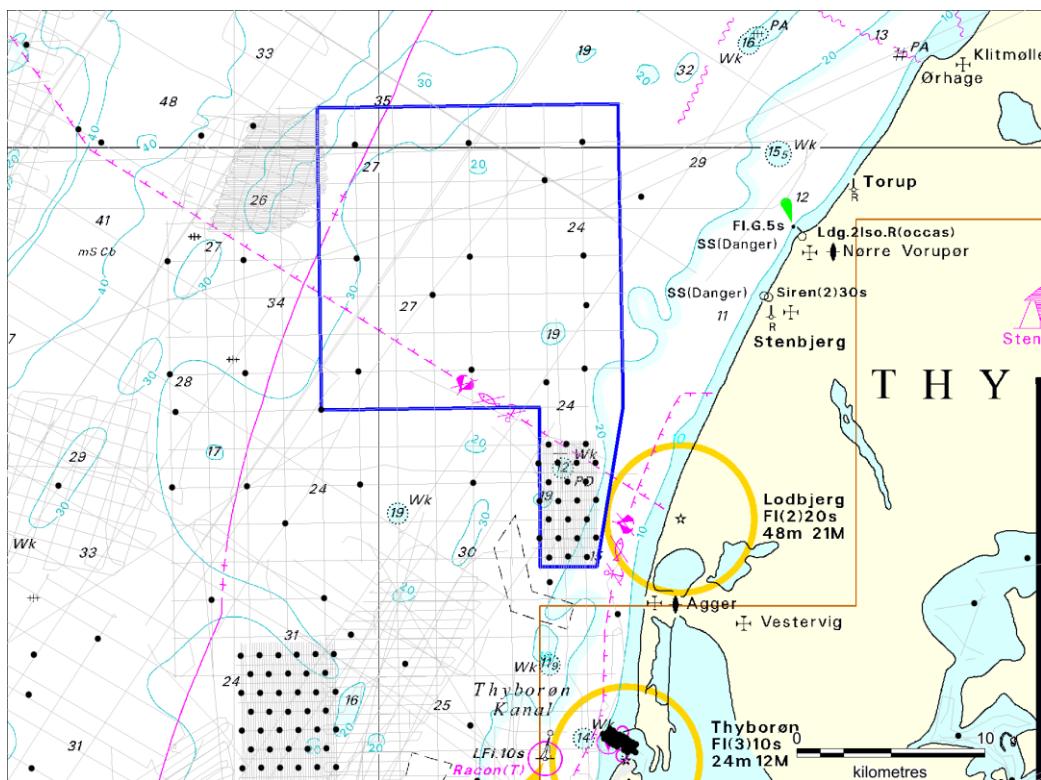
ROV verifikations-video (WSP survey, kortfattet oversigt):

- F1:** Positionsliste og substrattypebeskrivelse

1. Introduktion

For at sikre forsyningssikkerheden af sand til kystfodringen har Kystdirektoratet (KDI) flere bygherretilladelser og reservationsområder til råstofindvinding af sand på havet. I reservationsområde 1 nord for Thyborøn ønsker KDI at lokalisere ny bygherreområder til sandindvinding for kystbeskyttelse af Agger Tange nord for Thyborøn (Figur 1). WSP/GEUS udfører for KDI rådgivning og bistand vedrørende indhentning af fremtidige råstofindvindingstilladelser i forbindelse med KDI's fællesaftaler.

GEO udførte for KDI i 2010 storskala fase IA undersøgelser og udpegning af potentielle ressourceforekomster, der bl.a. førte til etablering af reservationsområde I (GEO, 2011a). GEUS har for KDI i 2020 udført screening af eksisterende data og udpegning af efterforskningsområder i Reservationsområde 1 (GEUS Rapport 2020/10), i hvilke der skal foretages supplerende fase IA undersøgelser i form af borer og efterfølgende, i udvalgte delområder, fase IB detailundersøgelser. Nærværende rapport omhandler rapportering af supplerende fase IA borer samt fase IB geofysisk detailkortlægning, prøvetagning, og kortlægning af sandressourcer i to udvalgte delområder i reservationsområde 1. GEUS har stået for den geofysiske kortlægning og borer, mens WSP har udført HAPS prøvetagninger og ROV verifikationsdyk.



Figur 1. Reservationsområde 1 beliggende ud for Thy i Nordvestjylland.

2. Formål

GEUS udfører i Reservationsområde 1 supplerende fase IA undersøgelser i form af borer i baggrund af eksisterende seismiske data og borer udført af GEO i 2010 (GEO, 2011a). Formålet er at identificere og beskrive potentielle sandressourceområder, der skal detailundersøges i efterfølgende fase IB.

Undersøgelsene følger Miljøstyrelsens anvisninger for fase IB kortlægning jf. Råstoflovens bekendtgørelse nr. 1680 af 17/12/2018.

Fase IB (detailkortlægning) er en detaljeret kortlægning af ressourceområdet eller -områderne med henblik på den endelige afgrænsning samt beskrivelse og vurdering af ressourcen i det eller de områder, der bliver omfattet af en ansøgning om indvinding. Fase IB omfatter jf. Råstoflovens bekendtgørelse detailkortlægning af et eller flere af de under IA identificerede ressourceområder med henblik på at kunne afgrænse ressourceområdet og beskrive og vurdere selve råstofforekomstens udstrækning, mængde, kvalitet og sammensætning i det ansøgte område.

Der udføres seismiske undersøgelser med metoder, der kan honorere kravene til udarbejdelse af de korttyper, der er anført i nedenstående afsnit. Der skal udover det seismiske udstyr også sejles med følgende undersøgelsesudstyr:

- Side scan sonar med en range på maksimalt 100 m og transducerens højde over havbunden max 0,05 til 0,1 x range, samt optagelse i både høj- og lavfrekvensområde. Der sejles med en maksimal linjetæthed på 80 m for vanddybder mindre en 10 m, og en maksimal linjetæthed på 100 m for vanddybder større end 10 m.
- Magnetometer

Detailkortlægning kan desuden omfatte:

- Sedimentprøver på op til 50 liter
- Prøveboringer.

Der skal udarbejdes beskrivelse af råstofressourcens geologiske opbygning bilagt:

- Kort over råstofressourcens udbredelse.
- Kort over råstofressourcens volumen.
- Kort over områdets bathymetri (se Fase IIA).

- d) Kort over overfladesedimentets sammensætning (se Fase IIA).
 - i) Med arealmæssig angivelse af de identificerede substrattyper, jf. nedenfor.
 - ii) Med angivelse af eventuelle overjordstykkelser.
 - iii) Med angivelse af, om overfladen formodes påvirket af menneskelig aktivitet, samt billed-dokumentation over den påvirkede overflade.
 - iv) Med angivelse af naturlig omlejring af sedimentet.
- e) Analyseresultater af sedimentprøver.

Alle resultater, positioner, sejillinjer, kort og tolknninger af indsamlede data afleveres til Miljøstyrelsen i form af råstof rapport med MapInfo GIS lag.

3. Krav til sandkvalitet og mængder

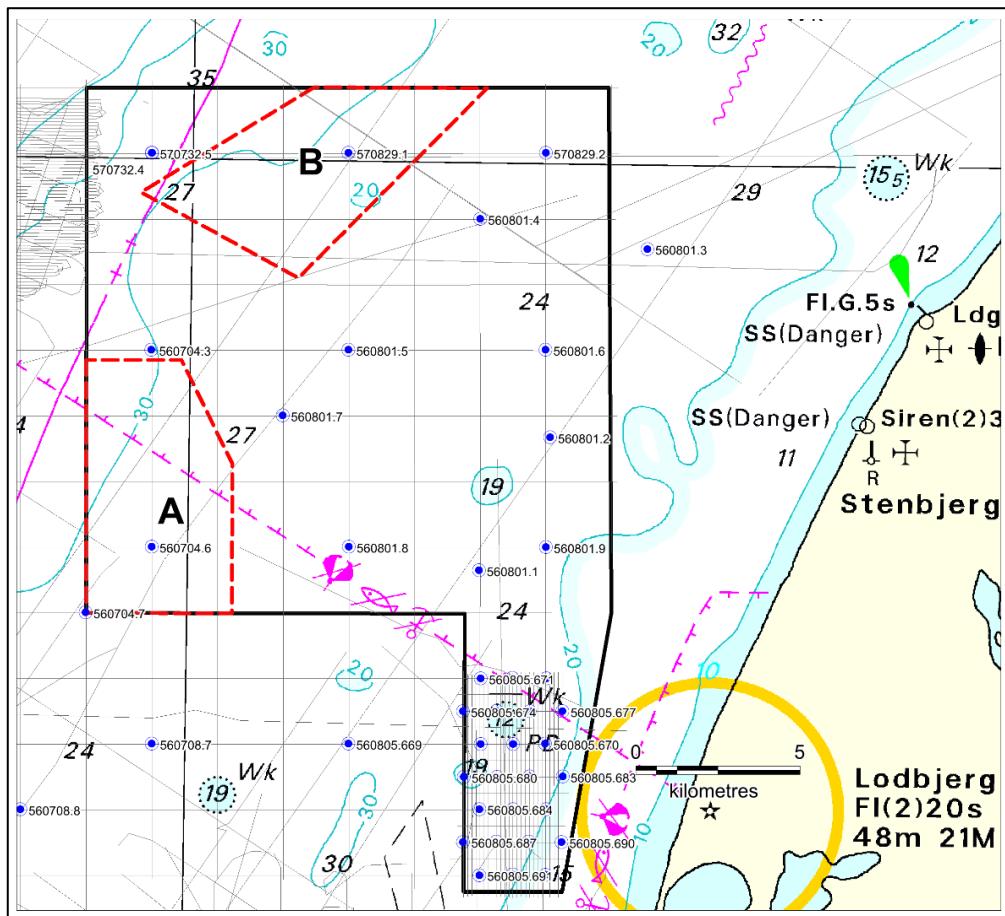
Kystdirektoratet har oplyst følgende krav til sandkvalitet, dybder og størrelse for et potentielt indvindingsområde i Reservationsområde 1:

- Kornstørrelsесmiddelværdi D50 skal være i intervallet 0,3 – 0,6 mm, og kornstørrelsесfordelingen skal være tilnærmelsesvis normalfordelt omkring det ønskede D50 interval. Indhold af fint materiale (<0,125mm) skal være <10 %, men der skal også være områder <1,5 %.
- Dybden tættest mod kystlinjen, hvortil KDI vil acceptere indvinding er omkring den inderste 20 m dybdekurve (DVR90).
- Ønskede minimum indvindingsarealer er ca. 1x2 km.

Kystdirektoratets behov for fodring ved Agger Tange og Harboøre Tange er oplyst til at være 1 mio m³ årligt. Dvs. at for en 10-årige periode, skal der indhentes indvindingstilladelse på ca. 10 mio m³. I de eksisterende bygherreområder 562-PA og 562-AE ud for Thyborøn findes restressourcer, der kan bidrage til den samlede ressourcemængde til kystfodring i området.

4. Tidlige undersøgelser

De eksisterende shallow-seismiske linjer og borer i området findes på GEUS' marine råstofdatabase Marta (<https://data.geus.dk/geusmap/?mapname=marta>), og er angivet i Figur 2. GEO's fase IA kortlægning i 2010 blev udført i et 2x2 km gridnet (GEO, 2011a), og undersøgelserne omfatter udoover sparker, pinger og sidescan data også Vibrokerner og HAPS prøvetagning. I et delområde i den sydøstlige del af Reservationsområde 1 nærmest Agger Tange blev der i 2011 udført detaljerede Fase IB undersøgelser (GEO, 2011b) og området er pt. udlagt som bygherreområde for KDI. Indvinding i området har dog vist sig at være problematisk, og KDI ønsker derfor at finde alternative ressourceområder. Ud over ovennævnte undersøgelser, findes der et begrænset antal seismisk linjer udført i 1991 og 1997 af DGU/GEUS. De geofysiske data omfatter water gun, sleeve gun, og side-scan sonar. Undersøgelserne er rapporteret i GEUS Rapport 2000/43 og resultaterne indgår i flere publikationer vedr. seismisk stratigrafi og udviklingen af Jyske Rev og den tilgrænsende del af den jyske vestkyst og den vestlige Limfjord (Leth, 1996).



Figur 2. Lokalisering af sandressource-interesseområderne A og B Reservationsområde 1.

5. Råstofrelaterede geologiske forhold

Reservationsområde 1 er beliggende umiddelbart nord for hovedstilstandslinjen for Weichselisen (sidste istid) og områdets overfladenære geologiske enheder og stratigrafi er umiddelbart sammenlignelige med den geologiske model der er opstillet for Jyske Rev og tilgrænsende kystnære område ved Thyborøn (GEUS Rapport 2010/23.). Tabel 1 giver et overblik over den geologiske udvikling af området siden sidste istid, med angivelse af genetiske enheder og generel lithologisk sammensætning.

Tabel 1. Oversigt over geologiske perioder, genetiske enheder og lithologi i området.

Periode	Genetiske enheder	Lithologi
Øvre Holocæn	Marint mobilt sand, store sandbølger aflejret efter etablering af Jyllandsstrømmen	Fin-grovkornet sand
Nedre Holocæn	Marin transgression, kystdannelser med varierende energiniveau	Sand, grus og småsten (kystdannelser). Finkornet sand-silt i beskyttet bugt/fjord dannelser
Fastlandstid	Tørlægning/markant erosiv grænse	Nondeposition, stedvis sødannelser/fluviatile dannelser
Senglacial	Yoldiahav aflejringer (dybere vand) efterfulgt af faldende havniveau	Lagdelt ler/silt/sand (stedvist stenførende) – kun stedvist bevaret
Sen Weichsel	Smeltevandsaflejringer	Smeltevandssand, -silt, og -ler
Weichsel Glacial	Moræne-/smeltevandsaflejringer glacialtektonisk deformeret	Moræneler/smeltevandssand og -ler

Weichsel istidens aflejringer består af moræneaflejringer med indlejrede sekvenser af smeltevandsaflejringer og stedvise højtliggende kridtaflejringer, der er blevet påvirket af kombineret glacial- og salttektonik i området. Da Weichsel-isen trak sig tilbage fra området for ca. 18.000 år siden, blev området oversvømmet af Yoldia Ishavet og fint lagdelte finkornede aflejringer med spredte dropsten findes bevaret i udfyldte depressioner (senglacialt Yoldia Ler). Området hævedes langsomt og for ca. 10.000-11.000 år siden blev det tørlagt. I tidlig Holocæn forårsagede stigningen i det globale havniveau at området igen blev oversvømmet. Området omkring Jyske Rev dannede en øgruppe, der blev eroderet og nedbrudt af havet, mens den sydøstlige del i retning mod Agger Tange og den nuværende vestlige Limfjord bestod af et mere beskyttet fjordområde, hvor der blev aflejret relativt finkornede organisk-rige sedimentter (Agger Ler). Ved yderligere stigning af havniveauet blev

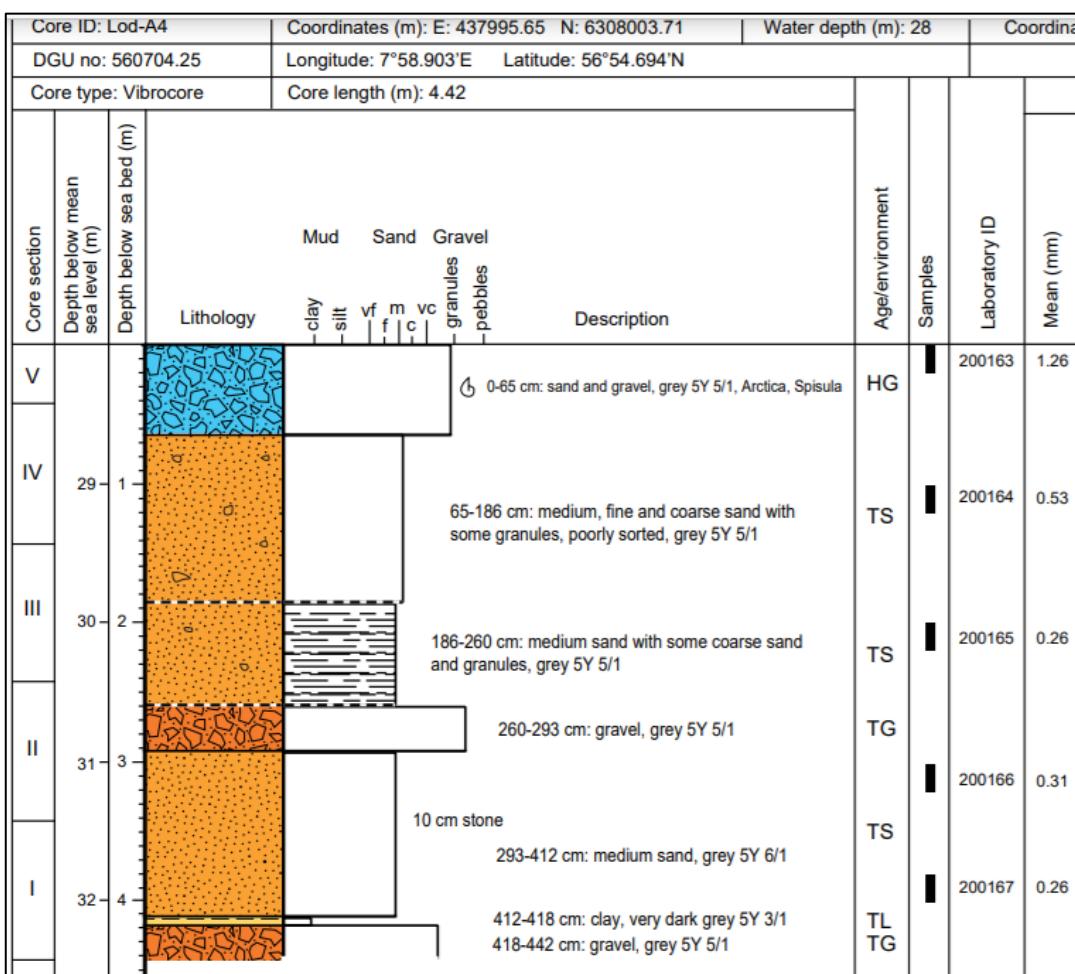
Jyllandsstrømmen etableret for ca. 6.000 år siden, og det kraftigere energiniveau forårsagede erosion og resedimentation af såkaldt mobilt sand i større og mindre barreformer, med en nettotransportretning mod nord. På baggrund af den ovenfor skitserede geologiske model må det forventes, at de overfladenære råstoffer i reservationsområde 1 er domineret af holocænt marint sand, grus og ral med stedvise forekomster af højtliggende smeltevandsaflejringer aflejret i forbindelse med Weichsel-isens endelige tilbagesmelting.

6. Fase IA supplerende boringer

På baggrund af screeningsrapport (GEUS Rapport 2020/10) er der blevet udført i alt 14 supplerende fase IA vibrationsboringer fordelt med 7 borer i hvert af to interesseområder. Interesseområderne er beliggende i henholdsvis den sydvestlige og den centrale nordlige del af Reservationsområde 1 (Figur 2). Boringsbeskrivelser, fotos, og analyseresultater er vist i Bilag D1-D5. Herunder beskrives boringsresultater kort for hvert af de to områder:

Reservationsområde 1 sydvest (Lodbjerg A)

Boringerne Lodbjerg_A_1 til Lodbjerg_A_7 samt to GEO 2010 arkivboringer 560704.6 og 560704.7 påviser smeltevandsflejringer af op til 5-6 m tykkelse, overlejret af et relativt tyndt dække af marine aflejringer. Smeltevandsflejringer består af mellemlejrede meter-tynke enheder af mellem-grovkornet sand vekslende med enheder af gruset sand med småsten op til få cm i diameter (Figur 3).



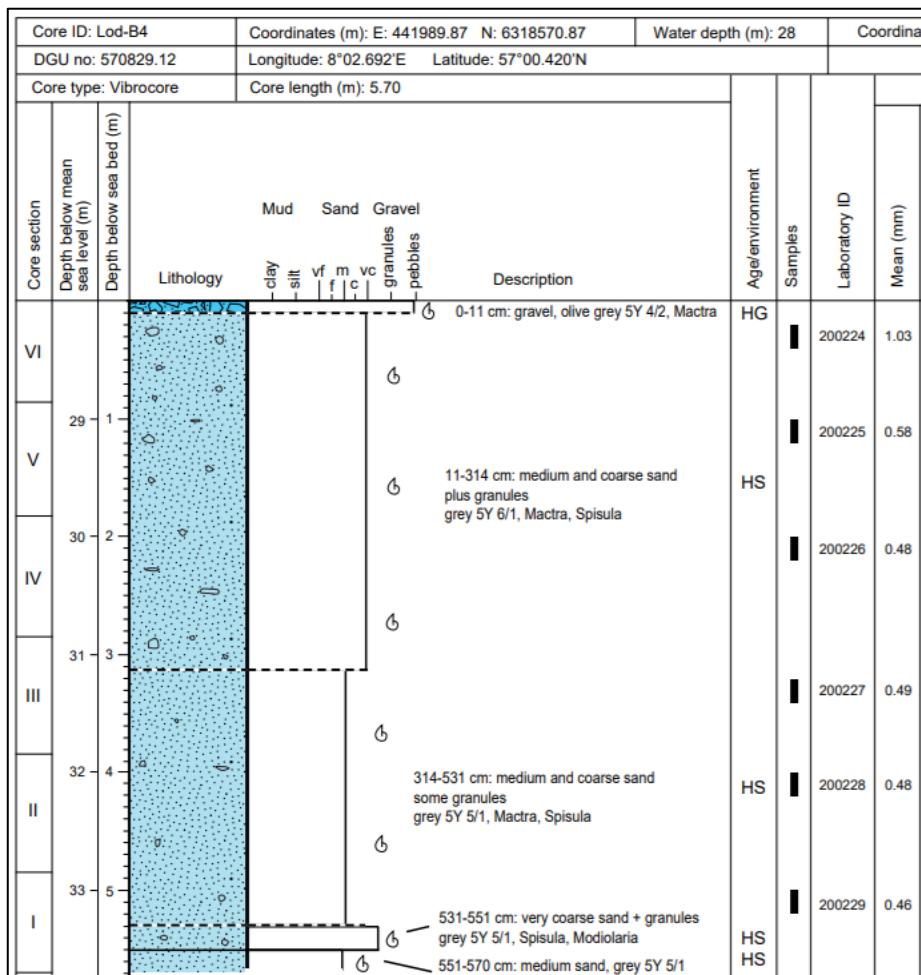
Figur 3. Sedimentologisk log af vibrationskerne Lod-A4. Smeltevandssedimenter (TS/TG) er markeret med orange og overleirende marint sand og grus (HG) er markeret med blåt.

Middelkornstørrelsen varierer mellem 0,3 og 0,6 mm of finstofindholdet er generelt 1-10%. Enkelte af smeltevandssandenhederne i Lodbjerg A-6 og A-7 i den nordlige del af interesseområdet er dog meget finkornede og udviser en finstofsandel på helt op til 74%.

De overlejrende marine aflejringer er domineret af gruset sand med småsten og det vurdes at smeltevandssandet vil være den primære potentielle sandressource i området. På basis af kernelogs, sammenholdt med sigteanalyser for hver m og eksisterende tolkning af potentielle ressourcemægtigheder (GEUS Rapport 2020/10), er der i samråd med KDI blevet udpeget et delområde til videre fase IB detailundersøgelser. Området betegnes som Lodbjerg A og er vist i Figur 5.

Reservationsområde 1, nord (Lodbjerg B)

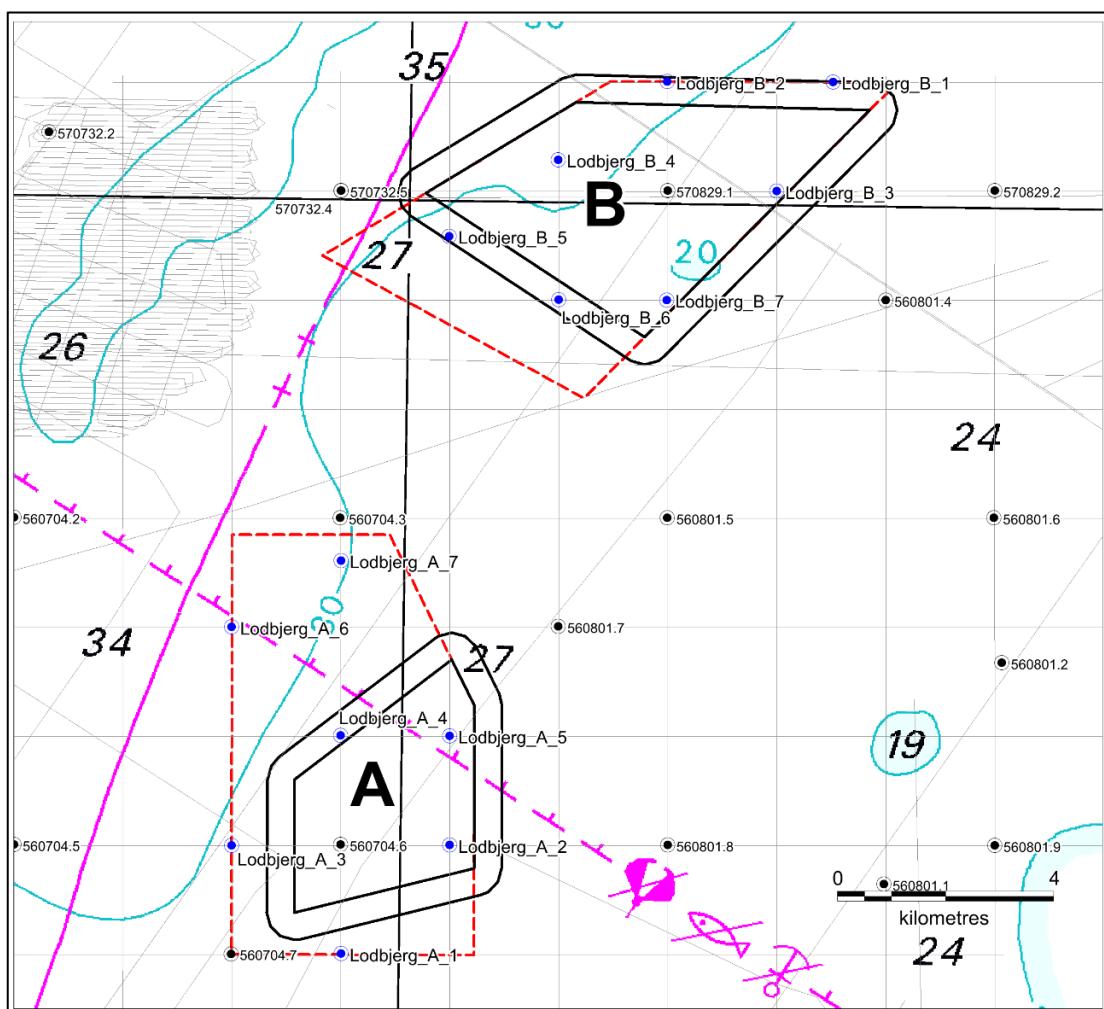
Boringerne Lodbjerg_B_1 til Lodbjerg_B_7 samt en GEO 2010 arkivboring 570829.17 påviser mellemkornet marint sand af >4 m tykkelse med lavt finstofindhold (ca. 1-2%) over store dele af interesseområdet (Figur 4).



Figur 4. Sedimentologisk log af vibrationskerne Lod-B4, der udelukkende består af marint sand.

Boring B-5 og B-6 har et toplag på 0.6-0.7 m bestående af meget gruset, groft sand med D50 middelkornstørrelse på 0.7-0.9 mm, og den sydligste del af området skønnes derfor at have et ringere ressourcempotentiale. Boring B-1 og B-2 i den nordligste del af området er derimod relativt finkornede med D50 middelkornstørrelser på 0.24-0.30 mm, og den nordligste del af området skønnes derfor heller ikke at have ressourcempotentiale.

På basis af kernelogs, sammenholdt med sigteanalyser for hver m og eksisterende tolkning af potentielle ressourcemægtigheder (GEUS Rapport 2020-10), er der i samråd med KDI blevet udpeget et delområde til videre fase IB detailundersøgelser. Området betegnes som Lodbjerg B og er vist i Figur 5.



Figur 5. Udpegede fase Ib detailundersøgelsesområder Lodbjerg A og Lodbjerg B inkl. 500 m zone er vist med sort polygon. Interesseområder baseret på fase IA undersøgelser er vist med stiplet rød linje.

7. Fase IB efterforskningsområder

Nærmeste punkt af efterforskningsområde Lodbjerg A er beliggende ca. 18 km NV for nordligste del af Agger Tange og består af et potentielt indvindingsområde og en omkringliggende påvirkningszone på 500 m, i alt 18,0 km². Hjørnekoordinater for det potentielle indvindingsområde er angivet i Tabel 2.

Tabel 2. Hjørnekoordinater for Lodbjerg A Fase IB surveyområde ekskl. omgivende 500 m zone.

X (UTM32N)	Y (UTM32N)	Lat	Long
440033	6309407	56° 55.466'	008° 00.890'
440454	6308561	56° 55.014'	008° 01.317'
440446	6305579	56° 53.407'	008° 01.351'
437140	6304770	56° 52.944'	007° 58.108'
437155	6307214	56° 54.262'	007° 58.086'

Nærmeste punkt af efterforskningsområde Lodbjerg B er beliggende ca. 24 km NNV for nordligste del af Agger Tange og består af et potentielt indvindingsområde og en omkringliggende påvirkningszone på 500 m, i alt 28,8 km². Hjørnekoordinater for det potentielle indvindingsområde er angivet i Tabel 3.

Tabel 3. Hjørnekoordinater for Lodbjerg B Fase IB surveyområde ekskl. omgivende 500 m zone.

X (UTM 32N)	Y (UTM 32N)	Lat (N)	Long (E)
442313	6319639	57° 00.998'	008° 02.997'
447706	6319496	57° 00.960'	008° 08.327'
443575	6315327	56° 58.684'	008° 04.301'
439555	6317971	57° 00.078'	008° 00.296'

8. Survey udførelse

Supplerende fase IA boreriger blev udført d. 10 juli 2020 fra Skibet M/S Karoline chartret gennem FOGA Aps.

Mobilisering af surveyskibet M/S Skoven blev udført d. 19-20 oktober 2020 i Hvide Sande havn (Tabel 4). I den forbindelse blev der fastgjort stævnrør til montering af kombineret side scan sonar/multibeam (Edgetech 6205) og Innomar transducer (pinger) blev monteret på bagbords side i påsvejset beslag. GEUS' surveycontainer med optageudstyr og overvågningsmonitors blev monteret på fordækket. Sparker udstyr blev rigget til på eksisterende bom på bagbord side og magnetometer blev klargjort til udsætning fra rulle på agterstævnen.

Seismisk survey af Lodbjerg A og B blev udført i perioden 21-24 oktober 2020. Surveyforholdene var generelt gode med jævn-frisk vind fra syd og vestlig retning med bølgehøjder på 0,5-1,0 m. I begge områder blev der sejlet linjer med 100 m afstand i SV-NØ retning. Der blev sejlet med en hastighed på 4,5-4,7 knob og med side scan sonar range indstillet til 100 m på hver side af skibet. Datadækning og kvalitet af side scan sonar, multibeam, Innomar pinger og sparker data blev checket dagligt og efter fuldførelse af hvert område.

Efter preliminær tolkning af seismikdata blev der d. 13-14 november 2020 udført 15 boreriger i Lodbjerg A og 8 boreriger i Lodbjerg B fra MS Skoven med GEUS's 6 m vibrocorer. Vejret var begge dage præget af jævn-frisk vind fra sydlig retning. Bølgehøjden var generelt omkring 1 m.

Tabel 4. Oversigt over survey forløb.

Dato	Arbejdsområde	Kommentar
10/7/2020	Reservation-sområde 1	Boring af 14 vibrationskerner med M/S Karoline
19-20/10/2020	Hvide Sande	Mobilisering af MS Skoven. Montering af Sonar, Innomar sedimentekkolod, sparkerudstyr og survey container
21-24/10/2020	Lodbjerg A og B	Survey af Lodbjerg A og B område
25/10/2020	Hvide Sande	Demobilisering af seismikudstyr
12/11/2020	Hvide Sande	Mobilisering af MS Skoven for vibrationsboring
13-14/11/2020	Lodbjerg A og B	Vibrationsboring
15/11/2020	Hvide Sande	Demobilisering af boreudstyr

Følgende personer deltog i fase IA boringstogt med M/S Karoline:

- Steen Lomholt, GEUS (Geolog, Seniorkonsulent)
- Johnny Bjerregaard Jørgensen (Bjerregaard Montage Aps.) med tre medhjælpere

Følgende personer deltog i det akustiske survey:

- Niels Nørgaard-Pedersen, GEUS (Geolog, seniorforsker og projektleder)
- Lars Georg Rödel, GEUS (Senior Marintekniker)
- Sigurd B. Andersen, GEUS (Marintekniker)

Følgende personer deltog i fase IB boringstogtet:

- Henrik Granat, GEUS (Geolog)
- Sigurd B. Andersen, GEUS (Marintekniker)
- Johnny Bjerregaard Jørgensen (Bjerregaard Montage Aps.) med to medhjælpere

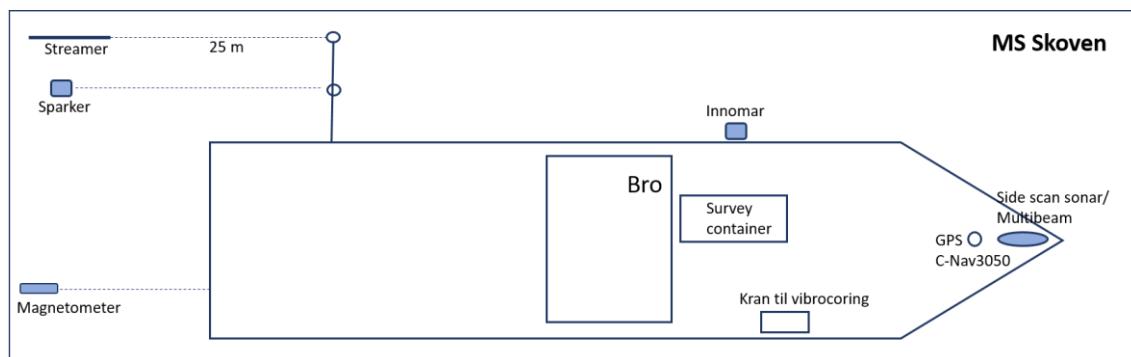
9. Anvendt udstyr

9.1 Opmålingsskib

Surveyskibet *MS Skoven* chartret gennem FOGA Aps. blev benyttet til geofysisk opmåling (Figur 6). I Figur 7 ses skitse af udstyrsopsætning.



Figur 6. Surveyskibet *MS Skoven*.



Figur 7. Surveyudstyr opsætning på *MS Skoven*.

9.2 Udstyr og software

Den geofysiske opmåling inkluderede side-scan sonar, multibeam, sedimentekkolod, sparker seismik, og magnetometer. I Tabel 5 ses oversigt over udstyrsspecifikationer.

Tabel 5. Oversigt over anvendt surveyudstyr.

Udstyr	Model	Specifikationer
GPS positionering	Applanix PosMv 5	
Integreret side scan sonar/ multibeam	Edgetech 6205	230/550/1600kHz
Sedimentekkolod (pinger)	Innomar Medium	Primær frekvens 8 kHz
Sparker	Geo-Resources Geo-Spark 200	
Streamer	Geo-Sense 8-element	Enkelt kanal
Magnetometer	Geometrics G-882	20.000- 100.000 nT
Vibrocorer	GKG 6 m	11 cm diameter core liner

Positionering

Til positionering blev der benyttet en Applanix PosMv 5 modtager. GPS/GNSS/L modtageren benytter NTRIP korrektioner, hvor med der opnås en horisontal nøjagtighed på 0.1m og en vertikal nøjagtighed bedre end 0.3m. Dybdemåling relativt til referencepunkt (DVR90) bliver dermed automatisk tidevandskorrigert. I forbindelse med mobilisering bliver offset fra GPS-antennen til sonar-transduceren opmålt. Under survey bliver antennepositioner og korrigerede navigationsdata fordelt på datastrengen til softwaren for de individuelle optageinstrumenter. GPS højden beregnes på basis af geoid adskillelse (DKGE-OID02).

Bathymetri

Vanddybder blev opmålt i forhold til DVR90 med Edgetech 6205 Multi phase Echosounder'en der var monteret under stævnen i en dybde af 3 meter under vandlinjen. Instrumentets 230 kHz frekvens benyttes til bathymetriopmålingen og position, højde, role/pitch/heave kompenseres af en motion sensor forbundet til Applanix PosMv 5 modtageren. Kombinationen af de to instrumenter giver en absolut nøjagtighed på 0.3 m. RTK-værdier nedtages kontinuerligt under survey. Kortvarige perioder hvor internetforbindelse mistes fører dog til manglende RTK-værdier. Dataopsamling foregår i Edgetech software'n Discovery, og data-filer

registreres i Edgetech JSF format. I forbindelse med opmålingen blev der foretaget patchtest af sonar'en på en markant bundform. Patchtest data blev senere benyttet til kalibrering af sonar og endelig processering af dybdedata. JSF filerne blev processeret dagligt for at checke datakvalitet. Heave og SVP (lydhastighedsprofiler) blev importeret til SonarWiz projekt for at korrigere rådata. Datasættet blev renset for 'outliers' og data blev begrænset til 140 grader interval for at ekskludere større unøjagtighed på ydre strålevifte. Det renseade datasæt blev eksporteret som Geotiff fil for at skabe et overbliksbillede og ligeledes som et ESRI grid, der kan viderebehandles med GIS software.

Side scan sonar havbundsoverflade kortlægning

EdgeTech 6205 side-scan sonar'en opererer med frekvenserne 230 og 550 kHz. Den optimale oplosning i sejlretningen er på ca. 4.5 cm. Data blev optaget i Edgetech JSF format med Sonarwiz 7 software.

Innomar højopløseligt sedimentekkolod

Der blev benyttet et Innomar SES-2000 Medium parametrisk sedimentekkolod til kortlægning af de øvre 5-10 m af havbunden. Penetrationsdybden i finkornede bløde sedimenter kan være bedre end 50 m, men tilstedevarelse af hårde, stenede eller sandede lag vil typisk reducere penetrationen meget. Erfaringsmæssigt kan sandede lag med en tykkelse på op til 5-10 m registreres. Den vertikale oplosning er op til ca. 5 cm afhængigt af den benyttede puls. Alle data bliver korrigert for roll og heave med en motionsensor (SMC), som er placeret på skibet direkte over transduceren.

Sparkerudstyr

Der blev anvendt et Geo-Spark 200 sparkersystem fra Geo-Resources samt en enkeltkanal GeoSense streamer til at detektere dybere i havbunden i mere hårde lag. Der kan typisk opnås en dybdepenetrering på 25-150 m med sparkersystemet. Et Mini-Trace 2 optagesystem fra Geo-Resources blev benyttet.

Magnetometer

Der blev anvendt et Geometrics G-882 magnetometer som blev slæbt ca. 20 m efter skibet med fastgøringspunkt på styrbords side 3 m fra centerlinjen. Magnetometeret var fastgjort til opdriftsbøje med 10 m line, for at forhindre magnetometeret i at tage bunden under langsom manøvrering. Rådata blev optaget med Hypack software.

Vibrocoring

GEUS' 6 m VKG Vibrocoker og MS Skoven's kran blev benyttet til kernetagning. Vibrocoren kan tage havbundskerner af sand, mudder, ler, moræne og løst cementerede sedimenter. Der benyttes et 6 m rør af rustfrit stål, hvori der indføres en 6 m PVC coreliner med en

diameter på 106 mm. Før kernetagning bliver skibet ankret op med hæk og stævnanker og placeret over den ønskede kernetagningsposition. Under kernetagning, hvor kernerøret vibreres ned i havbunden, kan penetrationsdybde og modstand registreres og vises på en kontrolmonitor på dækket. Ved fyldt kernrør eller maksimal modstand uden videre penetration løftes kernetageren langsomt op fra havbunden. Når det fyldte kernerør er sænket ned til vandret på dækket, udtages og afsaves kernesektioner af 1 m længde. Kernesektionernes endestykker påsættes låg og der noteres kernenummer, sektionsnummer og top/bund af hvert kernestykke før det nedpakkes til hjemtransport.

10. Dataprocessering og tolkning

De seismiske data er blevet processeret, tolket og bearbejdet til kort, og resultaterne er præsenteret i GIS-programmet MapInfo. Nedenstående Tabel 6 giver en oversigt over databasearbejdning og tolknings dataformater, software og slutprodukter.

Tabel 6. Oversigt over datatyper og -formater.

Datatype	Dataformat	Data og tolkeprogram	Slutprodukt
Positionering	ASCII tekst	NaviPac, Hypack, MapInfo	Sejillinjekort
Bathymetri	ASCII tekst	Edgetech Discovery, SonarWiz 7 MapInfo Vertical Mapper	Dybdekort
Side scan	Jsf konverteret til geotiff	SonarWiz 7, Mapinfo	Havbundssedimentkort, menneskelig aktivitet
Innomar	Optaget i Raw format. Konverteret til SEGY	SesConvert64, Kingdom, Mapinfo	Havbundssedimentkort og ressourcekort
Sparker	SEGY	Geosuite AllWorks, Kingdom, Mapinfo	Ressourcekort

11. Fase IB survey resultater – Lodbjerg A og B

På baggrund af supplerende fase IA boringsdata data og seismiske data fra GEO's fase IA undersøgelser i 2010 blev der udvalgt to delområder til supplerende fase IB geofysiske detailundersøgelser: Lodbjerg A og Lodbjerg B. Fase IB survey data er blevet processeret, tolket og bearbejdet til førstegenerationskort. Herefter blev der udvalgt fase IB boringspositioner, HAPS positioner, og ROV video-dyk positioner. Efter gennemførelse af prøvetagning og videodyk er analyseresultater inddraget i endelig udfærdigelse af tolkede kort, MapInfo datafiler, og databilag. Der er udarbejdet kort for sejllinjer, dybdeforhold, side scan sonar mosaik, prøvetagningspositioner, substrat typer, og ressourcemægtighed.

I det følgende beskrives analyser og tolkning af data. Analyseresultater og kortpræsentationer kan findes i bilagene til denne rapport.

11.1 Sejllinjer

I Lodbjerg A blev der sejlet i alt 180 km sejllinjer med 100 m afstand. Linjerne er nummereret som Lod_A_IB_xx (xx = linje nr.). Sejllinjer er vist i kortbilag B1.

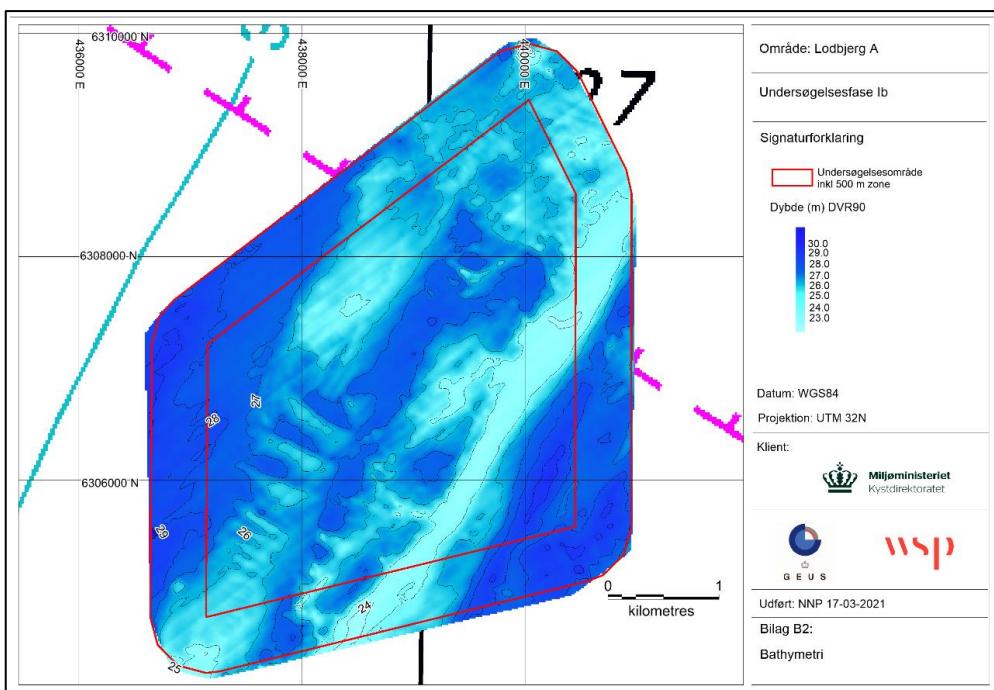
I Lodbjerg B blev der sejlet i alt 288 km sejllinjer med 100 m afstand. Linjerne er nummereret som Lod_B_IB_xx (xx = linje nr.) Sejllinjer er vist i kortbilag C1.

11.2 Bathymetri

De processerede data fra multibeamopmålingen er eksporteret som højopløselig xyz gridfil og data er regridded i Vertical Mapper og plottet med dybdefarvekode og 1 m konturlinjer i forhold til DVR90. Data er plottet som bånd med en bredde på ca. 100 m langs sejllinjer.

Lodbjerg A

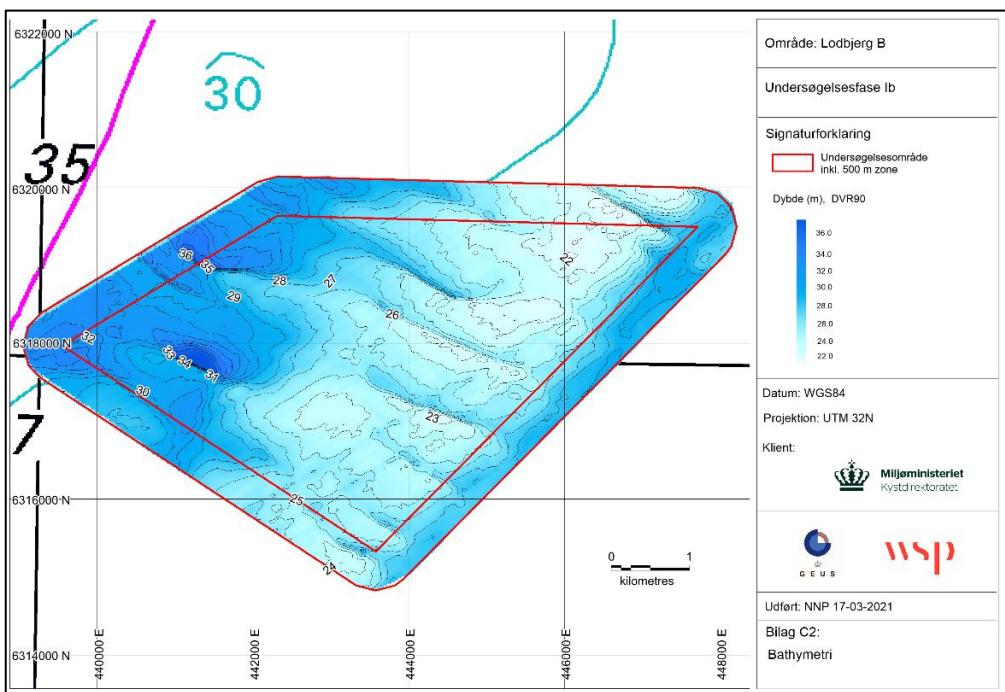
Dybden i Lodbjerg A varierer fra ca. 24 m til ca. 29 m (Figur 8, Kortbilag B2). De største dybder på op til 29 m ses i 500 m zonen i det vestlige hjørne af området. Dybder på op til ca. 28 m ses ligeledes i det sydøstlige hjørne af området. Store del af det centrale område er præget af dybder på 24-27 m, der veksler i brede dybdevariationsbånd orienteret SV-NØ. I det sydlige centrale område ses ligeledes mindre skala tværgående dybdevariationsbånd med en afstand på 100-400 m, repræsenterende store vandrende bundformer.



Figur 8. Opmålt dybdeforhold i Lodbjerg A.

Lodbjerg B

Dybden i Lodbjerg B varierer mellem ca. 22 m og 37 m (Figur 9, Kortbilag C2). I den centrale til østlige del af området veksler dybden mellem ca. 22 og 27 m i form af store NV-SØ orienterede rygge, repræsenterede store vandrende sandbundformer.



Figur 9. Opmålt dybdeforhold i Lodbjerg B.

I den østlige 500 m zone er dybden lidt større (ca. 25-30 m), da bundformernes rygge terminerer her. De største dybder på op til 37 m findes i udprægede trug mellem bundformernes rygge i den vestligste del.

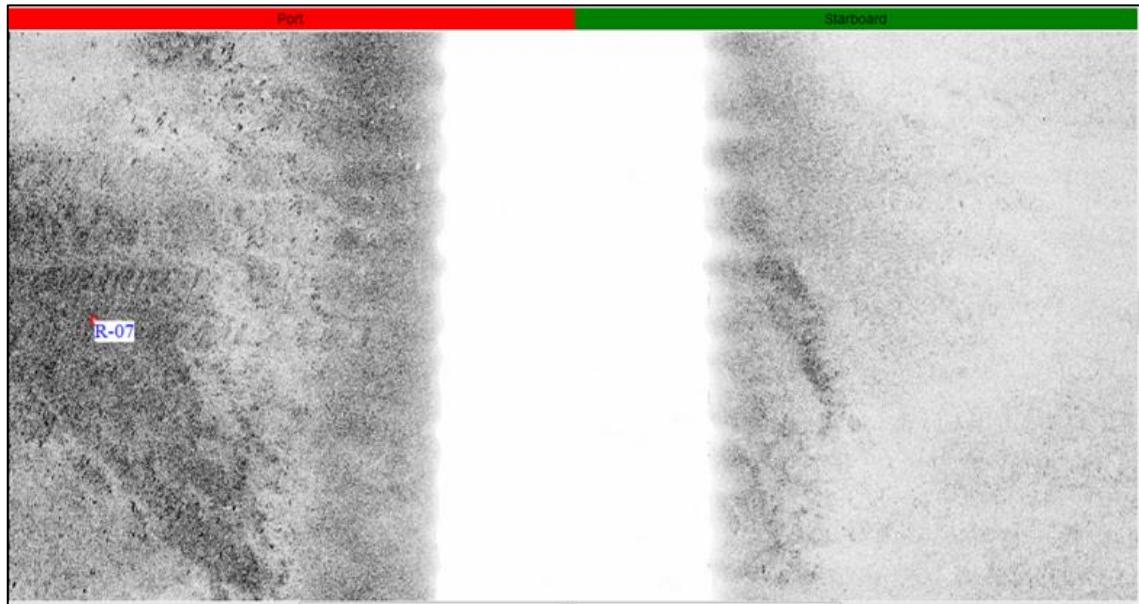
11.3 Side scan mosaik

Der er genereret højopløselige geotiff filer (tiles) af de processerede side scan sonar data og tiles er importeret og plottet i Mapinfo.

Lodbjerg A

Side scan mosaikken viser generelt en vekslen mellem lysere områder og mørkere områder orienteret i SV-NØ gående bånd med få hundrede m til ca. 1 km afstand (Bilag B3). De lyse områder repræsenterer lavere reflektiv sandbund og de mørkere områder repræsenterer en mere gruset og stedvist stenbestrøet havbund (Figur 10). I det sydvestlige område ses tværgående NV-SØ orienterede lysere partier adskilt af smalle mørkere partier. Sammenligning med dybdedata understøtter, at der er tale om vandrende sandbundformer

Der er ikke observeret trawlspor, vrag eller andre spor af menneskelig aktivitet i undersøgesesområdet.

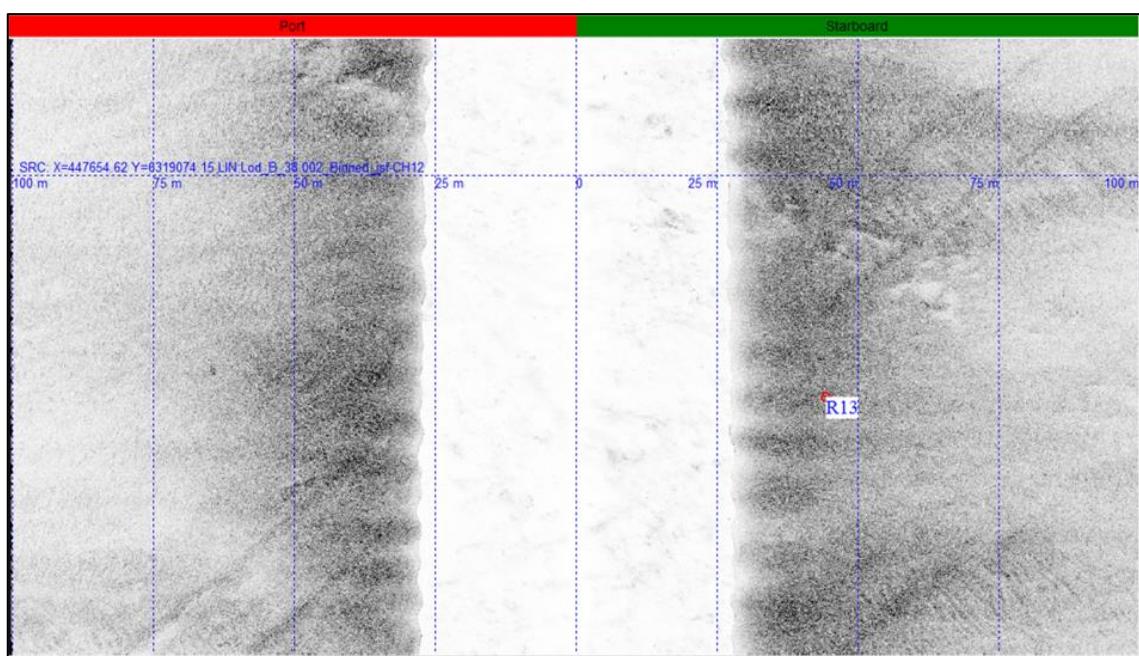


Figur 10. Side scan sonar billede af havbundssektor præget af grus og stenbestrøning. ROV verifikationspunkt R-07 er markeret. Styrbord og bagbordssektor dækker hver 100 m på tværs af billedet.

Lodbjerg B

Side scan mosaikken viser klar dominans af lavere reflektiv sandbund i området (Bilag C5). Kun i en smal sektor i den vestlige del af området, samt i dele af den østlige og den vestlige 500 m zone, ses højere reflektive partier, der formodes at repræsentere en mere gruset havbund. Der kan derudover observeres en vekslen mellem lidt lysere og lidt mørkere partier orienteret i NV-SØ retning. Denne vekslen er også afspejlet i dybdeforholdene, og repræsenterer rygge og trug af meget store vandrende sandbundformer. Kun i et område i 500 m zonen er der observeret synlige spredte større sten, bekræftet med ROV dyk LOD_B_R18.

Der er observeret få trawlspor som visuelt fremhæves i det lettere grusede tværgående bånd i områdets vestlige del (Figur 11). Det må antages, at sandtransport i høj grad har udvisket mulige ældre trawlspor i den resterende del af området. Der er ikke observeret vrag eller andre spor af menneskelig aktivitet i undersøgelsesområdet.



Figur 11. Side scan sonar billede fra Lodbjerg B visende sandbund (lysere partier) vekslende med lettere gruset bundtype (mørkere partier). Trawlspor krydser billedet. Styrbord og bagbordssektor dækker hver 100 m på tværs af billedet.

11.4 HAPS prøvetagninger

Der er foretaget 40 HAPS prøvetagninger i Lodbjerg A og 60 HAPS prøvetagninger i Lodbjerg B. Positionerne er vist på kortbilag B4 og C4 og i Bilag E1 og E2 er der givet en kortfattet

tabellarisk oversigt over feltbeskrivelser og analyseresultater (kornstørrelsesanalyse, tørstofindhold og glødetabsanalyse).

Lodbjerg A

Ud af 40 HAPS prøver er 33 beskrevet som sand varierende mellem fint, mellem og groft og en del med lidt grus, enkelte småsten og skalfragmenter (Bilag E1). Fem prøver beskrives som groft sand og fint grus, og to prøver beskrives som sand overlejrende ler. Middelkornstørrelsen (D50) varierer mellem 0,4-0,7 mm (Bilag E2). Finstofindholdet (<0,125 mm) er typisk <1%, og glødetabet er lavt, typisk <0,3%.

Lodbjerg B

Ud af 60 prøver er 59 prøver beskrevet som sand, mest mellem til groft og en del som svagt grusede og indeholdende skalfragmenter (Bilag E1). En prøve er beskrevet som fint grus (LOD_B_S45). Middelkornstørrelsen (D50) varierer mellem 0,4-0,8 mm (Bilag E2). Finstofindholdet (<0,125 mm) er typisk <0,5%, og glødetabet er lavt, typisk <0,4%.

11.5 ROV verifikationsdyk

På basis af side scan sonar data blev der udpeget 20 ROV positioner i hvert af Lodbjerg områderne til video verifikation af substrattyper og miljøbeskrivelse. Videooptagelser og feltbeskrivelser (Bilag F1) er benyttet til verifikation af substrattypekortlægning beskrevet i efterfølgende afsnit. ROV positioner er anført på substrattypekort (Bilag B5 og C5).

11.6 Substrattypekortlægning

Der er foretaget heldækkende substrattypekortlægning baseret på tolkning af side-scan sonar enkeltspor og mosaik, ROV verifikationsdyk, samt prøvetagningsresultater fra HAPS og Vibrocores.

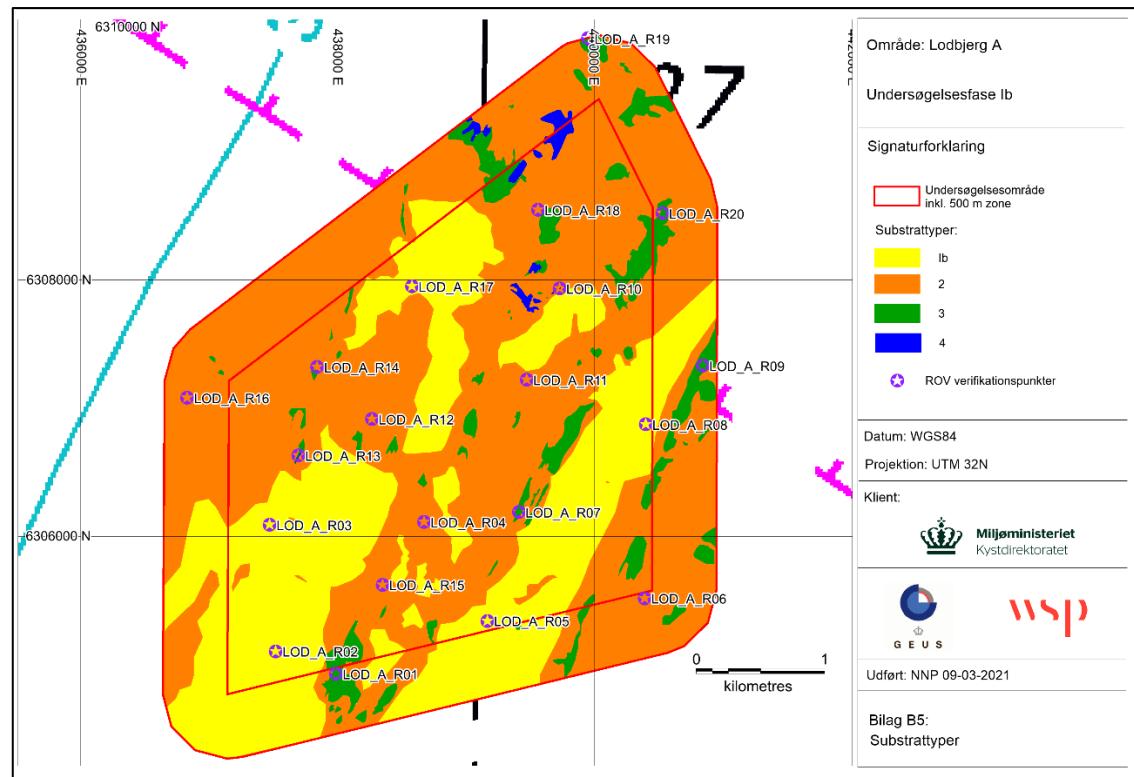
Substrattyperne er inddelt i de fire flg. klasser, jf. Miljøstyrelsens krav til råstofundersøgelser på havet:

- **Substratype 1b** repræsenterer en dynamisk præget fast sandbund med varierende indslag af skaller og grus.

- **Substrattypen 2** består af en blanding af sand og grus samt småsten med en størrelse på op til ca. 10 cm. Substrattypen indeholder også enkelte større sten fra ca. 10 cm og større, der dækker op til maksimalt 10 % af havbunden.
- **Substrattypen 3** består af sand, grus og småsten samt spredte større sten med en dækningsgrad på 10-25%.
- **Substrattypen 4** omfatter stenede områder, hvor større sten dækker mere end 25 %, desuden sand, grus og småsten.

Lodbjerg A

Undersøgelsesområdet er domineret af substrattypen 2 og 1b med underordnet substrattypen 3 og 4 (Figur 12, Kortbilag B5). Substrattypen 4 findes kun i den nordlige del af undersøgelsesområdet og substrattypen 3 findes typisk koncentreret i irregulære bånd som er afbrudt af type 2 bund. Den arealmæssige fordeling af substrattyper i undersøgelsesområdet er vist i Tabel 7. Arealmæssig fordeling af substrattyper i undersøgelsesområdet



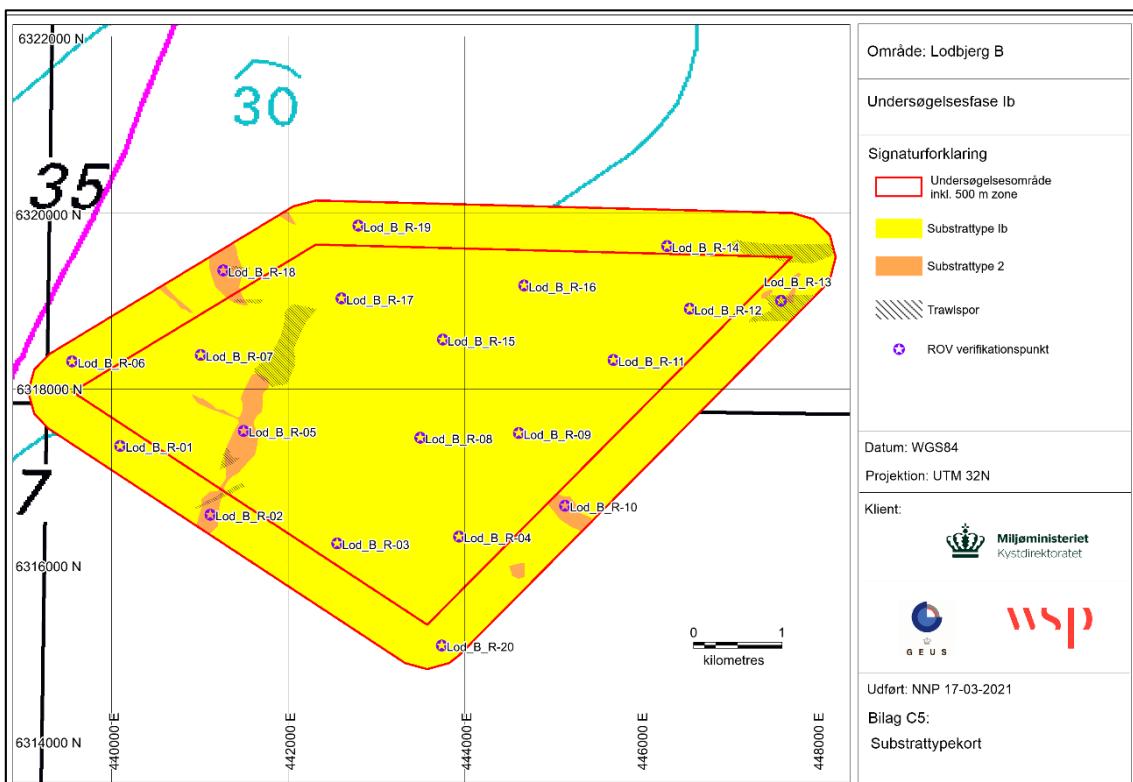
Figur 12. Kortlagt substrattypen fordeling i Lodbjerg A (Bilag B5).

Tabel 7. Arealmæssig fordeling af substrattyper i undersøgelsesområdet

Substrattype	Areal (km ²)	Areal %
1b	6.03	33.46
2	10.88	60.35
3	1.01	5.62
4	0.10	0.57

Lodbjerg B

Undersøgelsesområdet er klart domineret af dynamisk præget fast sandbund substrattypen 1b med stedvist indslag af substrattypen 2 repræsenterende delområder af mere gruset til småstenet karakter (Figur 13, Kortbilag C5). Den arealmæssige fordeling af substrattyper i undersøgelsesområdet er vist i Tabel 8.



Figur 13. Kortlagt substrattypfordeling i Lodbjerg B. Observerede trawlspor er også markeret. Bilag C5.

Tabel 8. Arealmæssig fordeling af substrattyper i undersøgelsesområdet.

Substrattype	Areal (km ²)	Areal %
1b	28.01	97.2
2	0.82	2.8

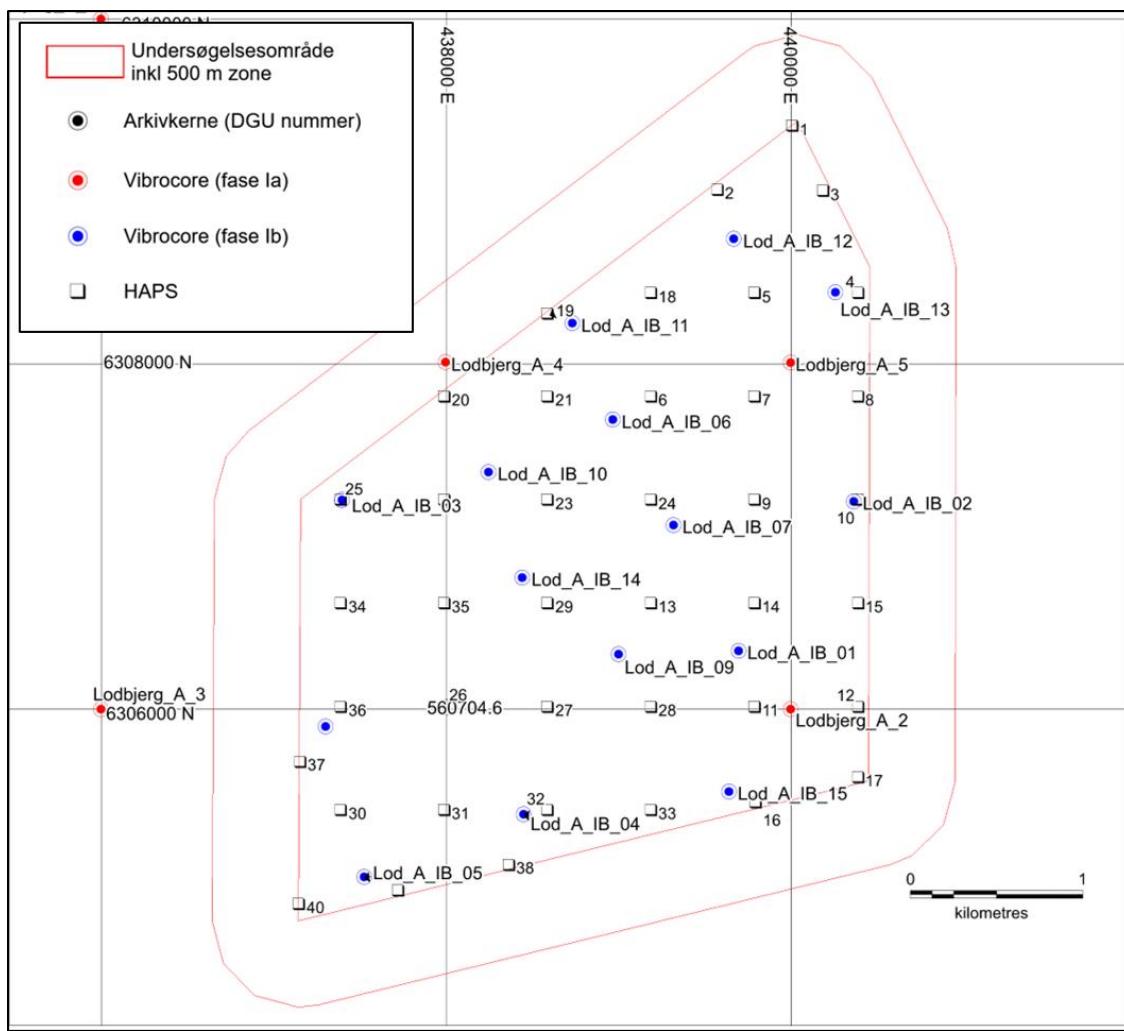
11.7 Vibrationsboringer

På baggrund af preliminær seismisk tolkning blev der udvalgt positioner til fase IB vibrationsboringer i Lodbjerg A og B.

Positionsliste, boringsbeskrivelser, fotos af borer og kornstørrelsedata findes i Bilag D1-D5. Se Figur 14 og Figur 15 (kortbilag B4 og C4) for oversigt over boringspositioner. Herunder er resultaterne af borerne kort sammenfattet.

Lodbjerg A

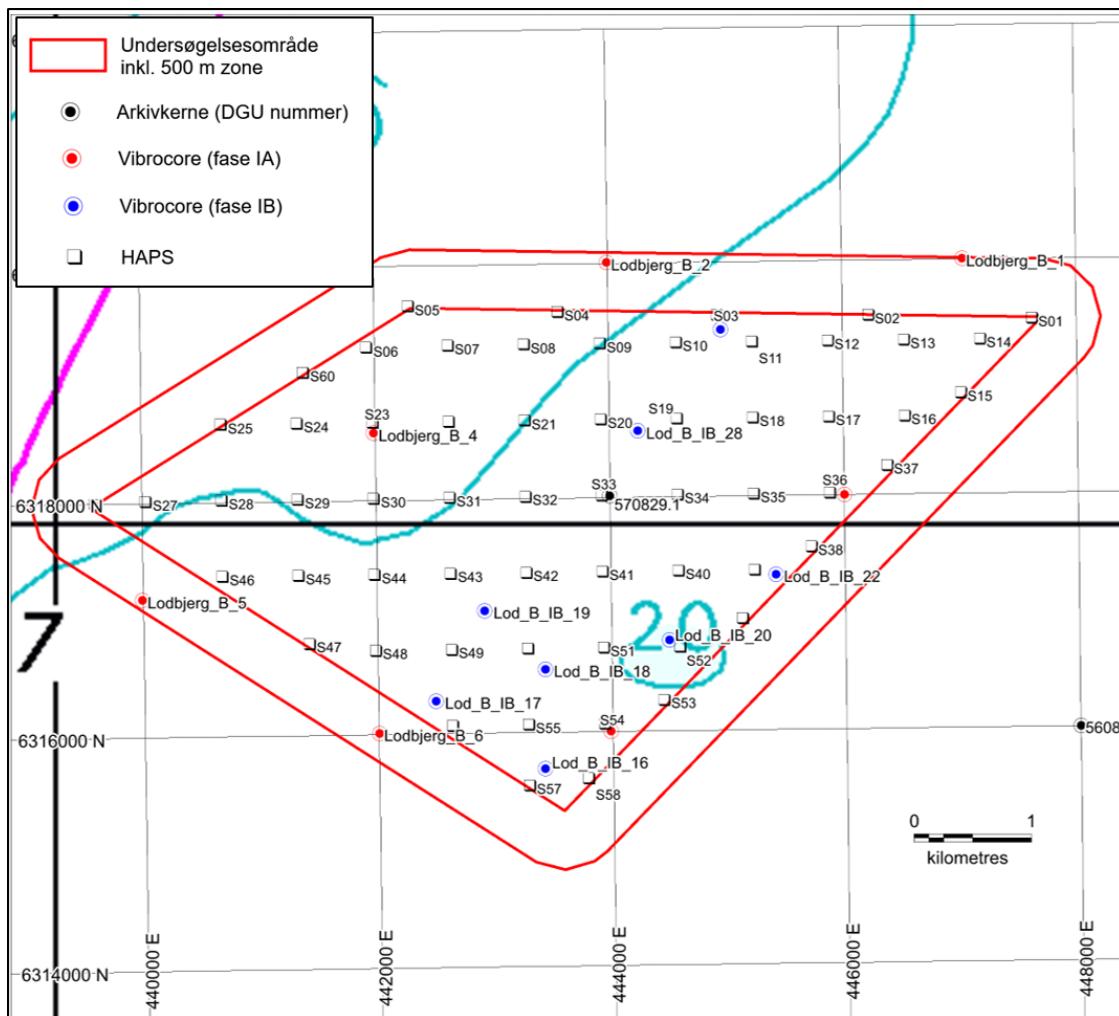
Borerne bekræfter at området er domineret af smeltevandssand og grus, med et varierende dække af marine forholdsvis grovkornede aflejringer domineret af sandet grus med småsten. I områdets nordlige del er de marine grovkornede aflejringer typisk mægtigere end 1 m, mens det marine dække i den sydlige del typisk er <0,5 m. I den østlige del er der ligeledes påvist morænemateriale direkte under en marin gruset enhed (Lod_A_IB_02). Smeltevandsaflejringerne består af vekslende sandede aflejringer med grusindslag. Middelkornstørrelsen (D50) af smeltevandssandet er typisk 0.3-0.4 mm og finstofandel er <5% (mest hyppigt 1-2%).



Figur 14. Vibrationsboringer (fase IA og IB) samt HAPS prøvetagningspunkter i Lodbjerg A.

Lodbjerg B

Boringerne påviser holocænt marint mellemkornet sand til en dybde af minimum 5-6 m i store dele af området. I områdets sydøstlige del er der i flere boringer påtruffet et tyndt toplag (<0,5m) af grusede marine aflejringer. Boringer langs den sydøstlige afgrænsning påviser et lag af grusede og småstensførende marine aflejringer i en dybde af 4-5 m, som er overlejret af mere homogent sand. D50 af det marine sand er typisk 0.3-0.4 mm og finstofandel er <5% (mest hyppigt 1-2%).



Figur 15. Vibrationsboringer (fase IA og IB) samt HAPS prøvetagningspunkter i Lodbjerg B.

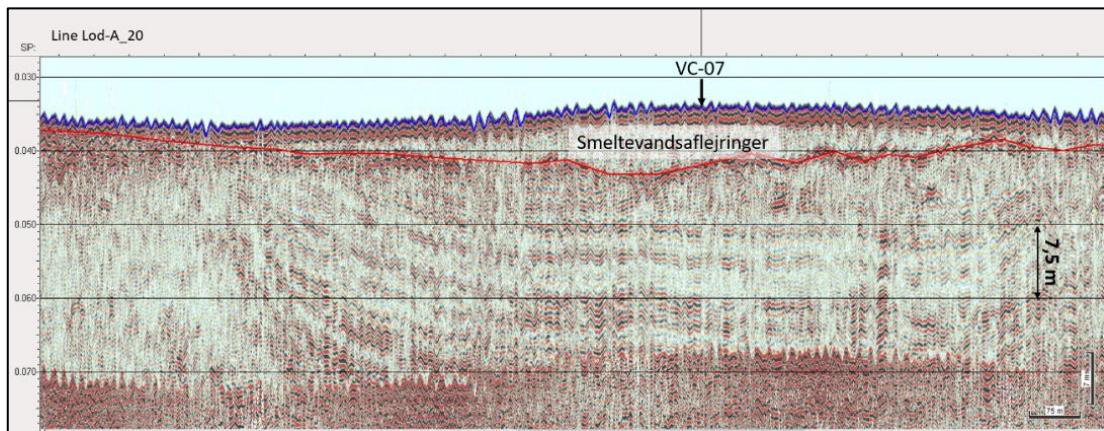
11.8 Seismisk tolkning

Der er foretaget seismisk tolkning af både Sparker og Innomar seismik med sigte på at kortlægge ressourceforekomster, der kan imødekomme KDI's kravsspecifikation. Herunder beskrives tolkningsresultater kortfattet for Lodbjerg A og B.

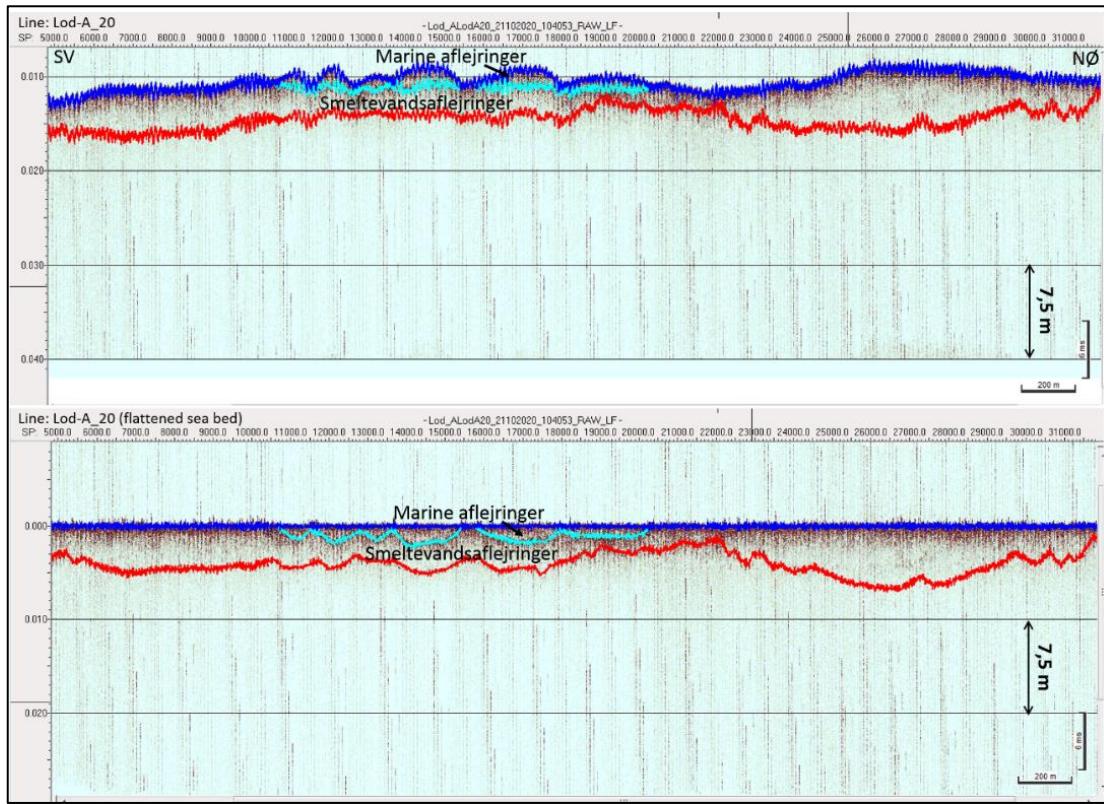
Lodbjerg A

Sparker og Innomar seismik viser en markant grænse mellem ældre glaciale aflejringer og overliggende glaciale-senglaciale smeltevandsaflejringer, som er præget af diffus lagdelt struktur (Figur 16). Stedvis ses også en markant reflektor nærmere havbunden, som antages at repræsentere den erosive basis af overliggende marine holocæne aflejringer, der udviser højere reflektivitet (Figur 17).

På basis af boreriger sammenholdt med seismik er ressourceneheden tolket som mægtighed af smeltevandsaflejringer og marine aflejringer, hvor sidstnævnte, baseret på boringsresultater, vurderes til ikke at være for grovkornet.



Figur 16. Sparker seismik profil gennem boreposition VC-07 i Lodbjerg A. Basis af sandede smeltevandsaflejringer er markeret med rød streg.



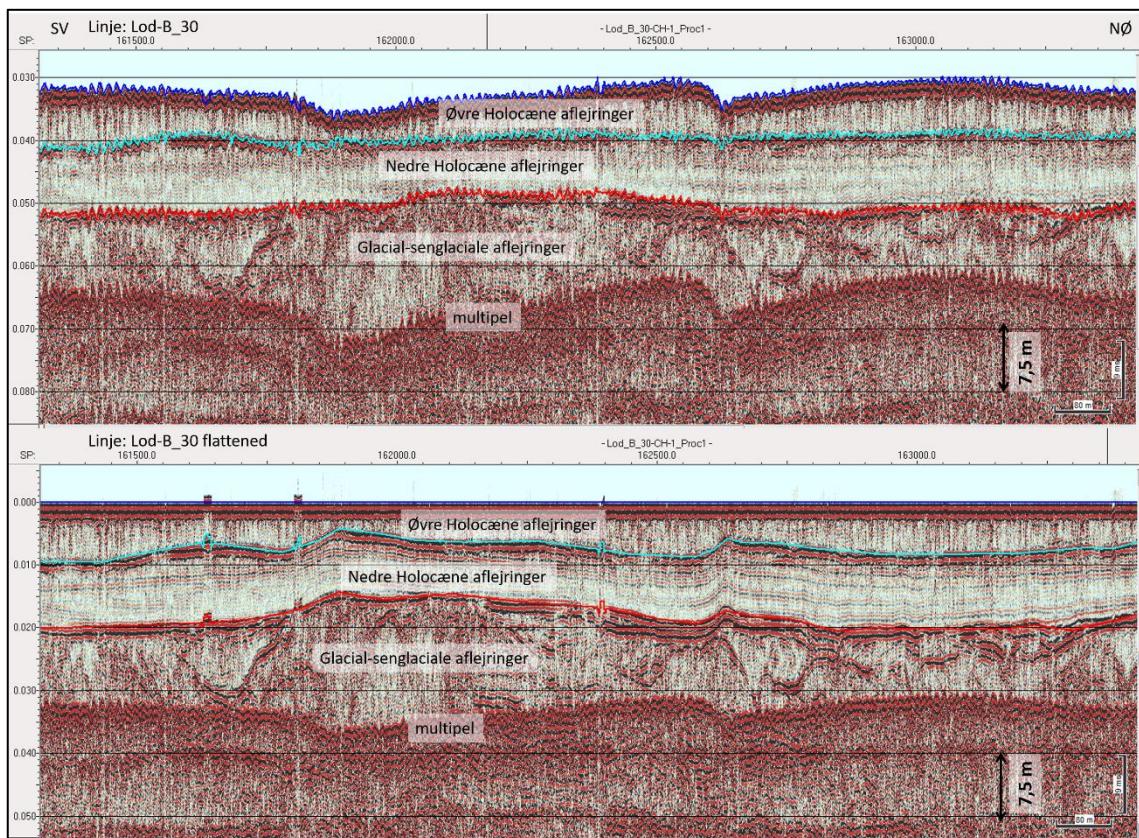
Figur 17. Innimar seismik profil af samme linje i 'unflattened' og 'flattened' version med tolkning af basis af smeltevandsaflejringer (rød markering) og marine aflejringer (lys blå markering).

Lodbjerg B

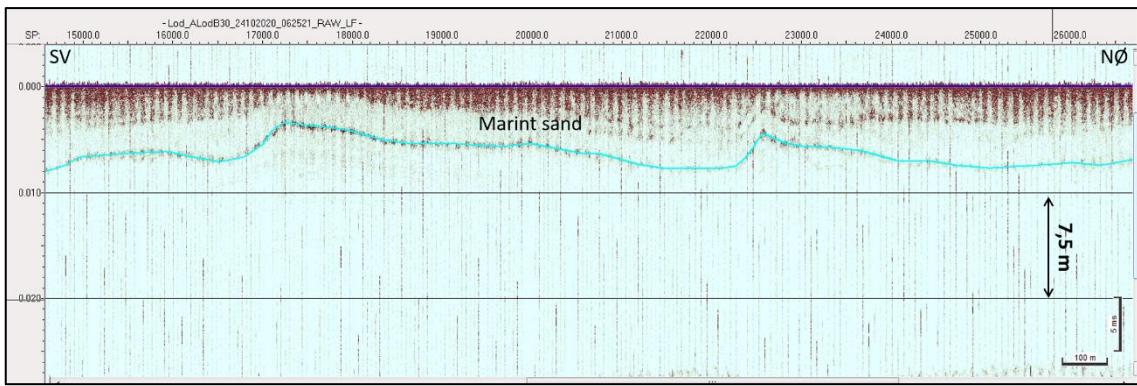
Sparker og Innimar seismik underbygger at den glaciale-senglaciale lagserie er skåret erosivt af en forholdsvis planar grænse til overliggende holocæne aflejringer ca. 10-15 m

under havbunden (Figur 18). Den holocæne lagserie er opbygget af to enheder, der adskilles af en markant, forholdsvis planar reflektor (Figur 19). De nedre holocæne aflejringer er ca. 7-8 m tykke og udviser en plan-parallel lagdeling, der kun stedvis ses at være mere diffus. De øvre holocæne aflejringer har i sparker profiler en svag til diffus lagdeling, der stedvis er skråstillet. Morfologien af de store sandbølger, der præger havbundoverfladen i området, har stor indflydelse på mægtigheden af de øvre holocæne sandaflejringer, som er i størrelsesordenen 1-8 m.

På basis af borer fra fase Ia og Ib sammenholdt med seismisk tolkning er der blevet kortlagt en ressourcenehed svarende til de øvre holocæne aflejringer.



Figur 18. Tolket sparkerprofil gennem centrale del af Lodbjerg B. For at optimere data/støj forholdet er det neder profil 'flattened' i forhold til den markerede havbund. Profilet er ca. 2 km langt.



Figur 19. Innomar seismik eksempel fra Lodbjerg B. Profilet er 'flattened' i forhold til markeret havbundsreflektor for at fremhæve underliggende reflektorer tæt under havbunden. Undergrænsen af øvre holocæne sandenhed er markeret med lys blå streg. Profilet er ca. 2 km langt.

12. Ressourcekortlægning

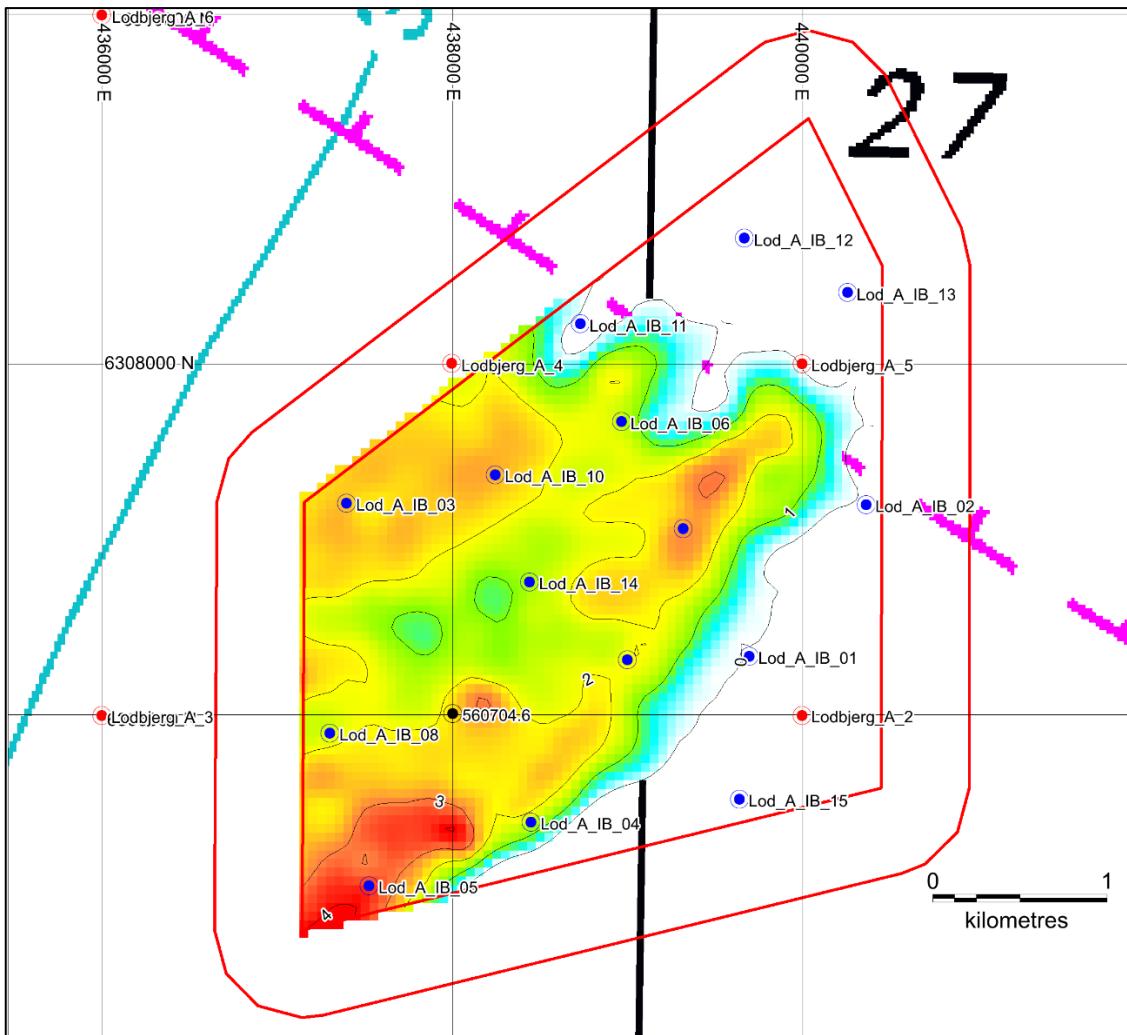
Lodbjerg A

Seismisk tolkning sammenholdt med boringsresultater underbygger at en ressourceenhed overvejende bestående af smeltevandssand og et mestendels tyndt toplag af marine sandede til grusede aflejringer er fokuseret i undersøgelsesområdets centrale til vestlige del (Figur 20, Bilag B6). Her opnår den kortlagte ressource med et areal på ca. 5,75 km² en mægtighed på op til ca. 4 m. Størst mægtighed findes langs to brede strøg orienteret SV-NØ, svarende til orienteringen af en struktur som som dybdedata og substrattyper også fremhæver. Ressourcemængden er samlet beregnet til ca. 9 mio. m³. Dog må det på baggrund af boringsresultaterne forventes, at en vis del af forekomsten, vil have en kritisk høj grus-småstensandel.

I undersøgelsesområdets nordlige del hvor substrattype 3 og 4 forekommer mere hyppigt findes stedvist flere meter tykke marine aflejringer med et højt indhold af grus og småsten. Dette delområde har af både ressourcemæssige og substratmæssige årsager ikke potentiale som sandindvindingsområde. Ligeledes er den sydøstlige del af undersøgelsesområde præget af forekomst af relativt finkornede smeltevandsaflejringer samt moræneaflejringer tæt under havbunden, og dette delområde må ligeledes anses for ikke, at have ressourcemæssig interesse.

Den kortlagte ressourceenhed i den centrale til vestlige del af undersøgelsesområdet er domineret af smeltevandsaflejringer, som overvejende består af mellemkornet sand med tyndere indslag af mere gruset sand og småsten. Kornstørrelsesmiddelværdi er ca. 0,35 mm, finstofsindholdet <0,125 mm er gennemsnitligt 3,35% og glødetabet er ca. 0,3-0,5%.

Havbundsoverfladen er i ressourceområdet er domineret af substrattype 1b og 2 samt spredte små områder med større koncentration af substrattype 3 præget af højere koncentration af lidt større sten. Det må forventes at enheden under ressourceenheden vil være præget af glaciale aflejringer så som moræne og grovkornede smeltevandsaflejringer.



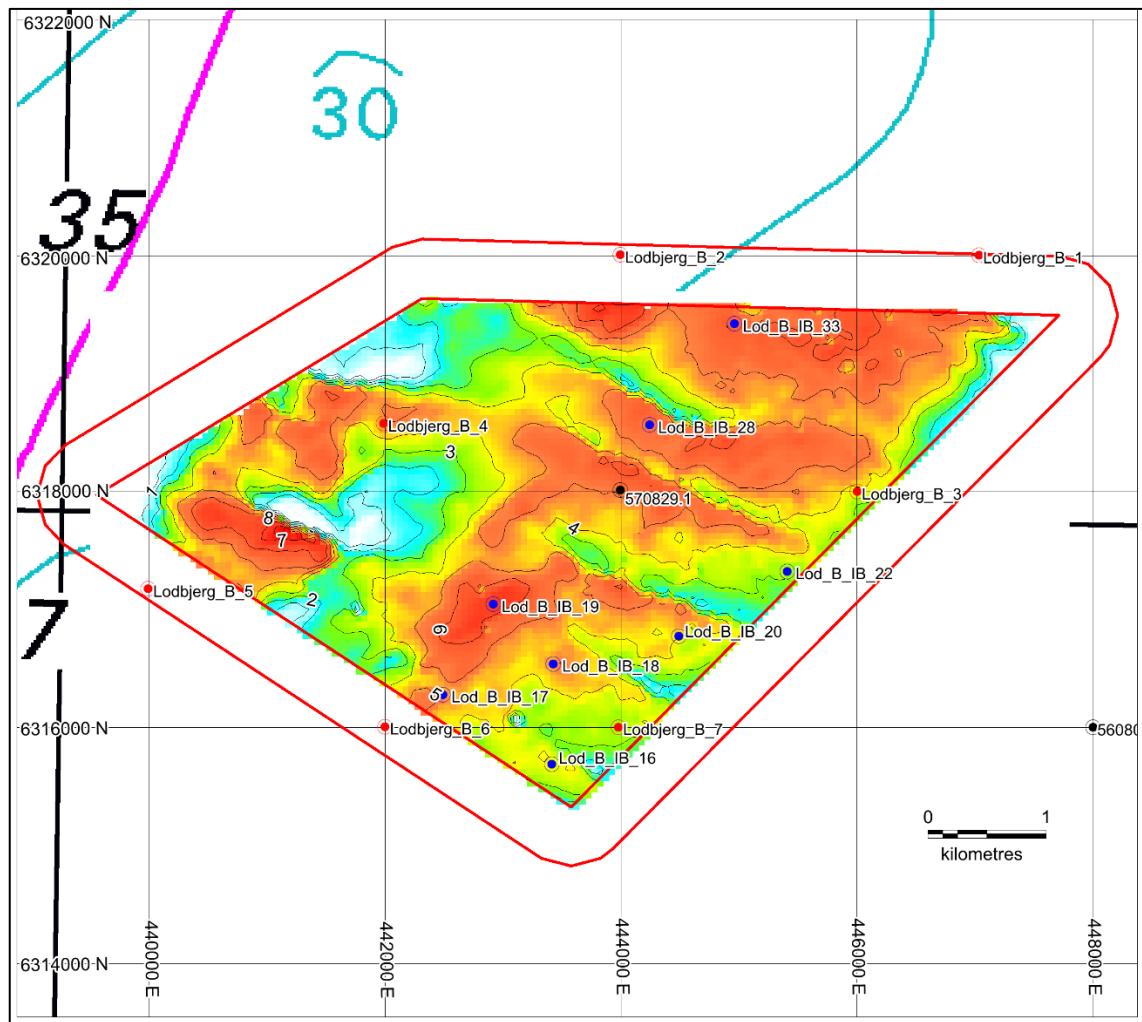
Figur 20. Kortlagt ressourcemægtighed i Lodbjerg A. Konturintervallet er 1 m.

Lodbjerg B

Seismisk tolkning sammenholdt med boringsresultater underbygger, at der fordelt over hele Lodbjerg B undersøgelsesområdet, forefindes en relativ homogen ressourceforekomst af marine sandede aflejringer, der opfylder KDI's kravsspecifikationer (Figur 21, Bilag C6)). Forekomsten bestående af øvre holocæne, marine aflejringer har en varierende mægtighed på 1-8 m og er defineret af store tværgående sandrygge orienteret NV-SØ. Sandryggene er mest veldefinerede i områdets centrale til østlige del, og i området vestlige dybere del mister ryggene karakter, og her findes også partier med meget ringe ressourcetykkelse. I områdets sydlige hjørne dokumenterer flere borekerner, at der findes et relativt tyndt (<0,5 m) gruset toplag over de homogene sandaflejringer.

Kornstørrelsesmiddelværdien af sandressourcen varierer mellem 0,3 og 0,4 mm, finstofsindholdet <0,125 mm er 0,5- 3% og glødetabet er ca. 0,3-0,5%. Havbundsoverfladen er i ressourceområdet domineret af dynamisk sandet substratttype 1b, med mindre områder af mere gruset og småstenet karakter i nogle af de dybe trug mellem sandbundformerne. Under ressourceforekomsten findes ældre holocæne siltede-finsandede marine aflejringer, som er dokumenteret af enkelte fase 1a borekerner.

Det potentielle ressourcefolumen er beregnet til at være ca. 50 mio. m³. Grundet den ressourcemæssige homogene karakter, må dette tal anses for at være relativt nøjagtigt.



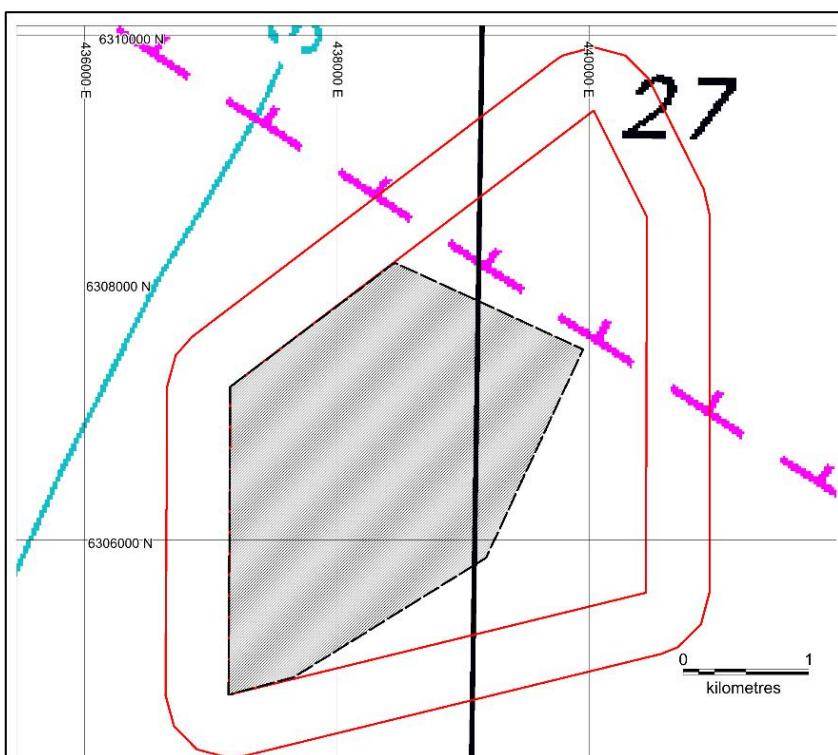
Figur 21. Kortlagt ressourcemægtighed i Lodbjerg B. Konturintervallet er 1 m.

13. Ind vindingsansøgningsområder

På baggrund af resultater af fase IB geofysiske undersøgelser understøttet med borer, HAPS overfladeprøver samt ROV verifikationsdyk, er der i samråd med Kystdirektoratet udvalgt nedenstående potentielle ind vindingsansøgningsområder for Lodbjerg A og B.

Lodbjerg A

Der er udpeget potentielt ind vindingsansøgningsområde defineret af marginen af den kortlagte ressourceenhed, og herudover er marginale dele af ressourceområdet præget af lidt større forekomster af substrattypen 3 fravalgt. Det potentielle ansøgningsområde er vist i Figur 22 og hjørnepunkter er anført i Tabel 9.



Figur 22. Potentielt ind vindingsansøgningsområde I Lodbjerg A angivet med stiplet polygon.

Tabel 9. Hjørnekoordinater for Lodbjerg A potentielt ind vindingsansøgningsområde.

X (UTM32N)	Y (UTM32N)	Lat	Long
438456	6308200	56° 54.803'	007° 59.353'
439950	6307510	56° 54.443'	008° 00.835'
439181	6305858	56° 53.547'	008° 00.101'
437656	6304908	56° 53.023'	007° 58.614'
437140	6304770	56° 52.944'	007° 58.108'
437155	6307214	56° 54.262'	007° 58.086'

Lodbjerg B

På baggrund af fase Ib ressourcekortlægning understøttet med borer, HAPS overfladeprøver samt ROV verifikationsdyk er hele Lodbjerg B området udvalgt som potentielt indvindingsansøgningsområde. Områdeafgrænsning er angivet i afsnit 1.7, Tabel 3.

14. Referencer

GEO, 2011a: Nordsøen Efterforskning og kortlægning af sandressourcer Fase 1A GEO projekt nr. 33776 Rapport 1, 2011-10-14.

GEO, 2011b: Nordsøen Efterforskning og kortlægning af sandressourcer Fase 1B – detailområde 3-1 GEO projekt nr. 33776 Rapport 3, 2011-11-28.

GEUS Rapport 2000/43: Geologisk kortlægning af Jyske Rev - En tolkning af den geologiske udvikling samt en vurdering af ressourcepotentiale. GEUS Rapport 2000, no. 43. Af Leth, J.O.

GEUS Rapport 2010/23: Model for potentielle sand- og grusforekomster for de danske farvande. Delområdet Jyske Rev - Lille Fisker Banke. Af Jensen, J.B., Leth, J.O., Borre, S. & Nørgaard-Pedersen, N.

GEUS Rapport 2020/10: Screening af potentielle sandindvindingsområder i Reservationsområde 1, Nordsøen, for Kystdirektoratet - Rådgivning og bistand vedrørende indhentning af fremtidige råstofindvindingstilladelser i forbindelse med Kystdirektoratets fællesaftaler.

Leth, J. O. 1996: Late Quaternary geological development of the Jutland Bank and the initiation of the Jutland Current, NE North Sea. Norges geologiske undersøgelse Bulletin 430, 25–34.

Marine Råstofdatabase - Marta (<https://data.geus.dk/geusmap/?mapname=marta>)

Bilag

Reservationsområde 1 (supplerende fase IA):

- A1:** Eksisterende data og interesseområder
- A2:** Fase IA boringspositioner og udvalgte fase IB surveyområder

Lodbjerg A kortbilag (fase IB):

- B1:** Sejlinjer
- B2:** Bathymetri baseret på multibeam opmåling
- B3:** Side-scan sonar mosaik
- B4:** Prøvetagningpunkter (Vibrocores og HAPS)
- B5:** Substrattypekort
- B6:** Kortlagt ressourcemægtighed
- B7:** Potentielt Fase IB område

Lodbjerg B kortbilag (fase IB):

- C1:** Sejlinjer
- C2:** Bathymetri baseret på multibeam opmåling
- C3:** Side-scan sonar mosaik
- C4:** Prøvetagningpunkter (Vibrocores og HAPS)
- C5:** Substrattypekort
- C6:** Kortlagt ressourcemægtighed

Boringer:

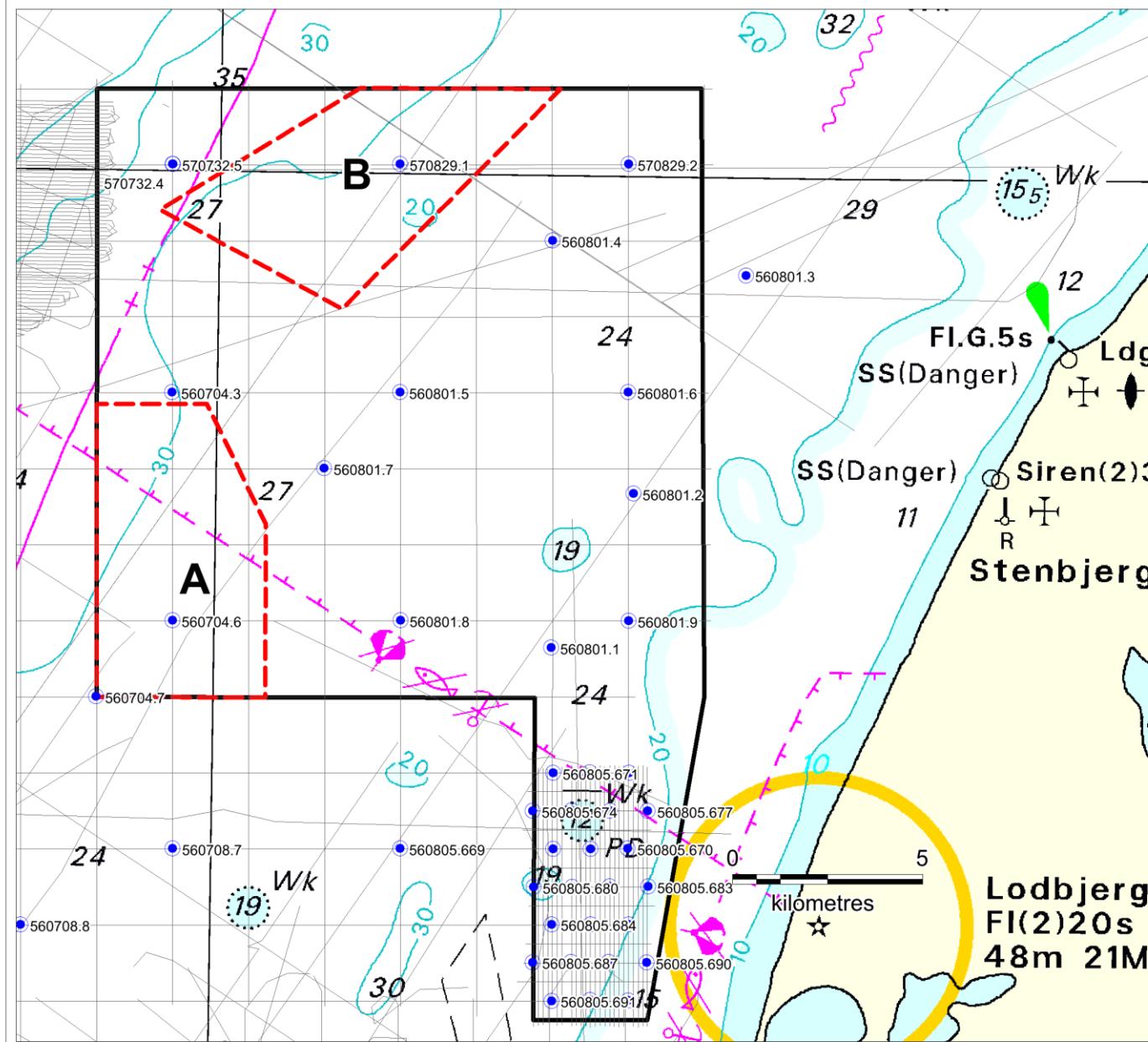
- D1:** Boringspositionsliste
- D2:** Boringsbeskrivelser med udvalgte analyseresultater
- D3:** Fotos af boringer
- D4:** Boringer: Kornstørrelse-, vandindhold-, og glødetabsanalyser (oversigt)
- D5:** Boringer: Kornstørrelsесdata og fordelingskurver

HAPS prøvetagninger (WSP survey, kortfattet oversigt):

- E1:** HAPS positioner og feltbeskrivelser
- E2:** HAPS analyseresultater

ROV verifikations-video (WSP survey, kortfattet oversigt):

- F1:** Positionsliste og substrattypebeskrivelse



Område: Lodbjerg A og B

Undersøgelsesfase: Supplerende IA

Signaturforklaring

█████ Reservationsområde 1

██████ Interesseområde -
Supplerende fase IA

● Eksisterende borer

— Eksisterende sejlinjer

Datum: WGS84

Projektion: UTM 32N

Klient:

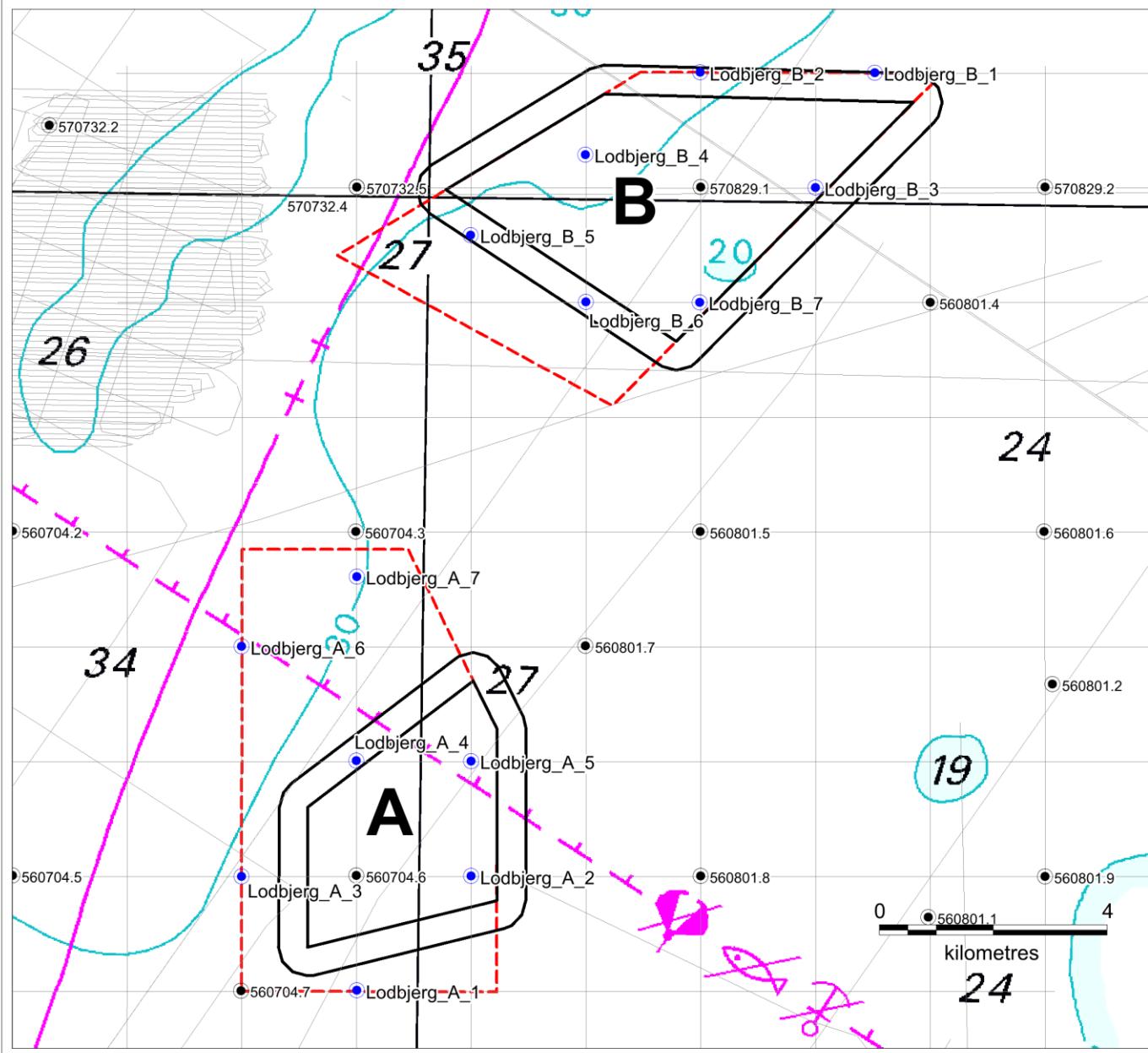


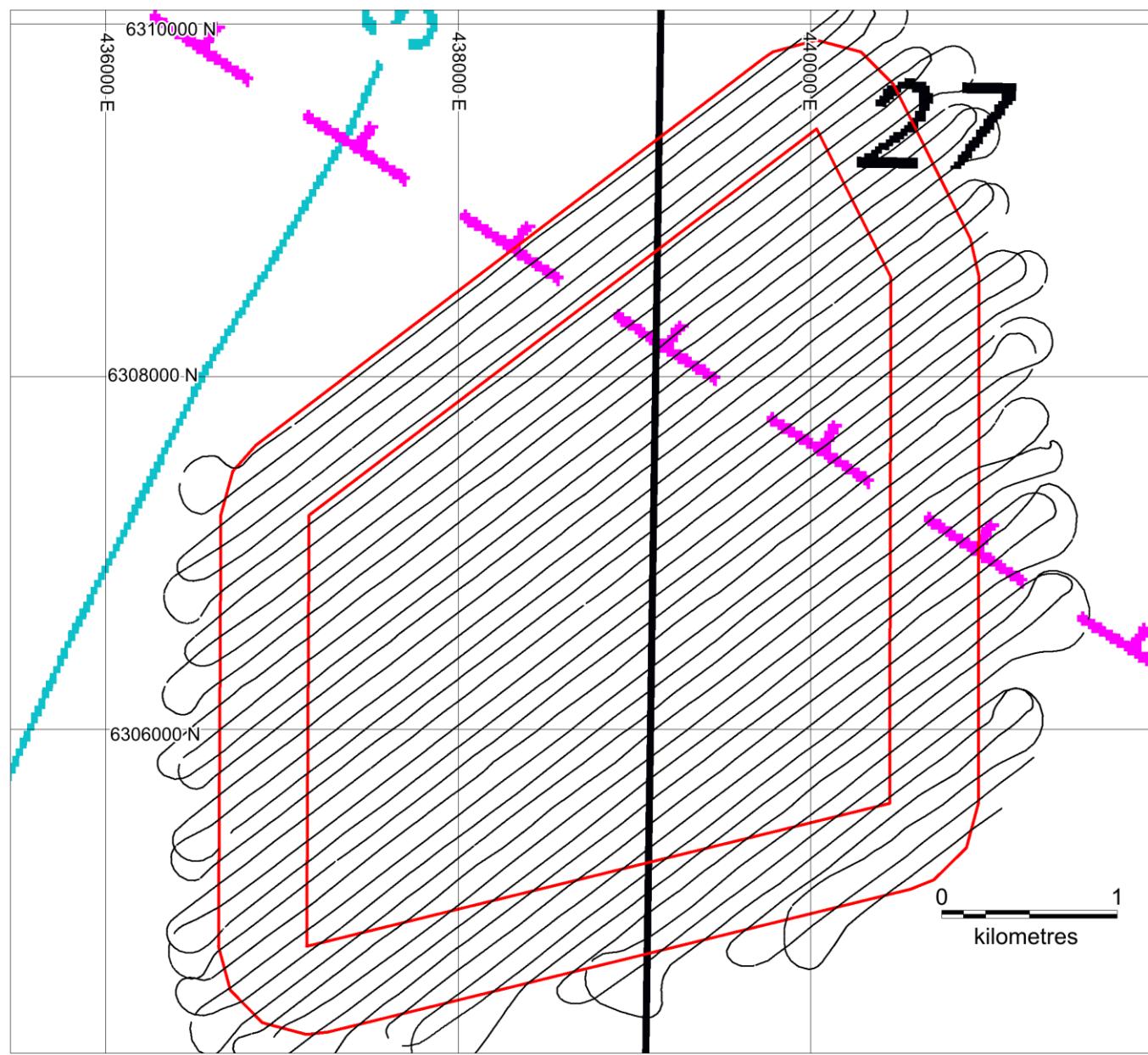
G E U S

Udført: NNP 04-03-2021

Bilag A1:

Eksisterende data i
undersøgelsesområder





Område: Lodbjerg A

Undersøgelsesfase Ib

Signaturforklaring

Undersøgelsesområde inkl 500 m zone

Sejlinje

Datum: WGS84

Projektion: UTM 32N

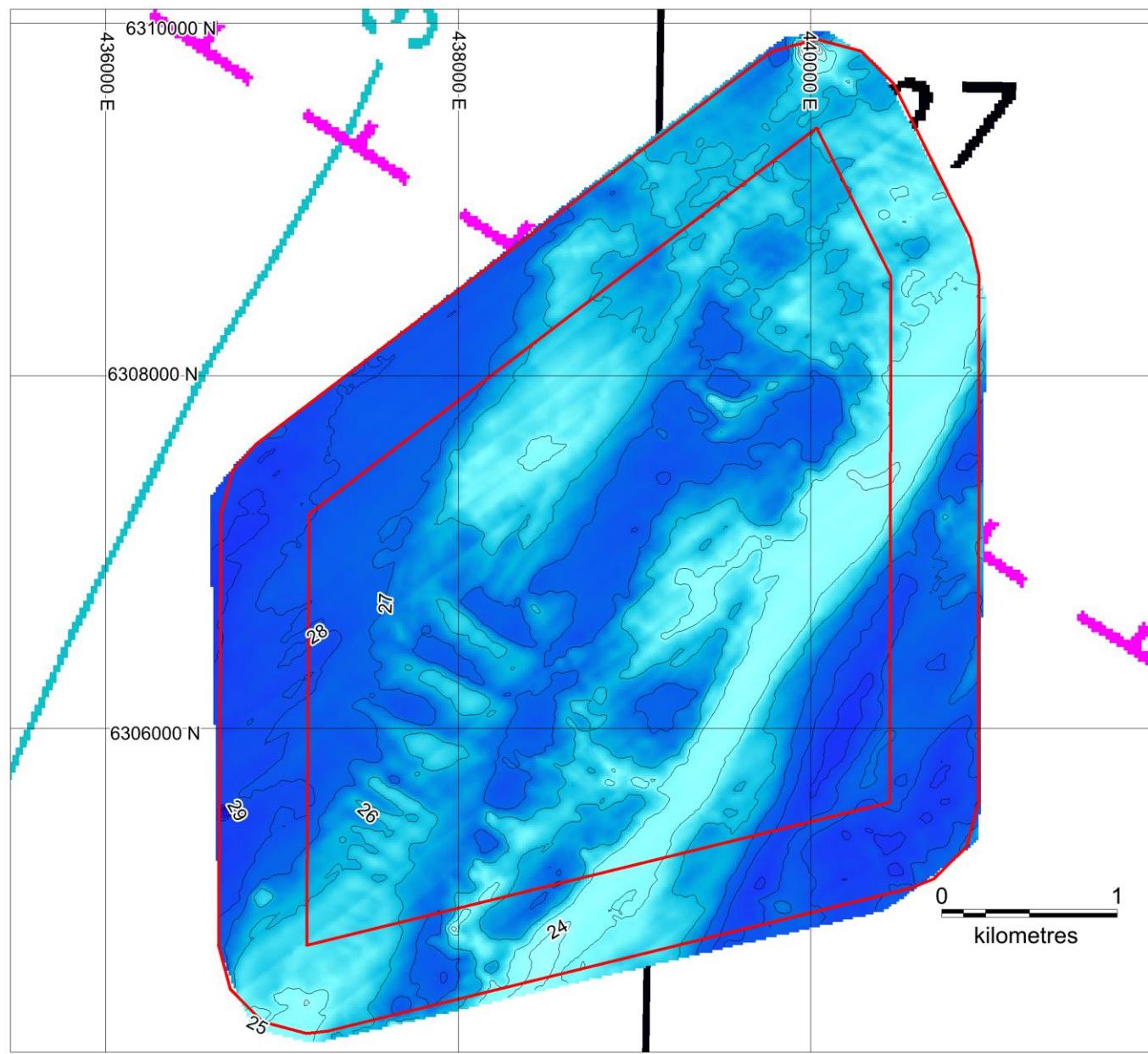
Klient:



WSP

Udført: NNP 09-03-2021

Bilag B1:
Sejlinjer



Område: Lodbjerg A

Undersøgelsesfase Ib

Signaturforklaring

Undersøgelsesområde
 inkl 500 m zone

Dybde (m) DVR90

30.0
29.0
28.0
27.0
26.0
25.0
24.0
23.0

Datum: WGS84

Projektion: UTM 32N

Klient:

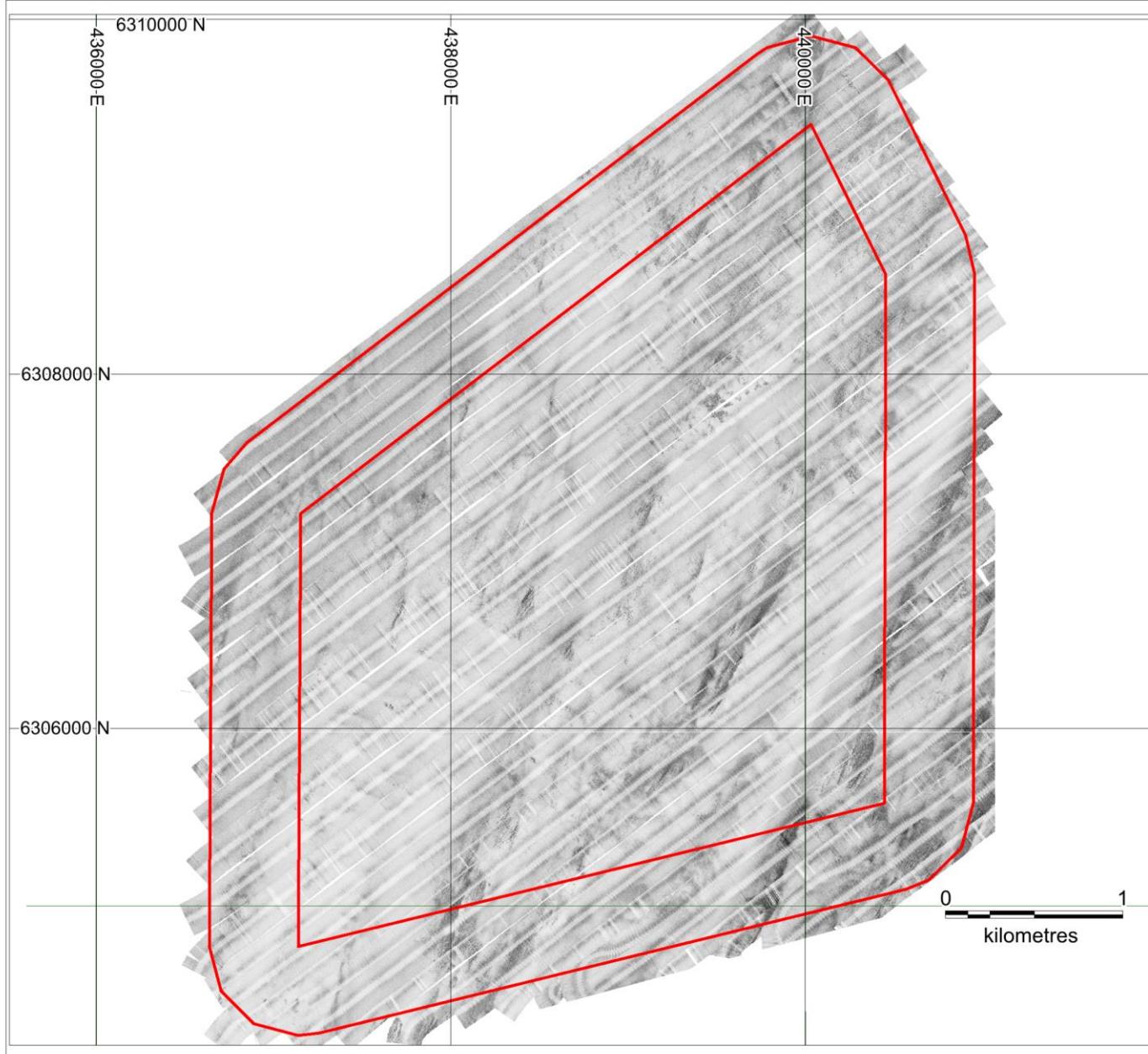


WSP

Udført: NNP 17-03-2021

Bilag B2:

Bathymetri



Område: Lodbjerg A

Undersøgelsesfase Ib

Signaturforklaring

Undersøgelsesområde
inkl. 500 m zone

Datum: WGS84

Projektion: UTM 32N

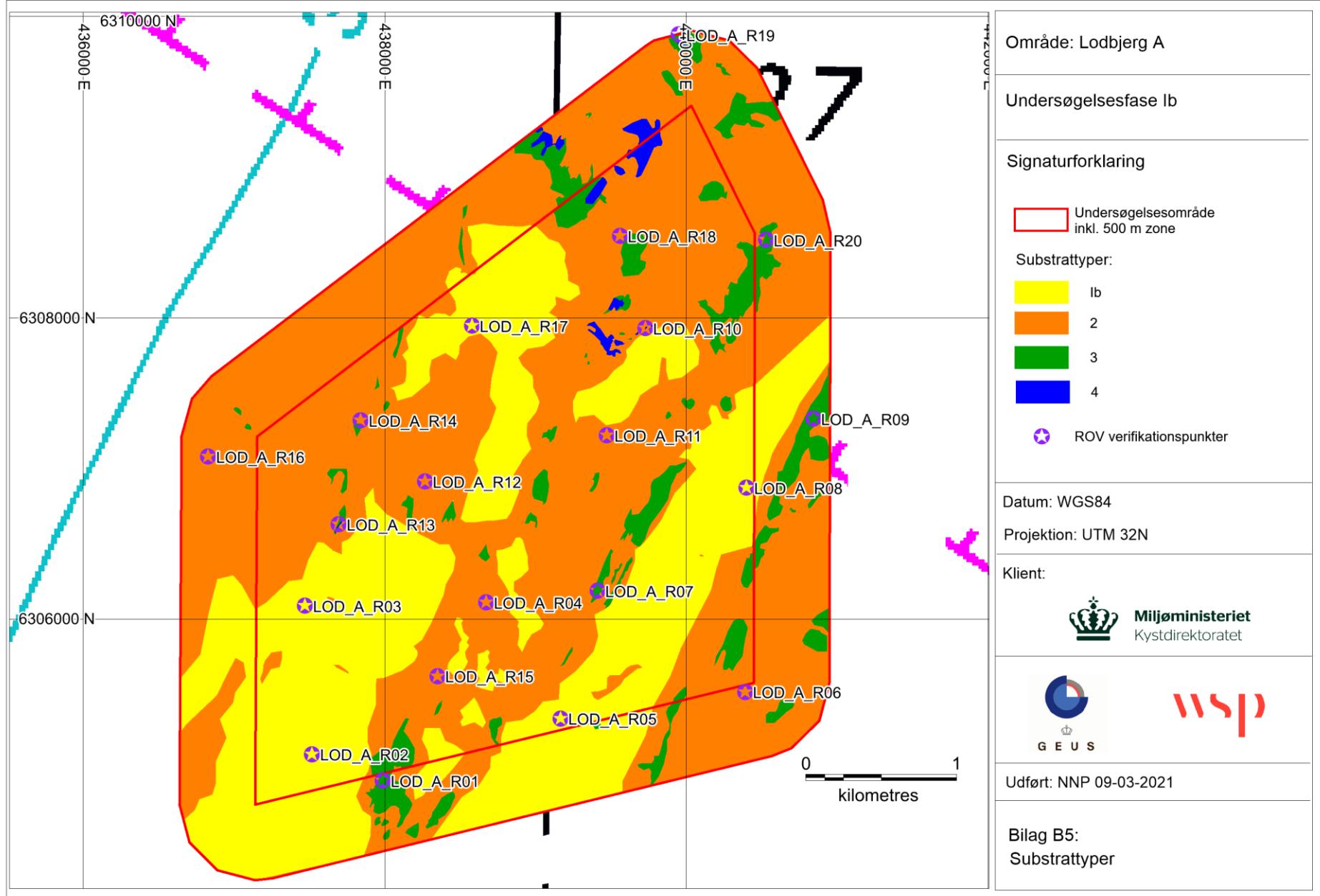
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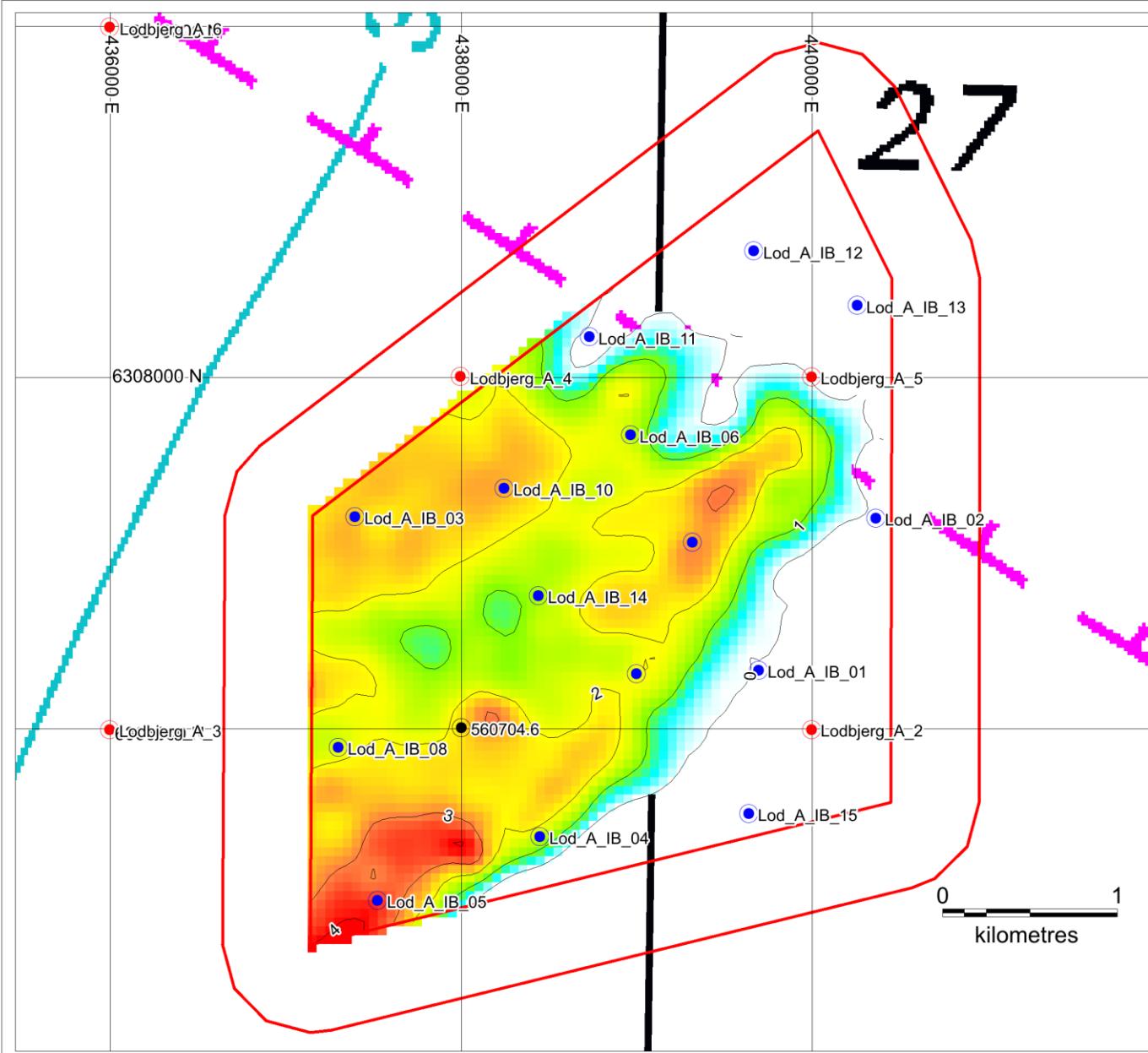


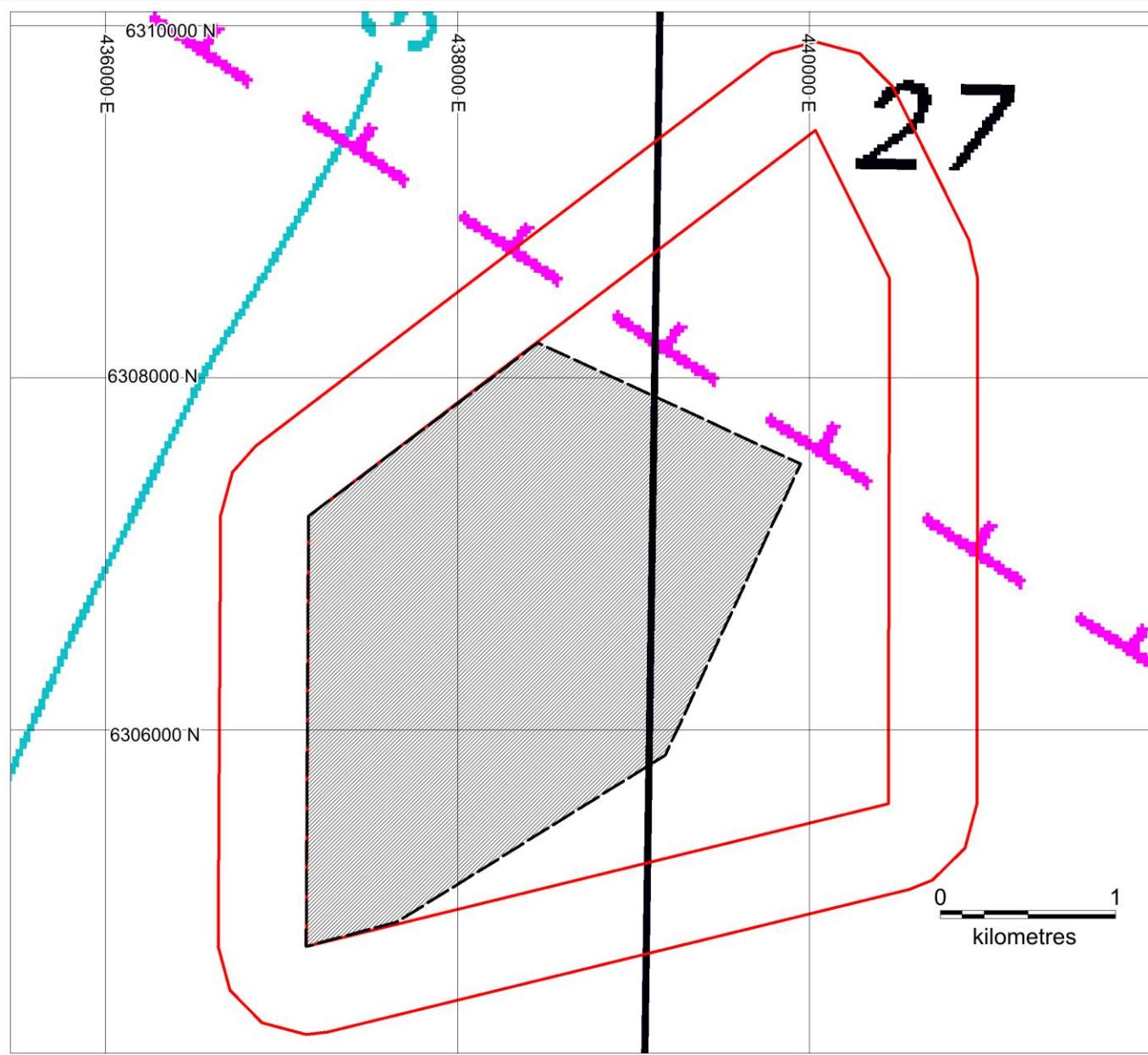
WSP

Udført: NNP 09-03-2021

Bilag B3:
Side-scan sonar mosaik







Område: Lodbjerg A

Undersøgelsesfase Ib

Signaturforklaring

Undersøgelsesområde inkl 500 m zone

Potentielt indvinding-
ansøgningsområde

Datum: WGS84

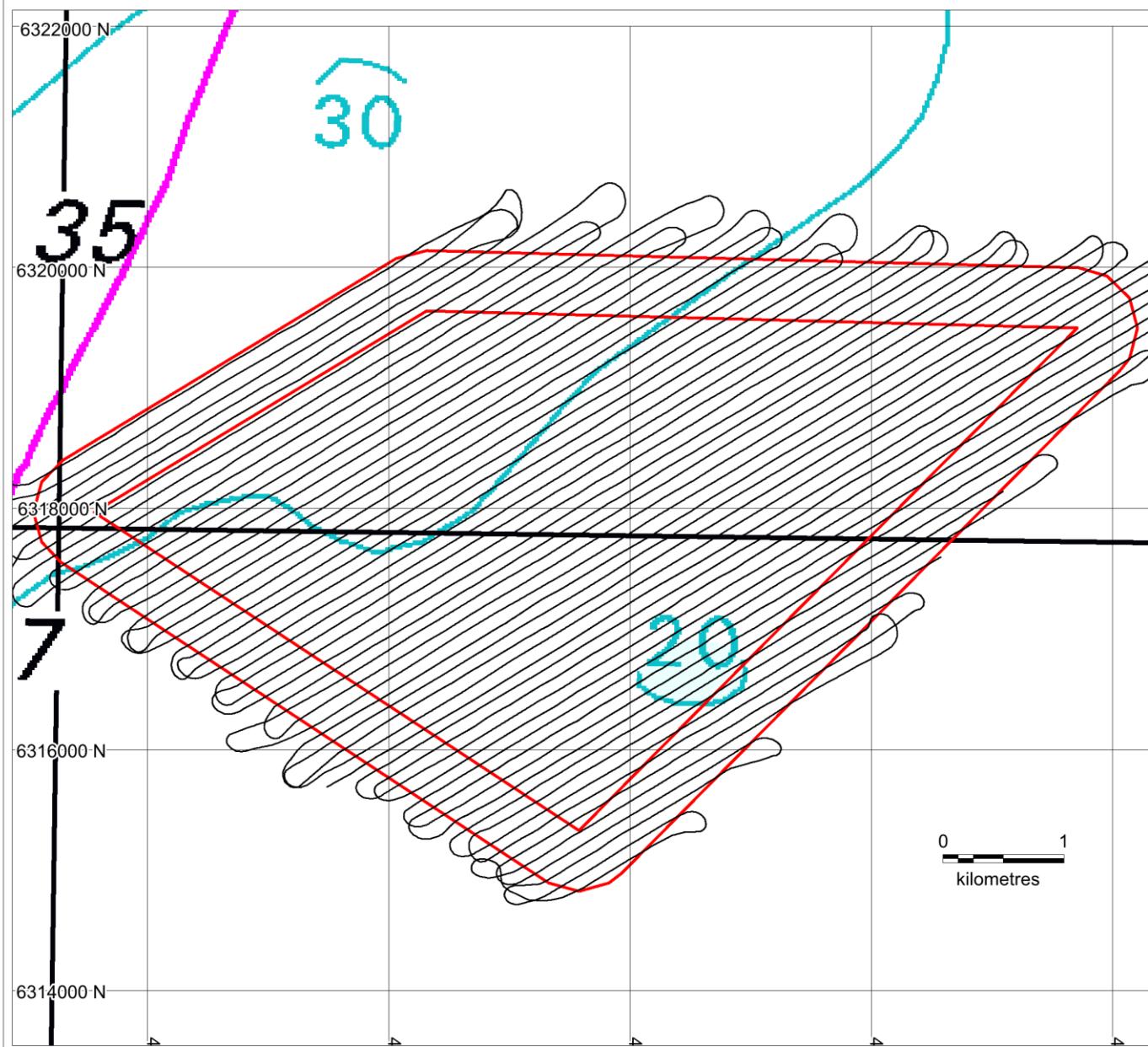
Projektion: UTM 32N

Klient:



Udført: NNP 09-03-2021

Bilag B7:
Potentielt indvinding-
ansøgningsområde



Område: Lodbjerg B

Undersøgelsesfase Ib

Signaturforklaring

Undersøgelsesområde inkl. 500 m zone

Sejllinje

Datum: WGS84

Projektion: UTM 32N

Klient:

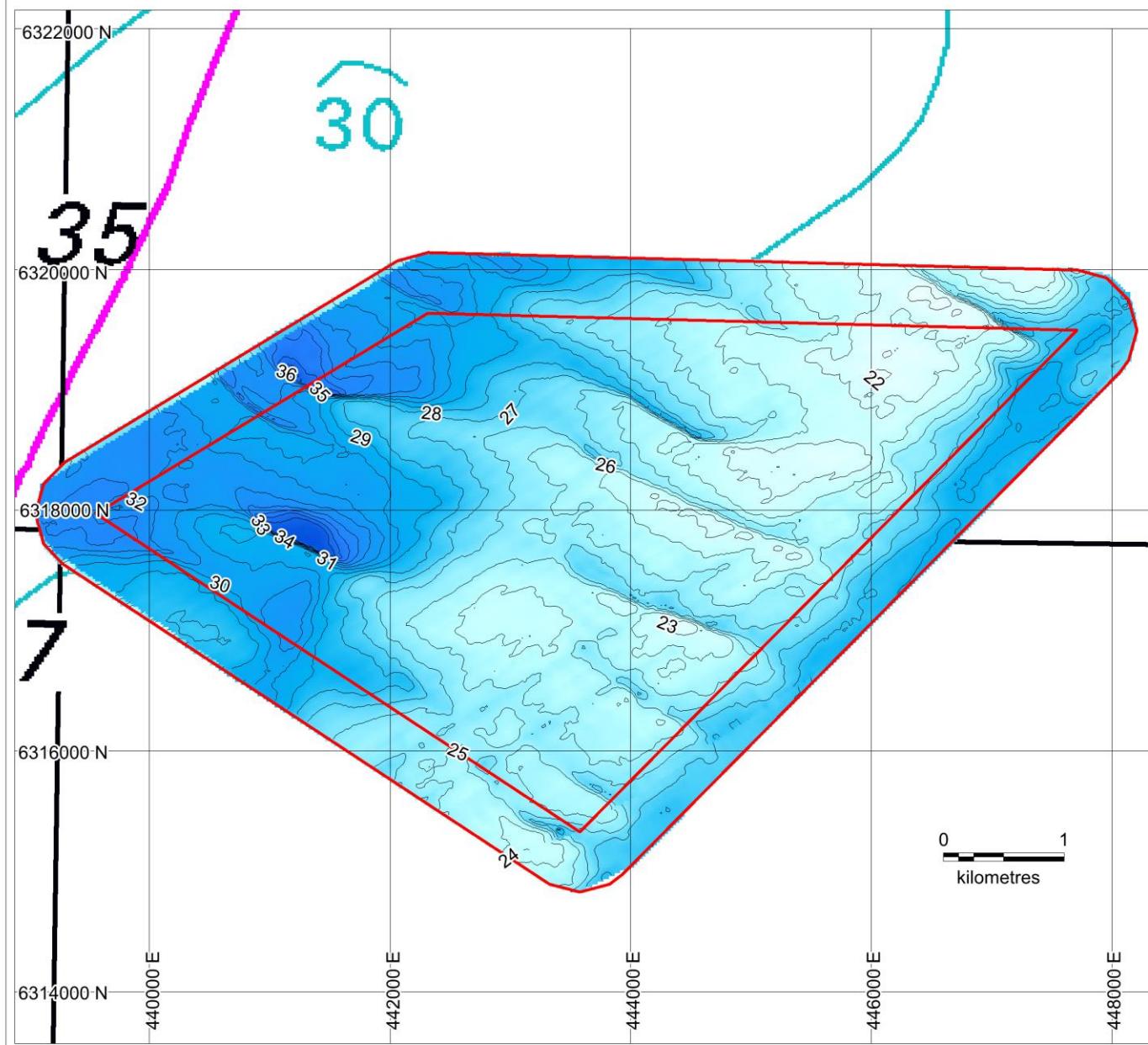


WSP

Udført: NNP 17-03-2021

Bilag C1:

Sejllinjer



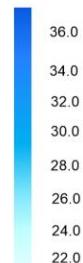
Område: Lodbjerg B

Undersøgelsesfase Ib

Signaturforklaring

 Undersøgelsesområde
inkl. 500 m zone

Dybde (m), DVR90



Datum: WGS84

Projektion: UTM 32N

Klient:

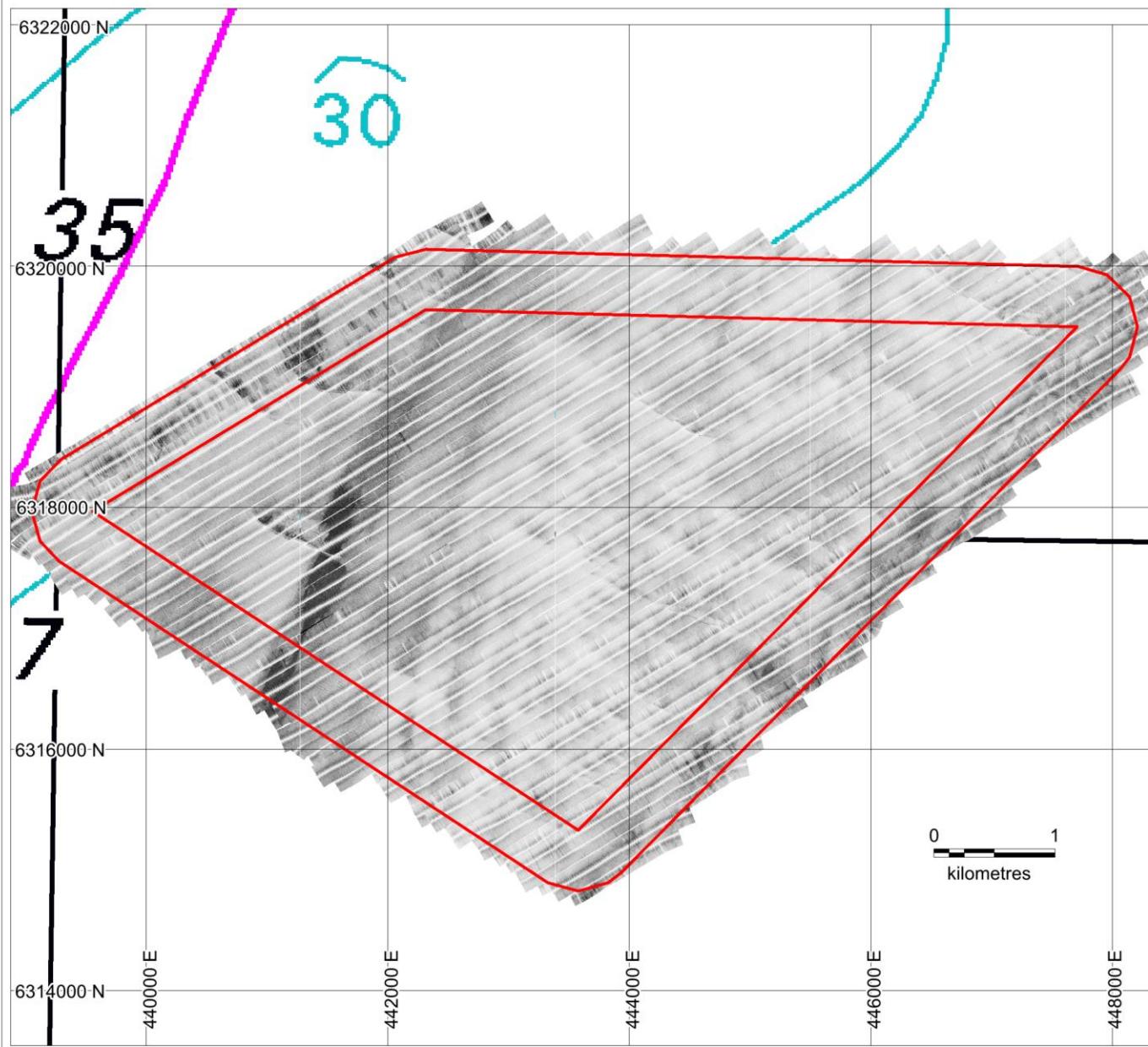


WSP

Udført: NNP 17-03-2021

Bilag C2:

Bathymetri



Område: Lodbjerg B

Undersøgelsesfase Ib

Signaturforklaring

Undersøgelsesområde
inkl. 500 m zone

Datum: WGS84

Projektion: UTM 32N

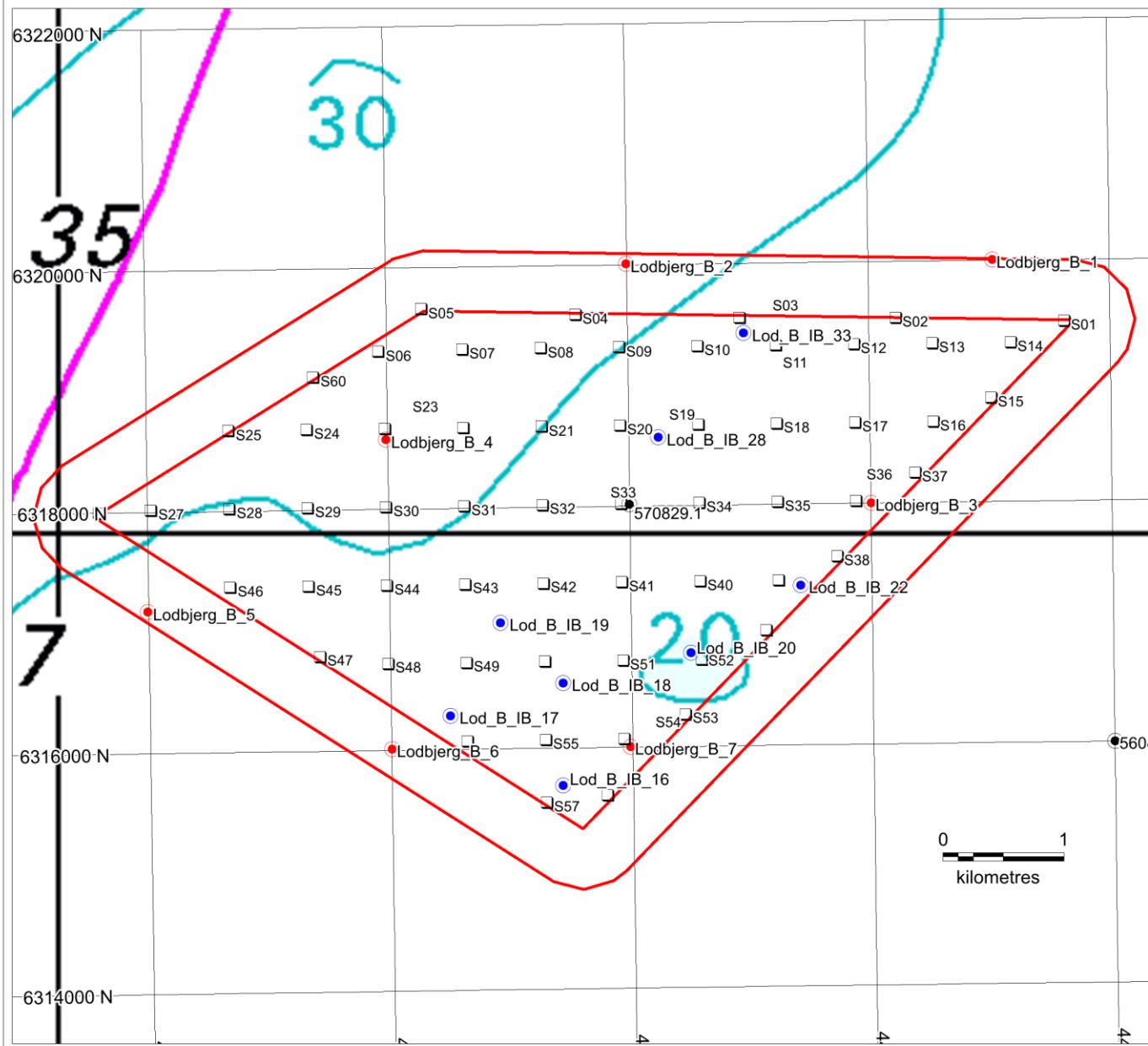
Klient:



Udført: NNP 17-03-2021

Bilag C3:

Side-scan sonar mosaik



Område: Lodbjerg B

Undersøgelsesfase Ib

Signaturforklaring

- Undersøgelsesområde inkl. 500 m zone
- Arkivkerne (DGU nummer)
- Vibrocoring (fase IA)
- Vibrocoring (fase IB)
- HAPS

Datum: WGS84

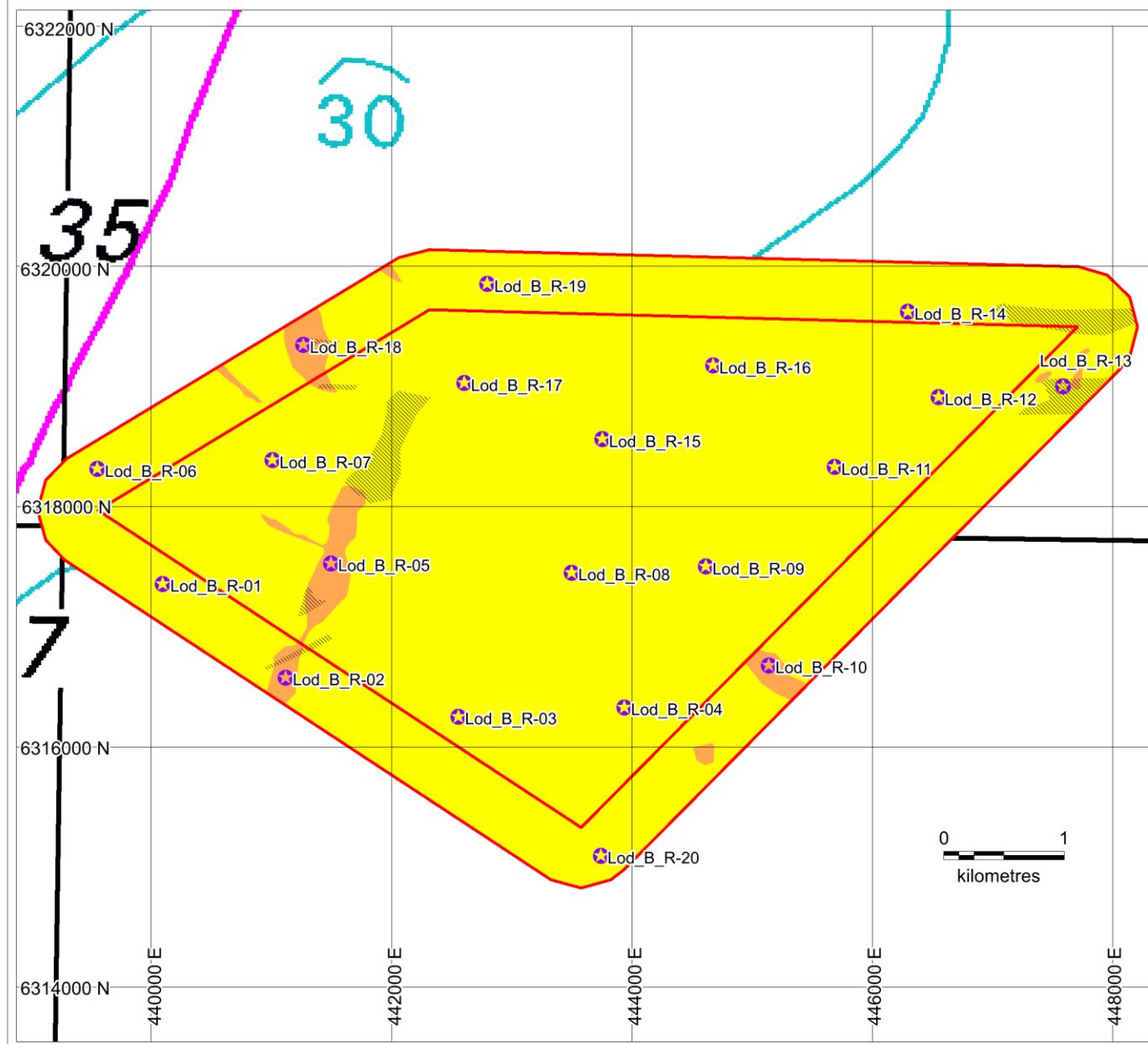
Projektion: UTM 32N

Klient:



Udført: NNP 09-03-2021

Bilag C4:
Prøvetagningspunkter



Område: Lodbjerg B

Undersøgelsesfase Ib

Signaturforklaring

- Undersøgelsesområde inkl. 500 m zone
- Substrattype Ib
- Substrattype 2
- Trawlspor
- ROV verifikationspunkt

Datum: WGS84

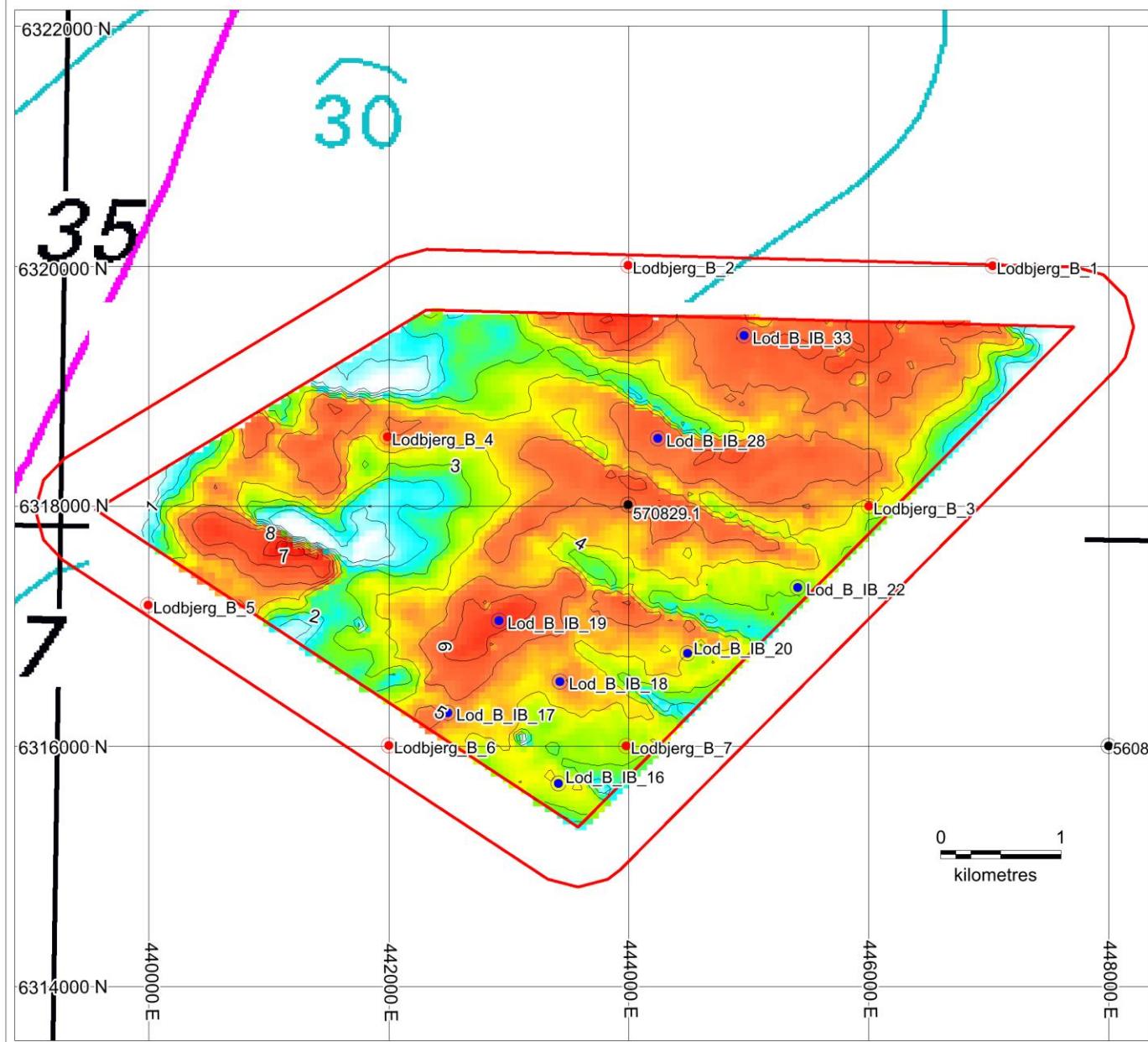
Projektion: UTM 32N

Klient:



Udført: NNP 17-03-2021

Bilag C5:
Substrattypekort



Område: Lodbjerg B
Undersøgelsesfase Ib
Signaturforklaring
<ul style="list-style-type: none"> Underøgelsesområde inkl. 500 m zone Arkivkerne (DGU nummer) Vibrocore (fase IA) Vibrocore (fase IB)
Ressourcemægtighed (m)
Datum: WGS84
Projektion: UTM 32N
Klient:
Miljøministeriet Kystdirektoratet
G E U S
Udført: NNP 17-03-2021
Bilag C6: Ressourcemægtighed

Bilag D1

- Vibrationsboringer fase Ia og Ib

Fase Ia:

Core id.	DGU. Nr.	X (UTM 32N)	Y (UTM 32N)	Deg E	Deg N	Vanddybde m
Lod-A1	560704. 23	438006	6304006	007° 58.942'	56° 53.617'	24
Lod-A2	560704. 24	439998	6305992	008° 00.903'	56° 53.626'	28.5
Lod-A3	560801. 29	435998	6305992	007° 56.965'	56° 53.593'	29.5
Lod-A4	560801. 30	437996	6308004	007° 58.903'	56° 54.694'	28
Lod-A5	560704. 25	439996	6308003	008° 00.873'	56° 54.709'	28
Lod-A6	560704. 26	436000	6309999	007° 56.907'	56° 55.753'	31
Lod-A7	560704. 27	438004	6311221	007° 58.864'	56° 56.428'	29
Lod-B1	560801. 31	447037	6320000	008° 07.659'	57° 01.226'	23
Lod-B2	570829. 12	443991	6320004	008° 04.650'	57° 01.207'	24
Lod-B3	570829.15	446002	6317981	008° 06.662'	57° 00.131'	25
Lod-B4	570829. 13	441990	6318571	008° 02.692'	57° 00.420'	28
Lod-B5	570829. 14	439999	6317176	008° 00.745'	56° 59.653'	28
Lod-B6	560801. 32	442004	6316003	008° 02.741'	56° 59.036'	25
Lod-B7	560801. 33	443985	6315995	008° 04.697'	56° 59.046'	24

Fase Ib:

Core id.	DGU. Nr.	X (UTM 32N)	Y (UTM 32N)	Deg E	Deg N	Vanddybde m
Lod_A_IB_01	560801. 34	439694	6306331	008° 00.600'	56° 53.806'	24.6
Lod_A_IB_02	560801. 35	440361	6307199	008° 01.244'	56° 54.279'	25.2
Lod_A_IB_03	560704. 28	437393	6307207	007° 58.321'	56° 54.260'	28.5
Lod_A_IB_04	560704. 29	438449	6305384	007° 59.387'	56° 53.286'	26.2
Lod_A_IB_05	560704. 30	437523	6305020	007° 58.481'	56° 53.082'	26.2
Lod_A_IB_06	560704. 31	438964	6307672	007° 59.862'	56° 54.523'	27.4
Lod_A_IB_07	560801. 36	439316	6307062	008° 00.217'	56° 54.197'	25.6
Lod_A_IB_08	560704. 32	437298	6305893	007° 58.247'	56° 53.551'	28.4
Lod_A_IB_09	560704. 33	438998	6306313	007° 59.914'	56° 53.791'	26.1
Lod_A_IB_10	560704. 34	438245	6307369	007° 59.157'	56° 54.354'	26.0
Lod_A_IB_11	560704. 35	438729	6308231	007° 59.622'	56° 54.820'	26.6
Lod_A_IB_12	560801. 37	439667	6308721	008° 00.539'	56° 55.094'	26.5
Lod_A_IB_13	560801. 38	440256	6308410	008° 01.124'	56° 54.931'	26.6
Lod_A_IB_14	560704. 36	438440	6306756	007° 59.358'	56° 54.025'	27.5
Lod_A_IB_15	560801. 39	439637	6305515	008° 00.555'	56° 53.366'	26.6
Lod_B_IB_16	560801. 40	443416	6315686	008° 04.140'	56° 58.876'	24.6
Lod_B_IB_17	560801. 41	442492	6316274	008° 03.220'	56° 59.186'	26.1
Lod_B_IB_18	560801. 42	443428	6316534	008° 04.140'	56° 59.333'	24.4
Lod_B_IB_19	560801. 43	442918	6317040	008° 03.630'	56° 59.602'	24.5
Lod_B_IB_20	560801. 44	444491	6316770	008° 05.186'	56° 59.468'	24.3
Lod_B_IB_22	560801. 45	445409	6317320	008° 06.086'	56° 59.771'	25.4
Lod_B_IB_28	570829. 19	444244	6318560	008° 04.919'	57° 00.431'	25.4
Lod_B_IB_33	570829. 20	444963	6319417	008° 05.618'	57° 00.898'	24.6

Bilag D2

Borekernebeskrivelser:

- **Fase Ia**
- **Fase Ib**

Legend to logs

Lithology

	Mud
	Clay
	Silt
	Sand
	Heterolith with alternating layers of clay and sand
	Gravel
	Peat
	Till

Boundaries

	Gradational
	Sharp
	Erosive

Grain size scale (mm)

64	pebbles
4	granules
2	Very coarse sand
1	coarse sand
0.5	medium sand
0.250	fine sand
0.125	very fine sand
0.063	silt and clay

Structures

	Homogenous
	Laminated/layered
	Bioturbated

Holocene deposits

	FG - Lacustrine or fluvial gravel
	FS - Lacustrine or fluvial sand
	FI - Lacustrine or fluvial silt
	FL - Lacustrine or fluvial clay
	FP - Lacustrine gyttja
	FT - Peat
	HG - Marine gravel
	HS - Marine sand
	HI - Marine silt
	HL - Marine clay
	HP - Marine gyttja

Late-glacial deposits

	TS - Lacustrine or fluvial gravel
	TS - Lacustrine or fluvial sand
	TI - Lacustrine or fluvial silt
	TL - Lacustrine or fluvial clay
	YG - Marine gravel
	YS - Marine sand
	YL - Marine clay
	YP - Marine gyttja

Glacial deposits

	DG - Fluvial gravel
	DS - Fluvial sand
	DI - Fluvial silt
	DL - Fluvial clay
	MG - Gravely till
	MS - Sandy till
	ML - Clayey till

Interglacial deposits

	IT - Peat
	QG - Marine gravel
	QS - Marine sand
	QL - Marine clay

Core ID: Lod-A1		Coordinates (m): E: 438005.80 N: 6304005.55			Water depth (m): 24		Coordinate system: UTM 32 Reference datum: WGS84														
DGU no: 560704.23		Longitude: 7°58.942'E Latitude: 56°53.617'N																			
Core type: Vibrocore		Core length (m): 1.53																			
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters	
II								HS		200203	0.23	3.36	38.36	53.17	1.63	3.48	0.5	16	+		
I	25 - 1						0-77 cm: medium and fine sand with some pebbles olive grey 5Y 4/2, shell fragments	TG		200204	2.01	1.83	13.33	24.06	7.24	53.55	0.6	9	+	+	
	26 - 2						77-133 cm: sand and gravel olive grey 5Y 4/2	TS													
							133-153 cm: coarse sand and granules olive grey 5Y 4/2														
Geological Survey of Denmark and Greenland		Client:: Kystdirektoratet							Coring: M/S Karoline				Date: 10 July 2020								
									Description: Ole Bennike				Date: 15 July 2020								
									QC: Henrik Jönsson Granat				Date: 15 July 2020								

Core ID: Lod-A1a	Coordinates (m): E: 438005.80 N: 6306005.55	Water depth (m):24	Coordinate system: UTM 32 Reference datum: WGS84										
DGU no: 560704.23	Longitude: 11°45.7'E Latitude: 56°37.28'N												
Core type: Vibrocore	Core length (m): 2.68												
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Mud	Sand	Gravel	clay	silt	vf	m	vc	granules	pebbles	Description
		Lithology											
I	—	—											
II	25.1	1											0-47 cm: sand and gravel, olive grey 5Y 5/2 Arctica, Ensis, Spisula
III	25.2	2											47-250 cm: medium and fine sand, olive grey 5Y 5/2
	26.3	3											250-255 cm: gravel, olive grey 5Y 5/2 255-268 cm: medium sand, olive grey 5Y 5/2
			Age/environment										Grain size
				Samples									Mean (mm)
			HG		200200		1.37	0.47	7.57	21.45	8.65	61.86	0.8
			TS		200201		0.19	3.05	53.19	43.40	0.36	0.00	0.3
			TG		200202		0.29	1.49	11.55	86.43	0.52	0.02	0.4
			TS										Loss on ignition (%)
													11
													Water (%)
													CaCO ₃
													Other parameters

Geological Survey of Denmark and Greenland  Client: Kystdirektoratet Coring: M/S Karoline Date: 10 July 2020

Description: Ole Bennike Date: 15 July 2020

QC: Henrik Jönsson Granat Date: 15 July 2020

Core ID: Lod-A2		Coordinates (m): E: 439997.58 N: 6305992.20			Water depth (m): 28.5		Coordinate system: UTM 32 Reference datum: WGS84																				
DGU no: 560801.29		Longitude: 8°00.903'E Latitude: 56°53.626'N																									
Core type: Vibrocore		Core length (m): 1.35																									
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud	Sand	Gravel	clay	silt	vf	m	vc	granules	pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
I	29.5	1												⌚ 0-60 cm: medium sand, olive grey 5Y 4/2, shell fragments 60-135 cm: fine sand, olive grey 5Y 4/2	HS	■	200205	0.30	1.07	13.02	78.52	5.06	2.33	0.4	14	+	+
	30.5	2													TS	■	200206	0.15	93.14	3.29	0.02	0.00	2.23	0.4	19		
Geological Survey of Denmark and Greenland		Client: Kystdirektoratet													Coring: M/S Karoline			Date: 10 July 2020									
															Description: Ole Bennike			Date: 15 July 2020									
															QC: Henrik Jönsson Granat			Date: 15 July 2020									



Kystdirektoratet

Core ID: Lod-A3		Coordinates (m): E: 435998.07 N: 6305991.83			Water depth (m): 29.5		Coordinate system: UTM 32 Reference datum: WGS84																					
DGU no: 560704.24		Longitude: 7°56.965'E Latitude: 56°53.593'N																										
Core type: Vibrocore		Core length (m): 4.60																										
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters								
V								HG	■	200207	0.73	0.61	7.18	49.20	22.64	20.37	0.5	15	+									
							0-40 cm: sand and gravel, olive grey 5Y 5/2, Arctica	HS											+									
							40-75 cm: medium sand, grey 5Y 5/1, shell fragments	HG											+									
							75-96 cm: sand and gravel, very dark grey 5Y 3/1	TS	■	200208	0.30	1.70	7.49	82.87	6.46	1.48	0.4	12		+								
IV	30.5	1					96-187 cm: medium sand with some granules, grey 5Y 6/1	TG	■	200209	2.16	1.46	4.45	21.75	19.40	52.94	1.0	13		+								
							187-310 cm: sand and gravel, grey 5Y 5/1	TS	■	200210	1.73	0.98	5.09	28.42	17.26	48.25	0.6	9		+								
III	31.5	2					310-330 cm: medium and coarse sand with some granules, grey 5Y 5/1	TG	■	200211	1.28	1.31	5.72	35.97	15.45	41.55	0.9	12		+								
II	32.5	3					330-460 cm: sand and gravel, grey 5Y 6/1	TG																				
I	33.5	4																										
	34.5	5																										

Core ID: Lod-A4		Coordinates (m): E: 437995.65 N: 6308003.71		Water depth (m): 28		Coordinate system: UTM 32 Reference datum: WGS84														
DGU no: 560704.25		Longitude: 7°58.903'E Latitude: 56°54.694'N																		
Core type: Vibrocore		Core length (m): 4.42																		
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
V								HG		200163	1.26	0.86	5.02	44.79	16.98	32.34	0.7	14	+	
IV	29 - 1						0-65 cm: sand and gravel, grey 5Y 5/1, Arctica, Spisula	TS		200164	0.53	1.60	16.95	45.75	16.90	18.80	0.7	13	+	
III	30 - 2						65-186 cm: medium, fine and coarse sand with some granules, poorly sorted, grey 5Y 5/1	TS		200165	0.26	1.69	16.57	74.02	6.53	1.18	0.6	16	+	
II	31 - 3						186-260 cm: medium sand with some coarse sand and granules, grey 5Y 5/1	TG		200166	0.31	1.41	16.52	69.83	10.63	1.62	0.3	13	+	
I	32 - 4						260-293 cm: gravel, grey 5Y 5/1	TS		200167	0.26	0.90	19.80	76.18	2.93	0.19	0.2	14	+	
	33 - 5						10 cm stone	TL												
							293-412 cm: medium sand, grey 5Y 6/1	TG												
							412-418 cm: clay, very dark grey 5Y 3/1													
							418-442 cm: gravel, grey 5Y 5/1													
Geological Survey of Denmark and Greenland		Client:: Kystdirektoratet							Coring: M/S Karoline				Date: 10 July 2020							
									Description: Ole Bennike				Date: 15 July 2020							
									QC: Henrik Jönsson Granat				Date: 15 July 2020							

Core ID: Lod-A5		Coordinates (m): E: 439996.06 N: 6308002.70					Water depth (m): 28		Coordinate system: UTM 32 Reference datum: WGS84																		
DGU no: 560801.30		Longitude: 8°00.873'E Latitude: 56°54.709'N																									
Core type: Vibrocore		Core length (m): 4.80																									
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Mud	Sand	Gravel	clay	silt	vf	m	vc	granules	pebbles	Description		Age/environment	Samples	Laboratory ID	Grain size				Loss on ignition (%)		Water (%)	CaCO ₃	Other parameters	
V													G 0-40 cm: medium sand with some granules and a few pebbles, olive grey 5Y 5/2, Mactra		HS		200168	0.35	0.97	13.92	70.67	9.61	4.84	0.5	16	+	
IV	29 - 1												40-75 cm: medium well-sorted sand, grey 5Y 5/1		TS?		200169	0.29	0.56	12.58	86.46	0.40	0.00	0.5	17	+	
III	30 - 2												75-180 cm: medium well-sorted sand with layers of heavy minerals grey 5Y 5/1		TS?		200170	0.30	0.63	0.63	6.41	91.50	1.46	0.4	16	+	
II	31 - 3												180-480 cm: medium well-sorted sand grey 5Y 5/1		TS?		200171	0.30	0.87	6.05	88.90	4.18	0.00	0.4	15	+	
I	32 - 4														TS?		200172	0.30	1.39	7.03	85.63	5.93	0.02	0.4	18	+	
	33 - 5																										
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet					Coring: M/S Karoline					Date: 10 July 2020													
									Description: Ole Bennike					Date: 14 July 2020													
									QC: Henrik Jönsson Granat					Date: 14 July 2020													



Core ID: Lod-A6		Coordinates (m): E: 436000.32 N: 6309999.47			Water depth (m): 31		Coordinate system: UTM 32 Reference datum: WGS84																						
DGU no: 560704.26		Longitude: 7°56.907'E Latitude: 56°55.753'N																											
Core type: Vibrocore		Core length (m): 1.50																											
Core section		Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud	Sand	Gravel	clay	silt	vf	m	vc	granules	pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters	
I	-															HG		200173	0.88	2.25	4.64	25.05	12.85	55.21	1.1	11	+		
II	32 - 1														0-35 cm: sand and gravel, grey 5Y 6/1, Ensis 35-55 cm: silt, grey 5Y 6/1 55-133 cm: fine sand, grey 5Y 6/1 133-150 cm: gravel, grey 5Y 6/1	TI													
															35-55 cm: silt, grey 5Y 6/1 55-133 cm: fine sand, grey 5Y 6/1 133-150 cm: gravel, grey 5Y 6/1	TS		200174	0.09	11.79	88.03	0.15	0.02	0.01	1.1	19	+	+	
															133-150 cm: gravel, grey 5Y 6/1	TG													
	33 - 2																												
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet	Coring: M/S Karoline										Date: 10 July 2020														
					Description: Ole Bennike										Date: 15 July 2020														
					QC: Henrik Jönsson Granat										Date: 15 July 2020														



Client: Kystdirektoratet

Core ID: Lod-A7		Coordinates (m): E: 438004.06 N: 6311221.17		Water depth (m): 29		Coordinate system: UTM 32 Reference datum: WGS84														
DGU no: 560704.27		Longitude: 7°58.864'E Latitude: 56°56.428'N																		
Core type: Vibrocore		Core length (m): 2.77																		
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
III								HG		200175	2.27	2.25	4.99	25.69	12.06	55.01	0.8	7	+	
							0-60 cm: sand and gravel, dark grey 5Y 4/1, Mactra	TI												
							60-71 cm: silt, grey 5Y 5/1	TG												
							71-99 cm: sand and gravel, grey 5Y 5/1	TS		200176	0.31	3.45	31.73	38.44	20.36	6.02	0.8	13	+	
II	30 - 1						99-175 cm: fine, medium and coarse sand poorly sorted with granules, grey 5Y 5/1	TI												
							175-183 cm: silt, grey 5Y 5/1	TS		200177	0.14	7.58	75.99	15.65	0.60	0.18	0.7	14	+	
							183-247 cm: fine medium sand, grey 5Y 5/1	TG												+
I	31 - 2						247-277 cm: sand and gravel, grey 5Y 5/1													
	32 - 3																			
Geological Survey of Denmark and Greenland		Client:: Kystdirektoratet							Coring: M/S Karoline				Date: 10 July 2020							
									Description: Ole Bennike				Date: 15 July 2020							
									QC: Henrik Jönsson Granat				Date: 15 July 2020							

Core ID: Lod-B1		Coordinates (m): E: 447036.56 N: 6319999.58				Water depth (m): 23		Coordinate system: UTM 32 Reference datum: WGS84																					
DGU no: 570829.13		Longitude: 8°07.659'E Latitude: 57°01.226'N																											
Core type: Vibrocore		Core length (m): 5.65																											
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Mud	Sand	Gravel	Granules	Pebbles	Description				Age/environment	Samples	Laboratory ID	Grain size				Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters							
		Lithology	clay	silt	vf	f	m	c	vc	granules	pebbles				Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)									
VI	24 - 1	G										HS	■	200212	0.24	1.15	29.64	66.61	2.43	0.17	0.3	16	+						
V	25 - 2	G											■	200213	0.23	0.70	44.30	53.93	1.03	0.04	0.3	15	+						
IV	26 - 3	G											■	200214	0.24	0.63	31.73	64.35	3.28	0.01	0.4	14	+						
III	27 - 4	G											■	200215	0.30	0.73	28.79	56.07	10.77	3.64	0.4	13	+						
II	28 - 5	G											■	200216	0.29	0.80	24.66	63.64	10.16	0.75	0.3	22	+						
I		G											■	200217	0.24	1.21	33.69	2.639	0.71	0.00	0.2	16	+						
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet	Coring: M/S Karoline								Date: 10 July 2020																
					Description: Ole Bennike								Date: 14 July 2020																
					QC: Henrik Jönsson Granat								Date: 14 July 2020																



Kystdirektoratet

Core ID: Lod-B2		Coordinates (m): E: 443909.87 N: 6320003.89				Water depth (m): 24		Coordinate system: UTM 32 Reference datum: WGS84																					
DGU no: 570829.15		Longitude: 8°04.650'E Latitude: 57°01.207'N																											
Core type: Vibrocore		Core length (m): 5.95																											
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Mud	Sand	Gravel	clay	silt	vf	m	vc	granules	pebbles	Description				Age/environment	Samples	Laboratory ID	Grain size									
																Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters				
VI	25 - 1	1											0-110 cm: medium and fine sand light olive grey 5Y 6/2, Ensis		HS	■	200178	0.26	1.17	19.77	70.24	8.63	0.18	0.4	16	+			
V	26 - 2	2											110-513 cm: medium sand dark grey 5Y 4/1 and very dark grey 5Y 3/1, Mactra, Spisula		HS	■	200179	0.25	0.96	22.03	71.00	5.60	0.41	0.4	17				
IV	27 - 3	3													HS	■	200180	0.26	1.03	18.88	72.49	7.41	0.20	0.4	17	+			
III	28 - 4	4													HS	■	200181	0.23	0.93	44.49	53.98	0.60	0.00	0.4	17				
II	29 - 5	5													HS	■	200182	0.20	1.84	48.71	47.10	2.33	0.02	0.5	16				
I													513-595 cm: very fine sand sand, silty grey 5Y 6/1, Macoma		HS	■	200183	0.29	1.23	25.20	62.63	10.39	0.55	0.4	17	+			
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet				Coring: M/S Karoline				Date: 10 July 2020																	
								Description: Ole Bennike				Date: 14 July 2020																	
								QC: Henrik Jönsson Granat				Date: 14 July 2020																	



Core ID: Lod-B3		Coordinates (m): E: 446001.61 N: 6317980.74				Water depth (m): 25		Coordinate system: UTM 32 Reference datum: WGS84																			
DGU no: 570829.14		Longitude: 8°06.662'E Latitude: 57°00.131'N																									
Core type: Vibrocore		Core length (m): 4.83																									
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Mud	Sand	Gravel	clay	silt	vf	m	vc	granules	pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters	
V	26 - 1												G	HS		200218	0.47	0.57	10.79	58.88	16.25	13.50	0.4	11	+		
IV	27 - 2												G	HS		200219	0.20	0.83	52.56	46.44	0.17	0.00	0.4	15			
III	28 - 3												G	HS		200220	0.23	1.11	40.19	56.97	1.65	0.08	0.4	15	+		
II	29 - 4												G	HS		200221	0.26	0.95	21.85	68.52	8.34	0.34	0.3	12	+		
I	30 - 5												G	HG		200222	0.30	1.28	27.08	56.10	14.10	1.245	0.3	14	+		
														HS		200223	0.15	2.07	89.57	6.32	1.00	1.04	0.6	24	+	+	+
														HG													
Geological Survey of Denmark and Greenland		Client: Kystdirektoratet	Coring: M/S Karoline								Date: 10 July 2020																
			Description: Ole Bennike								Date: 14 July 2020																
			QC: Henrik Jönsson Granat								Date: 14 July 2020																



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Core ID: Lod-B5		Coordinates (m): E: 439998.63 N: 6317176.05				Water depth (m): 28		Coordinate system: UTM 32 Reference datum: WGS84												
DGU no: 560801.31		Longitude: 8°00.745'E Latitude: 56°59.653'N																		
Core type: Vibrocore		Core length (m): 4.05																		
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
IV	29 - 1		G	0-75 cm: medium sand, coarse sand and gravel olive grey 5Y 6/2, Spisula				HG	■	200184	0.93	0.73	3.90	50.46	17.45	27.45	0.5	17	+	
III	29 - 1		G	75-215 cm: medium and coarse sand grey 5Y 5/1, Mactra, Spisula				HS	■	200185	0.45	0.42	7.36	67.26	14.86	10.11	0.4	11	+	
II	30 - 2		G	215-405 cm: medium sand grey 5Y 5/1, Spisula				HS	■	200186	0.35	1.00	8.98	79.14	10.11	0.77	0.3	14	+	
I	31 - 3		G					HS	■	200187	0.34	0.81	11.17	78.11	9.25	0.67	0.4	14	+	
	32 - 4																			
Geological Survey of Denmark and Greenland		Client: Kystdirektoratet									Coring: M/S Karoline				Date: 10 July 2020					
											Description: Ole Bennike				Date: 14 July 2020					
							QC: Henrik Jönsson Granat				Date: 14 July 2020									



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Core ID: Lod-B6		Coordinates (m): E: 442003.62 N: 6316003.02		Water depth (m): 25		Coordinate system: UTM 32 Reference datum: WGS84																					
DGU no: 560801.33		Longitude: 8°02.741'E Latitude: 56°59.036'N																									
Core type: Vibrocore		Core length (m): 5.63																									
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud	Sand	Gravel	clay	silt	vf	m	vc	granules	pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
VI	26 - 1													0-30 cm: medium and coarse sand with some granules and pebbles grey 5Y 5/1, Spisula 30-70 cm: sand and gravel grey 5Y 5/1, Spisula	HS	■	200188	0.71	0.69	6.99	49.59	20.05	22.68	0.5	9	+	
V	27 - 2														HS	■	200189	0.36	0.86	11.80	72.06	12.78	2.50	0.4	12	+	
IV	28 - 3													70-563 cm: medium and coarse sand in upper part, medium and fine sand in lower part grey 5Y 5/1, Spisula	HS	■	200190	0.30	1.00	16.97	69.99	10.84	1.20	0.3	13	+	
III	29 - 4														HS	■	200191	0.25	0.74	26.81	64.26	7.55	0.63	0.2	14	+	
II	30 - 5														HS	■	200192	0.23	1.05	37.08	58.41	3.43	0.04	0.5	17	+	
I															HS	■	200193	0.25	0.94	26.00	62.79	9.78	0.49	0.3	15	+	
Geological Survey of Denmark and Greenland		Client: Kystdirektoratet	Coring: M/S Karoline										Date: 10 July 2020														
			Description: Ole Bennike										Date: 14 January 2019														
			QC: Henrik Jönsson Granat										Date: 14 January 2019														

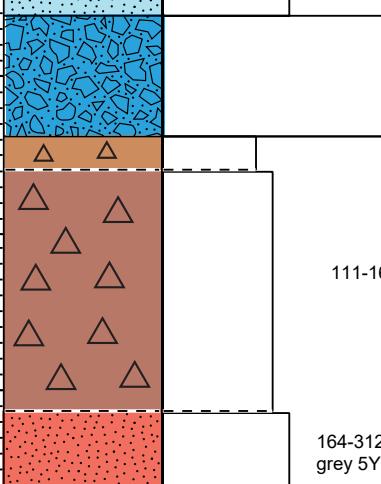
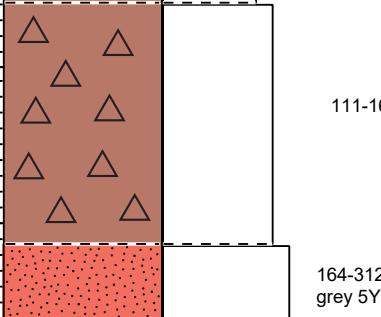
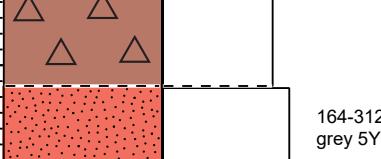


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Core ID: Lod-B7		Coordinates (m): E: 443984.57 N: 6315994.50				Water depth (m): 24		Coordinate system: UTM 32 Reference datum: WGS84												
DGU no: 560801.32		Longitude: 8°04.697'E Latitude: 56°59.046'N																		
Core type: Vibrocore		Core length (m): 5.23																		
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
VI								HS	■	200194	0.32	0.74	17.28	65.00	13.98	3.00	0.4	14	+	
V	25 - 1						0-122 cm: medium and coarse sand olive grey 5Y 4/2	HS	■	200195	0.40	0.85	15.69	59.08	13.73	10.65	0.4	13		
IV	26 - 2						122-369 cm: medium sand dark grey 5Y 4/1	HS	■	200196	0.19	1.38	56.32	40.78	1.41	0.12	0.2	17	+	
III	27 - 3							HL	■	200197	0.19	1.87	66.01	29.76	1.79	0.57	0.5	19		
II	28 - 4						369-371 cm: clay, grey 5Y 5/1	HS	■	200198	1,44	5.71	11.14	9.50	17.08	56.58	0.8	8	+	
I	29 - 5						371-426 cm: fine sand, grey 5Y 5/1	HG	■	200199	0,12	4.19	93.90	1.55	0.37	0.00	0.6	20	+	
							426-485 cm: gravel dark grey 5Y 4/1, Spisula	TS	■											
							485-523 cm: fine sand grey 5Y 5/1													
Geological Survey of Denmark and Greenland								Coring: M/S Karoline				Date: 10 July 2020								
Client: Kystdirektoratet								Description: Ole Bennike				Date: 14 July 2020								
								QC: Henrik Jönsson Granat				Date: 14 July 2020								



Core ID: Lod_A_IB_01	Coordinates (m): E: 439694 N: 6306331	Water depth (m): 24.6	Coordinate system: UTM 32 Reference datum: WGS84																			
DGU no: 560801.34	Longitude: 8°00.600'E Latitude: 56°53.806'N																					
Core type: Vibrocore	Core length (m): 1.83																					
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf	Granules f	Pebbles m	Description	Age/environment	Samples	Laboratory ID	Grain size									
=										Mean (mm)			Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters	
	25.6 - 1								0-5 cm: medium sand	HS	■	200700	1.67	0.24	2.63	16.24	10.80	70.08	0.5	3	+	
									5-123 cm: sand and gravel, Spisula grey 5Y 5/1	HG												
	26.6 - 2								123-183 cm: very fine silty sand, grey 5Y 5/1	TS	■	200701	0.11	16.43	83.10	0.44	0.02	0.00	0.9	16	+	
	3																					
	4																					
	5																					
Geological Survey of Denmark and Greenland				 G E U S		Client: Kystdirektoratet				Coring: M/S Skoven				Date: 13 November 2020								
										Description: Ole Bennike				Date: 24 November 2020								
										QC: Henrik Jönsson Granat				Date: 24 November 2020								

Core ID: Lod_A_IB_02	Coordinates (m): E: 440361 N: 6307199	Water depth (m): 25.2	Coordinate system: UTM 32 Reference datum: WGS84																	
DGU no: 560801.35	Longitude: 8°01.244'E Latitude: 56°54.279'N																			
Core type: Vibrocore	Core length (m): 3.12																			
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
III																				
II	26.2	1		⑥ 0-12 cm: medium sand, light olive grey 12-89 cm: sand and gravel light olive grey 5Y 5/2, Spisula 89-111 cm: clayey till, soft, grey 5Y 5/1				HS		200702	1.36	0.45	2.69	28.32	8.11	60.43	0.5	9	+	
I	27.2	2		111-164 cm: sandy till, grey 5Y 5/1 164-312 cm: medium sand with scattered pebbles grey 5Y 6/1				HG										+		
	28.2	3						ML										+		
		4						MS												
		5						DS		200703	0.37	1.70	6.37	82.60	9.34	0.00	0.4	15		
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet				Coring: M/S Skoven				Date: 13 November 2020								
								Description: Ole Bennike				Date: 23 November 2020								
								QC: Henrik Jönsson Granat				Date: 23 November 2020								

Core ID: Lod_A_IB_03	Coordinates (m): E: 437393 N: 6307207	Water depth (m): 28.5	Coordinate system: UTM 32 Reference datum: WGS84																		
DGU no: 560704.28	Longitude: 7°58.321'E Latitude: 56°54.260'N																				
Core type: Vibrocore	Core length (m): 4.18																				
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters	
V																					
IV	29.5	1						0-20 cm: sand and gravel, Spisula	HG		200704	0.73	0.47	1.83	41.32	6.82	49.57	0.4	11	+	
III	30.5	2						20-75 cm: medium sand with scattered pebbles	TS												
II	31.5	3						75-165 cm: sand and gravel, grey 5Y 6/1	TG		200705	1.30	1.00	1.75	24.14	40.95	32.15	0.7	8	+	
I	32.5	4						165-275 cm: medium and coarse sand scattered pebbles, grey 5Y 6/1	TS		200706	0.42	1.95	4.11	74.04	14.21	5.69	0.4	15	+	
								275-390 cm: sand and gravel, grey 5Y 6/1	TG		200707	1.79	1.81	0.79	15.76	43.81	37.82	0.7	10	+	
								390-410 cm: medium sand, grey 5Y 5/1	TS		200708	0.35	1.75	6.15	84.10	5.63	2.37	0.2	15	+	
								410-418 cm: fine sand, grey 5Y 5/1													
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet				Coring: M/S Skoven				Date: 13 November 2020									
								Description: Ole Bennike				Date: 23 November 2020									
								QC: Henrik Jönsson Granat				Date: 23 November 2020									



Core ID: Lod_A_IB_04	Coordinates (m): E: 438449 N: 6305384	Water depth (m): 26.2	Coordinate system: UTM 32 Reference datum: WGS84																	
DGU no: 560704.29	Longitude: 7°59.387'E Latitude: 56°53.286'N																			
Core type: Vibrocore	Core length (m): 3.33																			
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
IV							0-18 cm: medium sand 18-32 cm: sand and gravel, Spisula	HS HG	■	200709	0.28	1.28	12.47	81.25	4.52	0.00	0.4	16	+	
III	27.2	1					18-277 cm: medium sand greyish-brown 2.5Y 5/2	TS	■	200710	0.27	1.08	14.65	82.08	1.99	0.20	0.4	17	+	
II	28.2	2						TG	■	200711	0.28	0.88	15.54	80.66	2.85	0.07	0.4	16		
I	29.2	3					277-333 cm: sand and gravel greyish.brown 2.5Y 5/2		■	200712	0.31	1.35	15.21	71.35	9.67	2.42	0.4	15	+	
		4																		
		5																		
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet				Coring: M/S Skoven				Date: 13 November 2020								
								Description: Ole Bennike				Date: 23 November 2020								
								QC: Henrik Jönsson Granat				Date: 23 November 2020								



Core ID: Lod_A_IB_05	Coordinates (m): E: 437523 N: 6305020	Water depth (m): 26.2	Coordinate system: UTM 32 Reference datum: WGS84																	
DGU no: 560704.30	Longitude: 7°58.481'E Latitude: 56°53.082'N																			
Core type: Vibrocore	Core length (m): 3.38																			
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Grain size									
IV								HS		200713	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
III	27.2	1					0-55 cm: medium sand	HG		200714	0.35	1.49	5.96	80.78	11.53	0.26	0.4	14	+	
II	28.2	2					55-60 cm: sand and gravel, Spisula	TS		200715	0.33	1.57	3.94	92.04	2.05	0.40	0.4	17	+	
I	29.2	3					60-338 cm: medium sand with a few scattered pebbles grey 5Y 6/1			200716	0.30	1.00	6.02	88.31	2.37	2.31	0.3	19	+	
		4																		
		5																		
Geological Survey of Denmark and Greenland			Client: Kystdirektoratet	Coring: M/S Skoven					Date: 13 November 2020											
				Description: Ole Bennike					Date: 24 November 2020											
				QC: Henrik Jönsson Granat					Date: 24 November 2020											



Kystdirektoratet

Core ID: Lod_A_IB_07		Coordinates (m): E: 439316 N: 6307062		Water depth (m): 25.6		Coordinate system: UTM 32 Reference datum: WGS84																									
DGU no: 560801.36		Longitude: 8°00.217'E Latitude: 56°54.197'N																													
Core type: Vibrocore		Core length (m): 4.60																													
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Mud	Sand	Gravel	clay	silt	vf	m	c	vc	granules	pebbles	Description	Age/environment	Samples	Laboratory ID	Grain size													
V																		Mean (mm)	Slit and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters				
IV	26.6	1													0-12 cm: fine sand, grey 5Y 5/1 12-29 cm: medium and coarse sand 29-59 cm: very fine sand 59-68 cm: sand and gravel, Ensis	HS	■	200720	0.38	2.78	8.29	71.48	13.29	4.17	0.4	21	+				
III	27.6	2													68-460 cm upper part: very fine silty sand, grey 5Y 5/1 lower part: medium and coarse sand, grey 5Y 6/1	HG	■	200721	0.10	23.67	75.42	0.89	0.02	0.00	1.2	20			+		
II	28.6	3													layer of coal fragments and twigs	TS	■	200722	0.33	1.90	7.02	86.89	3.14	1.05	0.5	15				+	
I	29.6	4															■	200723	0.35	1.30	4.54	92.41	1.74	0.00	0.4	15				+	
		5															■	200724	0.43	1.63	4.10	70.40	21.19	2.67	0.5	13					

Core ID: Lod_A_IB_08	Coordinates (m): E: 437298 N: 6305893	Water depth (m): 28.4	Coordinate system: UTM 32 Reference datum: WGS84																		
DGU no: 560704.32	Longitude: 7°58.247'E Latitude: 56°53.551'N																				
Core type: Vibrocore	Core length (m): 1.16																				
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc c granules pebbles	Description	Age/environment	Samples	Laboratory ID	Grain size										
II											Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters	
I	29.4	1					0-17 cm: medium sand 17-49 cm: sand and gravel, grey 5Y 5/1 Spisula 49-116 cm: medium and fine sand, grey 5Y 6/1 a few scattered pebbles	HS HG TS	■	200725 200726	0.32 0.23	1.10 3.95	8.69 34.37	84.16 56.38	5.35 4.04	0.71 1.27	0.7 0.9	22 18	+	+	
		2																			
		3																			
		4																			
		5																			
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet				Coring: M/S Skoven				Date: 13 November 2020									
								Description: Ole Bennike				Date: 23 November 2020									
								QC: Henrik Jönsson Granat				Date: 23 November 2020									



Kystdirektoratet

Core ID: Lod_A_IB_10	Coordinates (m): E: 438245 N: 6307369	Water depth (m): 26.0	Coordinate system: UTM 32 Reference datum: WGS84																		
DGU no: 560704.34	Longitude: 7°59.157'E Latitude: 56°54.354'N																				
Core type: Vibrocore	Core length (m): 3.19																				
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules	Description	Age/environment	Samples	Laboratory ID	Grain size										
IV								Mean (mm)			Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters	
III	27.0	1								200729	0.41	2.96	7.03	67.18	22.21	0.62	0.5	14	+		
II	28.0	2								200730	0.35	2.26	9.67	73.68	14.15	0.24	0.4	15		+	
I	29.0	3								200731	0.36	2.63	8.38	72.61	15.57	0.81	0.5	16		+	
										200732	0.95	1.21	4.82	47.47	14.66	31.83	0.6	9			
 <p>Geological Survey of Denmark and Greenland Client: Kystdirektoratet</p>														Coring: M/S Skoven	Date: 13 November 2020						
														Description: Ole Bennike	Date: 23 November 2020						
														QC: Henrik Jönsson Granat	Date: 23 November 2020						

Core ID: Lod_A_IB_12	Coordinates (m): E: 439667 N: 6308721	Water depth (m): 26.5	Coordinate system: UTM 32 Reference datum: WGS84																			
DGU no: 560801.37	Longitude: 8°00.539'E Latitude: 56°55.094'N																					
Core type: Vibrocore	Core length (m): 3.41																					
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf	Granules f	Pebbles m	vc	Description	Age/environment	Samples	Laboratory ID	Grain size								
											Mean (mm)			Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
IV																						
III	27.5	1								G												
II	28.5	2								G												
I	29.5	3								G												
		4																				
		5																				
Geological Survey of Denmark and Greenland				 G E U S		Client: Kystdirektoratet				Coring: M/S Skoven				Date: 13 November 2020								
										Description: Ole Bennike				Date: 19 November 2020								
										QC: Henrik Jönsson Granat				Date: 19 November 2020								

Core ID: Lod_A_IB_13	Coordinates (m): E: 440256 N: 6308410	Water depth (m): 26.6	Coordinate system: UTM 32 Reference datum: WGS84																	
DGU no: 560801.38	Longitude: 8°01.124'E Latitude: 56°54.931'N																			
Core type: Vibrocore	Core length (m): 2.72																			
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
III	27.6	1					0-20 cm: fine sand 20-30 cm: sand and gravel	HG	■	200741	0.20	20.17	52.63	19.03	4.42	3.76	0.6	17	+	
II	27.6	1					30-210 cm: very fine silty sand grey 6Y 5/1	HS?	■	200742	0.13	25.47	68.69	5.63	0.21	0.00	1.0	19	+	
I	28.6	2					210-272 cm: medium and fine sand grey 6Y 5/1	HS?	■	200743	0.08	44.24	54.92	0.81	0.03	0.00	1.3	20	+	
		3								200744	0.25	3.91	32.17	52.83	6.99	4.11	0.6	16		
		4																		
		5																		
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet				Coring: M/S Skoven				Date: 13 November 2020								
								Description: Ole Bennike				Date: 19 November 2020								
								QC: Henrik Jönsson Granat				Date: 19 November 2020								



Core ID: Lod_A_IB_14	Coordinates (m): E: 438440 N: 6306756	Water depth (m): 27.5	Coordinate system: UTM 32 Reference datum: WGS84																		
DGU no: 560704.36	Longitude: 7°59.358'E Latitude: 56°54.025'N																				
Core type: Vibrocore	Core length (m): 3.15																				
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters	
IV																					
III	28.5	1					0-30 cm: medium sand	HS	■	200745	0.37	2.14	6.47	83.27	7.63	0.49	0.5	14	+		
							30-45 cm: sand and gravel, Spisula	HG													
							45-118 cm: medium and coarse sand light olive grey 5Y 6/2	TS	■	200746	0.40	1.78	3.67	83.16	11.23	0.17	0.3	14	+		
							118-124 cm: sand and gravel	TG													
							124-182 cm: medium sand, grey 5Y 6/1	TS	■	200747	0.34	0.75	2.33	96.33	0.59	0.00	0.4	16	+		
							182-315 cm: sand and gravel, grey 5Y 5/1	TG													
II	29.5	2																			
I	30.5	3																			
		4																			
		5																			
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet				Coring: M/S Skoven				Date: 13 November 2020									
								Description: Ole Bennike				Date: 24 November 2020									
								QC: Henrik Jönsson Granat				Date: 24 November 2020									



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Core ID: Lod_A_IB_15	Coordinates (m): E: 439637 N: 6305515	Water depth (m): 26.6	Coordinate system: UTM 32 Reference datum: WGS84																	
DGU no: 560801.39	Longitude: 8°00.555'E Latitude: 56°53.366'N																			
Core type: Vibrocore	Core length (m): 2.43																			
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
III								HS		200748	0.32	1.23	11.75	75.13	10.08	1.80	0.5	17	+	
II	27.6	1					0-26 cm: medium, fine and coarse sand 26-117 cm: sand and gravel dark grey 5Y 4/1, Spisula	HG		200749	2.30	0.82	1.59	18.79	8.13	70.67	0.5	5	+	
I	28.6	2					117-243 cm: medium and fine sand with rounded clasts of clay grey 5Y 6/1	TS		200750	0.25	4.10	28.65	62.00	5.14	0.10	0.5	14	+	
		3																		
		4																		
		5																		
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet				Coring: M/S Skoven				Date: 13 November 2020								
								Description: Ole Bennike				Date: 23 November 2020								
								QC: Henrik Jönsson Granat				Date: 23 November 2020								



Core ID: Lod_B_IB_17	Coordinates (m): E: 442492 N: 6316274	Water depth (m): 26.1	Coordinate system: UTM 32 Reference datum: WGS84																							
DGU no: 560801.41	Longitude: 8°03.220'E Latitude: 56°59.186'N																									
Core type: Vibrocore	Core length (m): 4.55																									
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Mud	Sand	Gravel	clay	silt	vf	m	vc	granules	pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
V	27.1 - 1												G	HG		200757	0.86	0.77	1.93	46.58	27.62	23.11	0.4	10	+	
IV	28.1 - 2												G	HS		200758	0.34	1.23	5.79	87.07	5.80	0.10	0.4	15	+	
III	29.1 - 3												G			200759	0.28	1.10	13.13	85.03	0.74	0.00	0.4	16	+	
II	30.1 - 4												G			200760	0.33	1.08	7.09	85.07	6.73	0.03	0.4	15	+	
I	30.1 - 5												G			200761	0.31	1.35	9.17	86.78	2.66	0.04	0.4	17	+	
																200762	0.34	1.27	8.24	80.33	10.13	0.04	0.3	17		
Geological Survey of Denmark and Greenland															Coring: M/S Skoven				Date: 13 November 2020							
Client: Kystdirektoratet															Description: Ole Bennike				Date: 20 November 2020							
															QC: Henrik Jönsson Granat				Date: 20 November 2020							



Kystdirektoratet

Core ID: Lod_B_IB_18	Coordinates (m): E: 443428 N: 6316534	Water depth (m): 24.4	Coordinate system: UTM 32 Reference datum: WGS84																		
DGU no: 560801.42	Longitude: 8°04.140'E Latitude: 56°59.333'N																				
Core type: Vibrocore	Core length (m): 4.25																				
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters	
V								HS		200763	0.37	0.79	4.53	81.85	11.68	1.16	0.4	15	+		
IV	25.4	1						HG		200764	0.33	1.18	6.07	86.63	6.01	0.11	0.4	16	+		
III	26.4	2						HS		200765	0.33	1.15	8.46	80.93	9.18	0.28	0.4	14	+		
II	27.4	3						HS		200766	0.29	1.69	11.01	86.21	1.06	0.03	0.4	17	+		
I	28.4	4								200767	0.32	1.72	10.04	83.73	4.20	0.30	0.3	15			
		5																			
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet				Coring: M/S Skoven				Date: 14 November 2020									
								Description: Ole Bennike				Date: 20 November 2020									
								QC: Henrik Jönsson Granat				Date: 20 November 2020									



Core ID: Lod_B_IB_19	Coordinates (m): E: 442918 N: 6317040	Water depth (m): 24.5	Coordinate system: UTM 32 Reference datum: WGS84																		
DGU no: 560801.43	Longitude: 8°03.630'E Latitude: 56°59.602'N																				
Core type: Vibrocore	Core length (m): 3.30																				
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Grain size										
											Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters	
IV							0-8 cm: medium and coarse sand 8-80 cm: sand and gravel olive-grey 5Y 5/2, Spisula, Ensis	HG	■	200768	1.11	0.45	1.79	42.98	23.59	31.19	1.0	9	+		
III	25.5	1					80-330 cm: medium and coarse sand some gravel grey 5Y 5/1, Spisula	HS	■	200769	0.48	1.23	2.36	67.05	24.93	4.44	0.9	14	+		
II	26.5	2							■	200770	0.38	1.07	5.23	77.54	11.30	4.87	1.2	13		+	
I	27.5	3							■	200771	0.33	0.63	7.29	85.45	6.54	0.09	0.9	15			
		4																			
		5																			
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet				Coring: M/S Skoven				Date: 14 November 2020									
								Description: Ole Bennike				Date: 20 November 2020									
								QC: Henrik Jönsson Granat				Date: 20 November 2020									



Kystdirektoratet

Core ID: Lod_B_IB_20	Coordinates (m): E: 444491 N: 6316770	Water depth (m): 24.3	Coordinate system: UTM 32 Reference datum: WGS84																				
DGU no: 560801.44	Longitude: 8°05.186'E Latitude: 56°59.468'N																						
Core type: Vibrocore	Core length (m): 5.44																						
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf	Granules f	Pebbles vc	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters	
VI	25.3	1							0-18 cm: medium and coarse sand greyish-brown 2.5Y 5/2, Spisula 18-32 cm: sand and pebbles greyish-brown 2.5Y 5/2, Spisula, Ensis	HG	■	200772	0.39	0.78	3.12	80.39	14.15	1.57	0.3	14	+		
V	26.3	2							32-236 cm: medium sand grey 5Y 6/1, Spisula	HS	■	200773	0.33	1.27	8.62	77.72	9.46	2.93	0.3	13	+		
IV	27.3	3							236-423 cm: medium and some fine sand grey 5Y 5/1, Spisula	HS	■	200774	0.33	0.90	8.76	78.10	11.00	1.24	0.3	14	+		
III	28.3	4							423-438 cm: sand and pebbles, grey 5Y 5/1 438-455 cm: fine and medium sand	HG	■	200775	0.30	1.63	11.84	82.35	3.99	0.19	0.3	14	+		
II	29.3	5							455-544 cm: sand and pebbles grey 5Y 5/1, Spisula	HG	■	200776	0.31	1.48	14.87	74.24	8.70	0.71	0.4	16	+		
I												200777	1.13	2.03	7.93	18.77	12.41	58.87	0.5	7	+		
Geological Survey of Denmark and Greenland					Client: Kystdirektoratet				Coring: M/S Skoven				Date: 14 November 2020										
									Description: Ole Bennike				Date: 20 November 2020										
									QC: Henrik Jönsson Granat				Date: 20 November 2020										

Core ID: Lod_B_IB_28	Coordinates (m): E: 444244 N: 6318560	Water depth (m): 25.4	Coordinate system: UTM 32 Reference datum: WGS84																	
DGU no: 570829.19	Longitude: 8°04.919'E Latitude: 57°00.431'N																			
Core type: Vibrocore	Core length (m): 3.10																			
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m c vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Grain size									
IV											Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
III	26.4 - 1						G			200779	0.43	0.43	3.11	73.28	19.66	3.53	1.0	2	+	
II	27.4 - 2						G	0-310 cm: medium sand light olive-grey 5Y 6/2 Spisula, Laevicardium		200780	0.40	0.56	4.32	75.54	17.05	2.53	0.9	2	+	
I	28.4 - 3						G			200781	0.30	0.29	10.31	86.69	2.52	0.19	1.2	4	+	
										200782	0.25	0.62	21.00	77.41	0.97	0.00	0.9	18		
Geological Survey of Denmark and Greenland				Client: Kystdirektoratet				Coring: M/S Skoven				Date: 14 November 2020								
								Description: Ole Bennike				Date: 20 November 2020								
								QC: Henrik Jönsson Granat				Date: 20 November 2020								



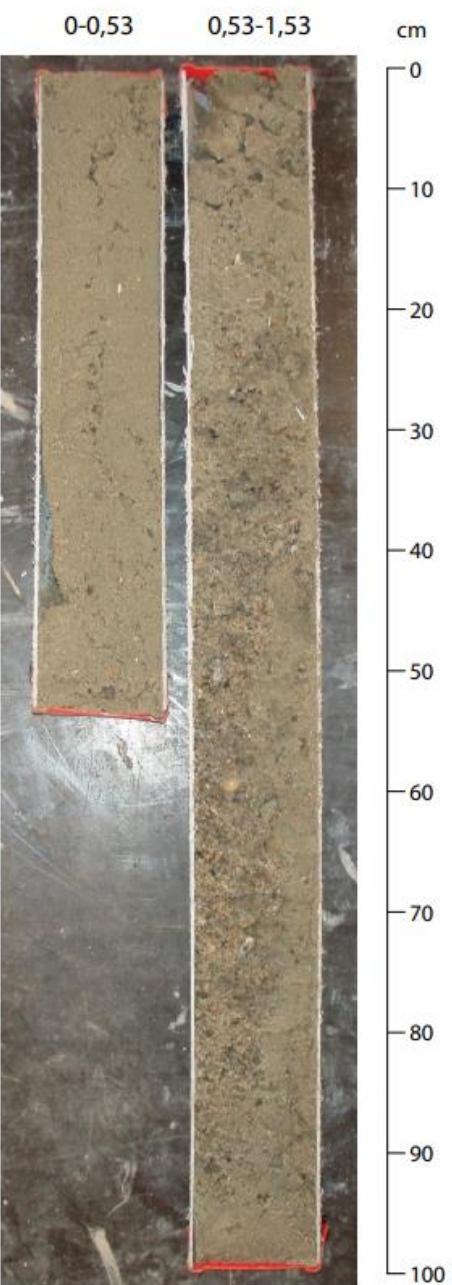
Kystdirektoratet

Core ID: Lod_B_IB_33	Coordinates (m): E: 444963 N: 6319417	Water depth (m): 24.6	Coordinate system: UTM 32 Reference datum: WGS84																	
DGU no: 570829.20	Longitude: 8°05.618'E Latitude: 57°00.898'N																			
Core type: Vibrocore	Core length (m): 4.53																			
Core section	Depth below mean sea level (m)	Depth below sea bed (m)	Lithology	Mud clay	Sand silt	Gravel vf f m c vc granules pebbles	Description	Age/environment	Samples	Laboratory ID	Mean (mm)	Silt and clay (%)	Fine sand (%)	Medium sand (%)	Coarse sand (%)	Gravel (%)	Loss on ignition (%)	Water (%)	CaCO ₃	Other parameters
V	25.6	1	G					HS	■	200783	0.35	0.94	6.02	82.45	10.00	0.60	0.2	14	+	
IV	26.6	2	G				0-453 cm: medium and coarse sand grey 5Y 5/1, Spisula	HS	■	200784	0.36	0.89	5.51	81.33	11.06	1.20	0.3	13	+	
III	27.6	3	G					HS	■	200785	0.38	1.04	4.62	78.16	13.44	2.75	0.4	15	+	
II	28.6	4	G					HS	■	200786	0.37	1.06	6.34	76.38	10.94	5.28	0.4	15	+	
I		5						HS	■	200787	0.34	0.85	7.72	79.52	9.87	2.03	0.3	15	+	
Geological Survey of Denmark and Greenland		Client: Kystdirektoratet		Coring: M/S Skoven					Date: 14 November 2020											
				Description: Ole Bennike					Date: 20 November 2020											
				QC: Henrik Jönsson Granat					Date: 20 November 2020											

Bilag D3

- Fotos af vibrationsboringer

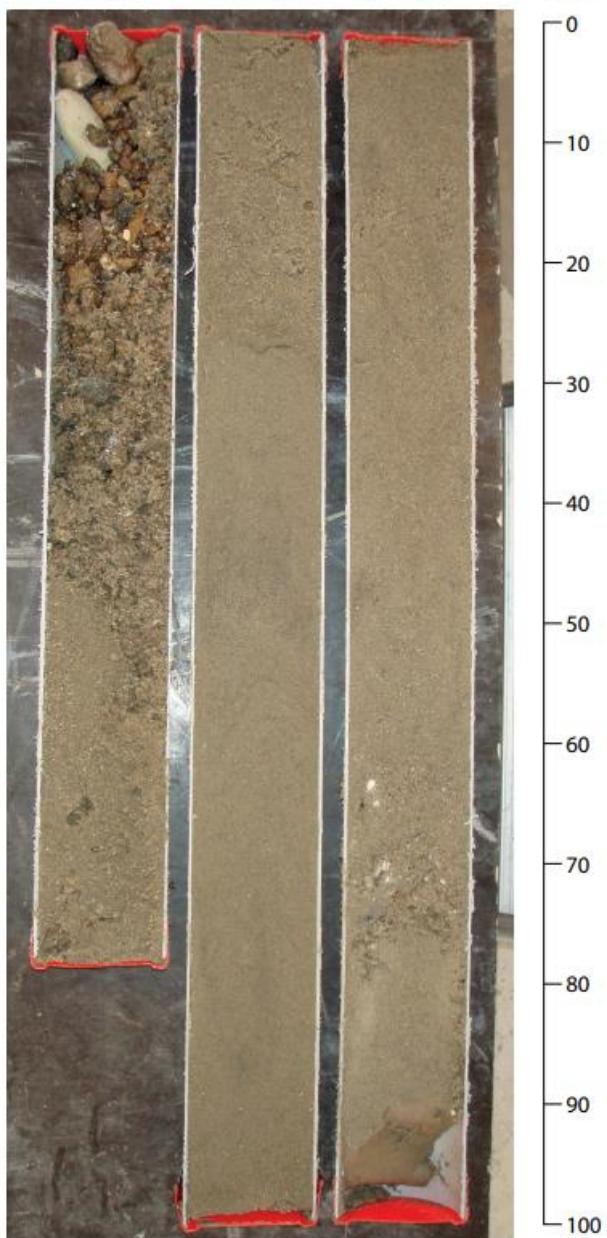
LodA1



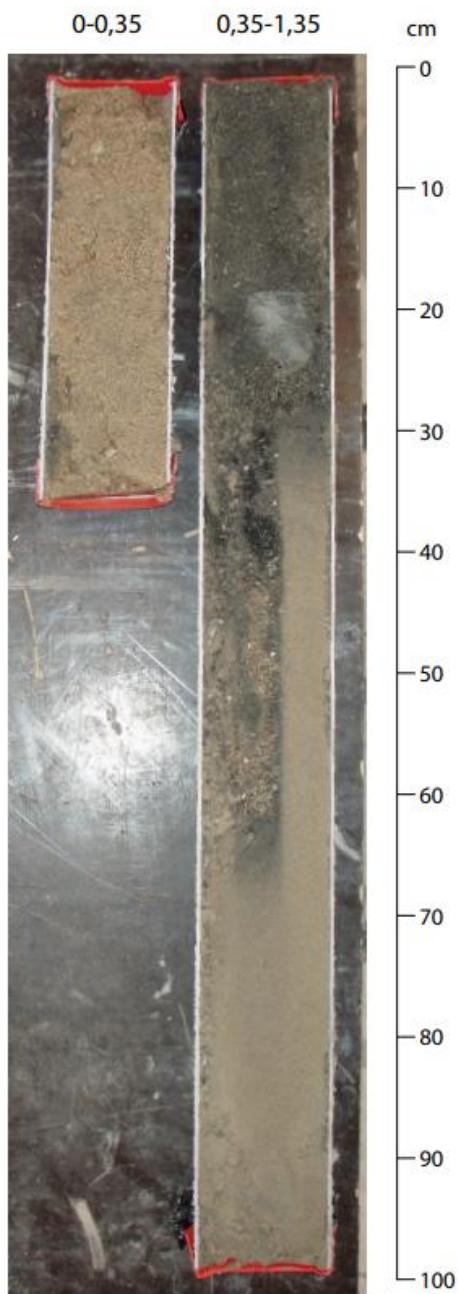
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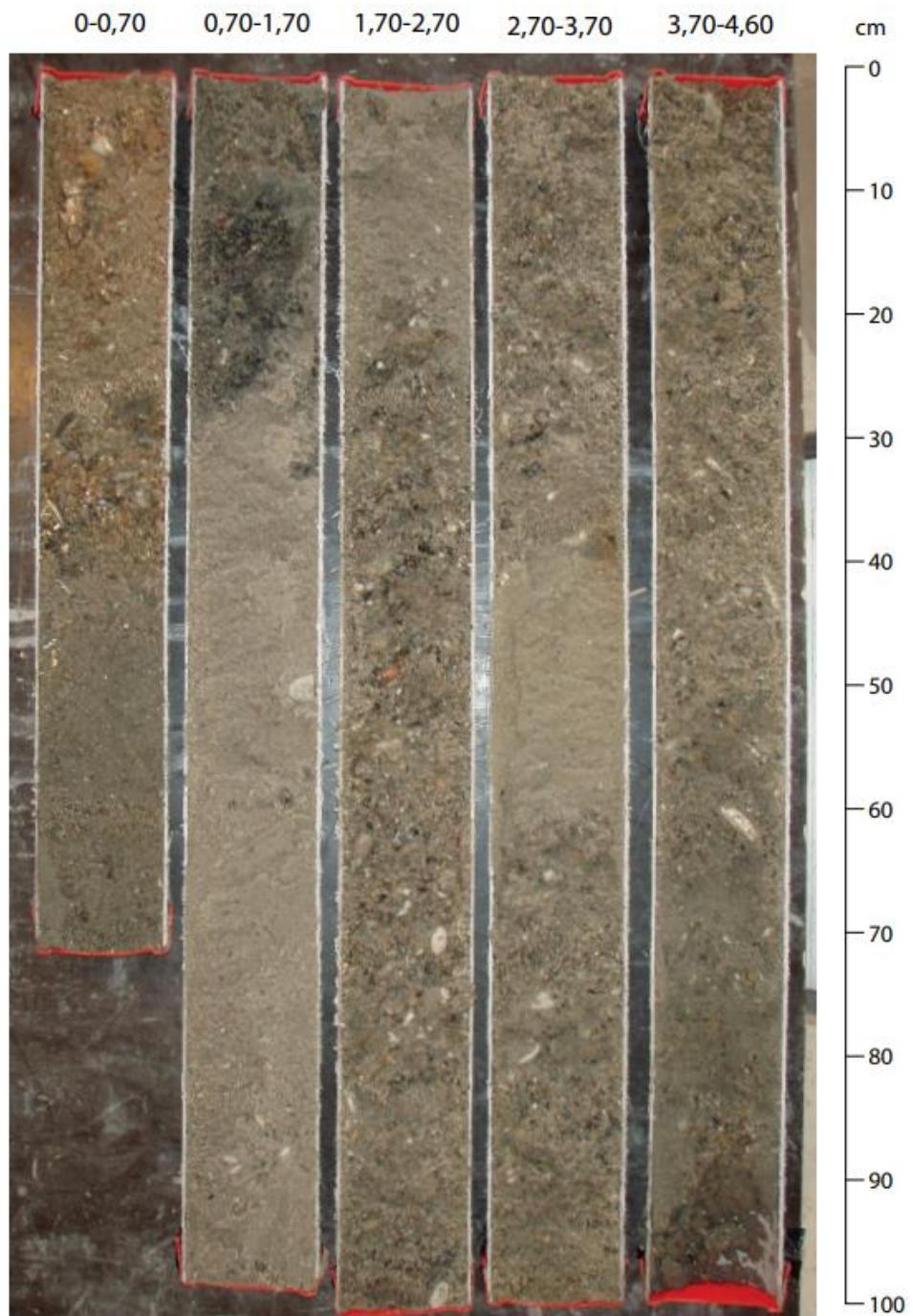
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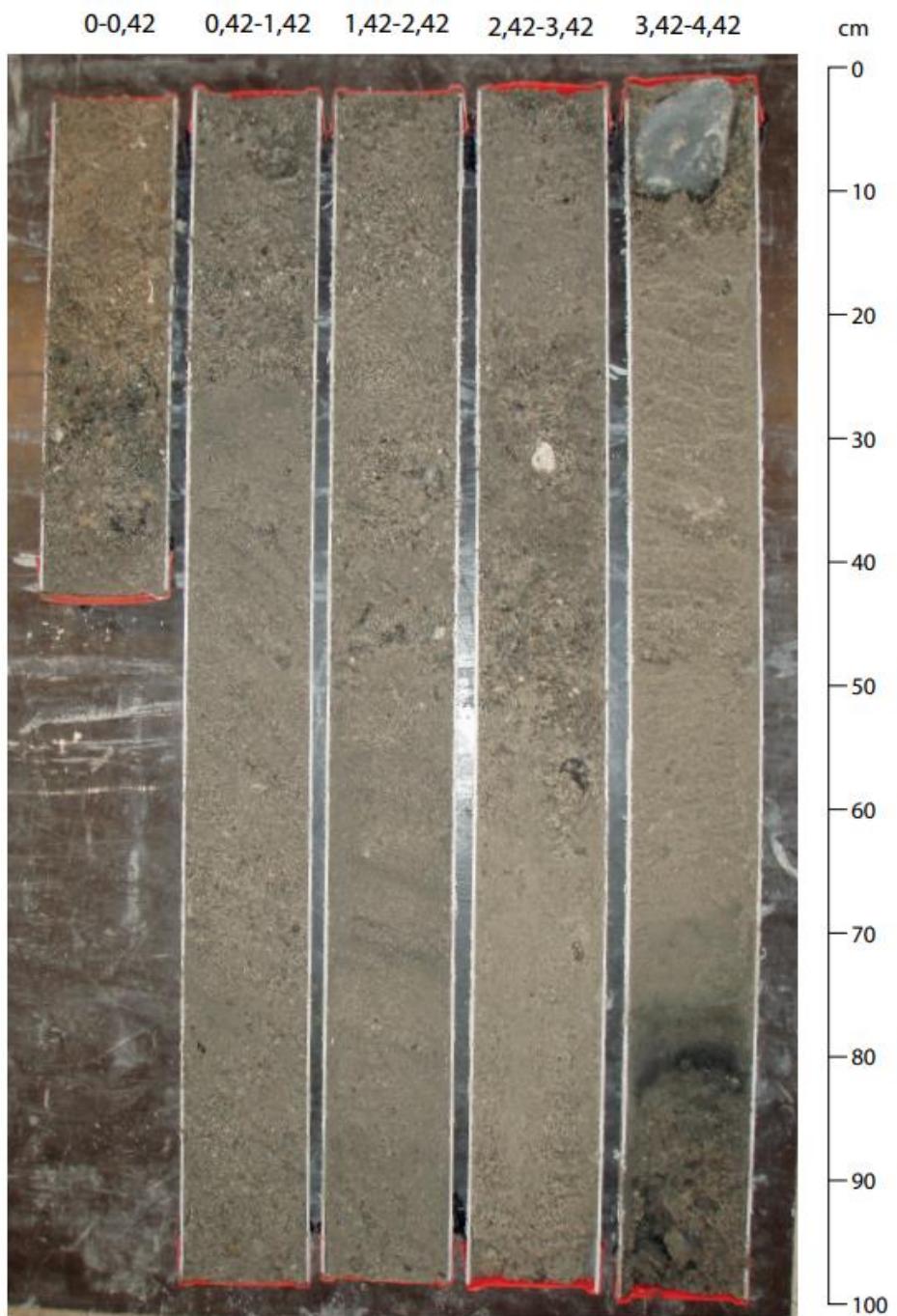
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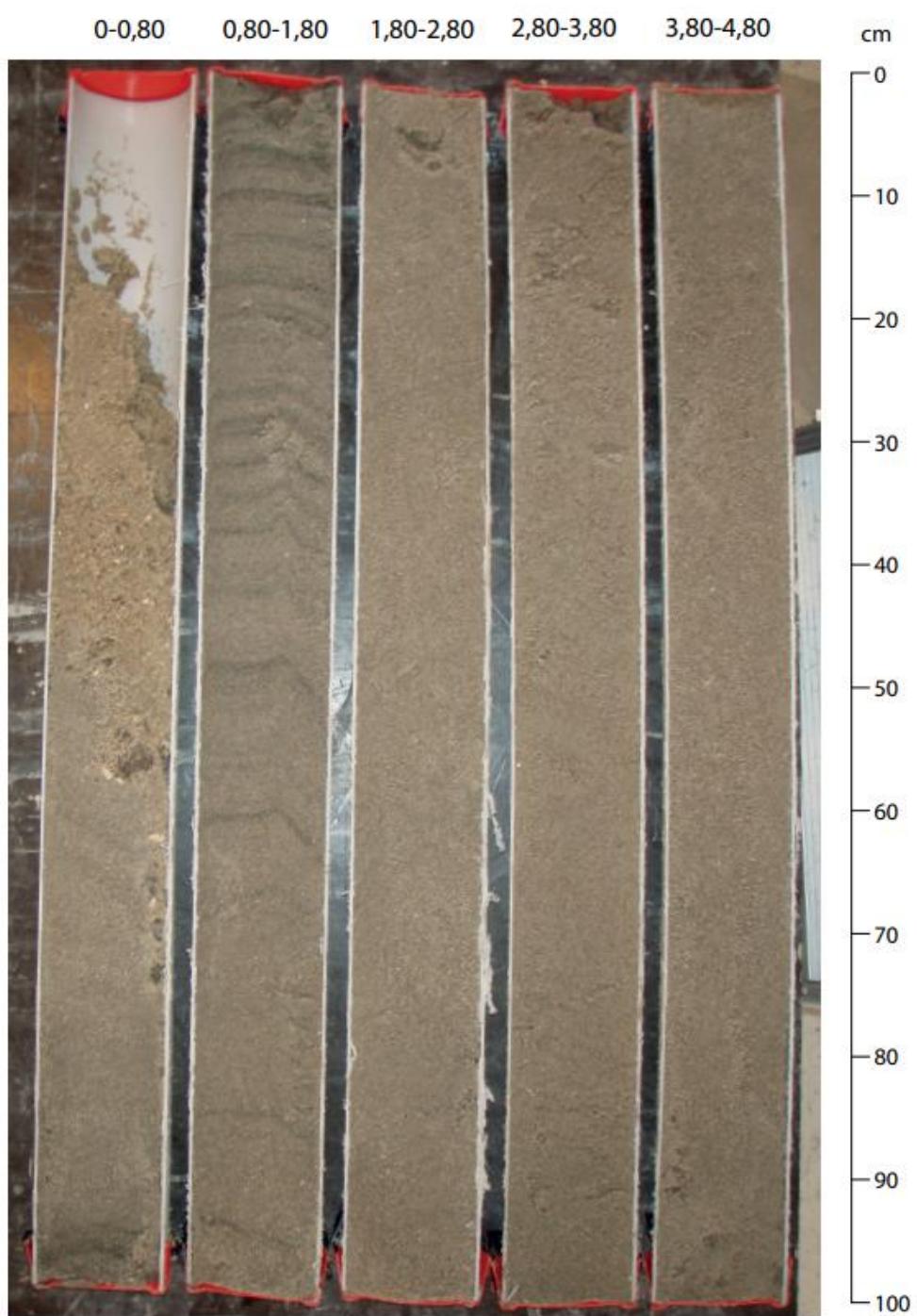
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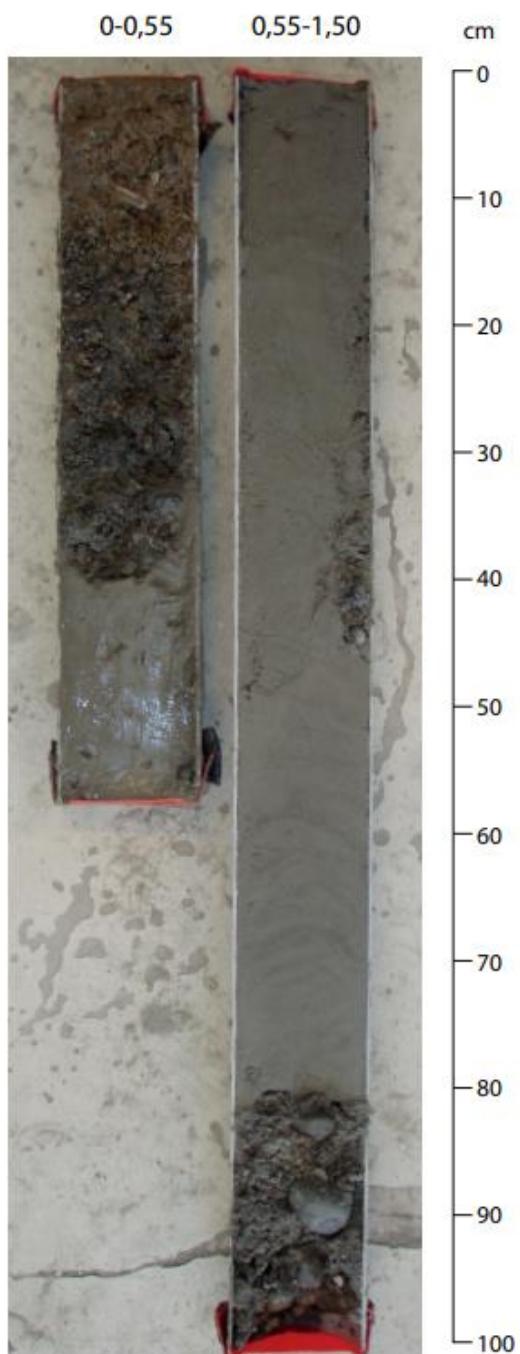
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LodA5



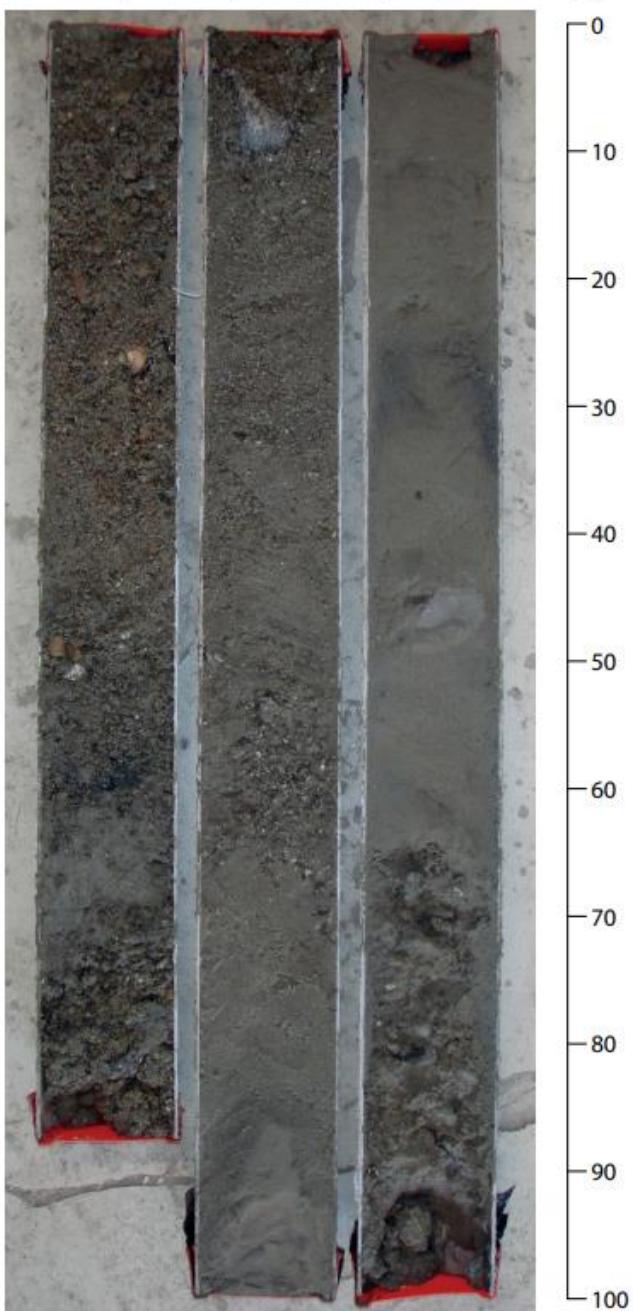
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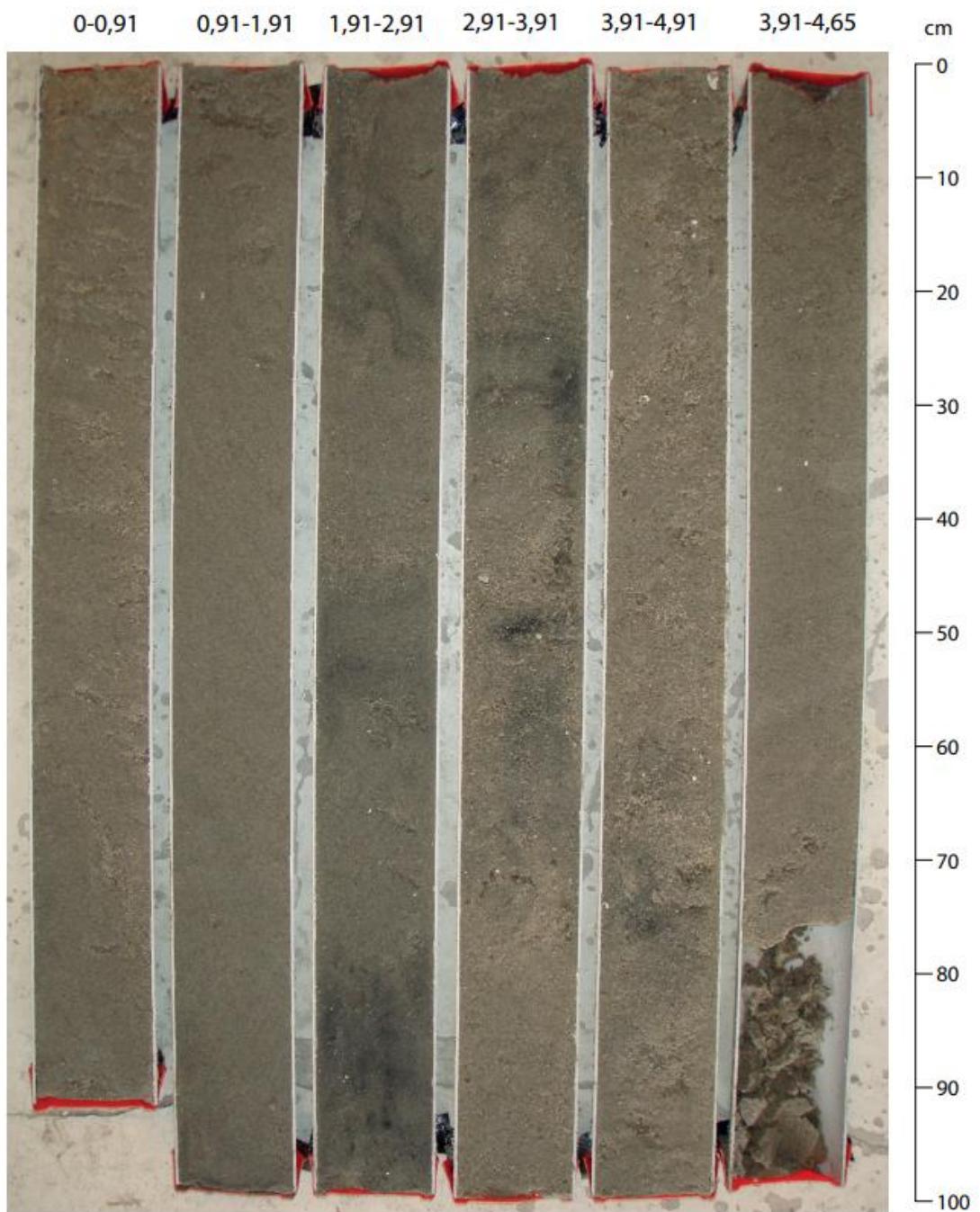
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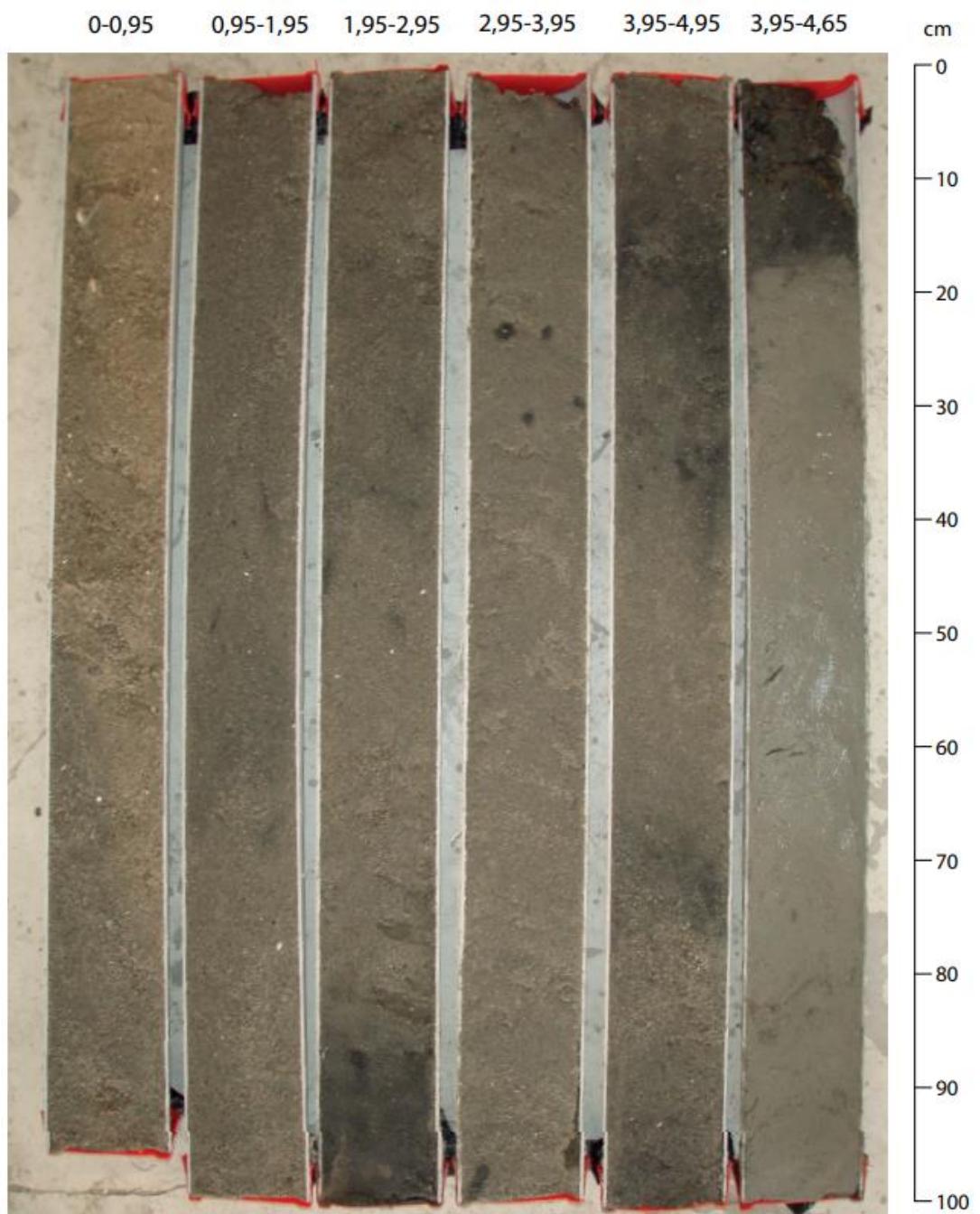
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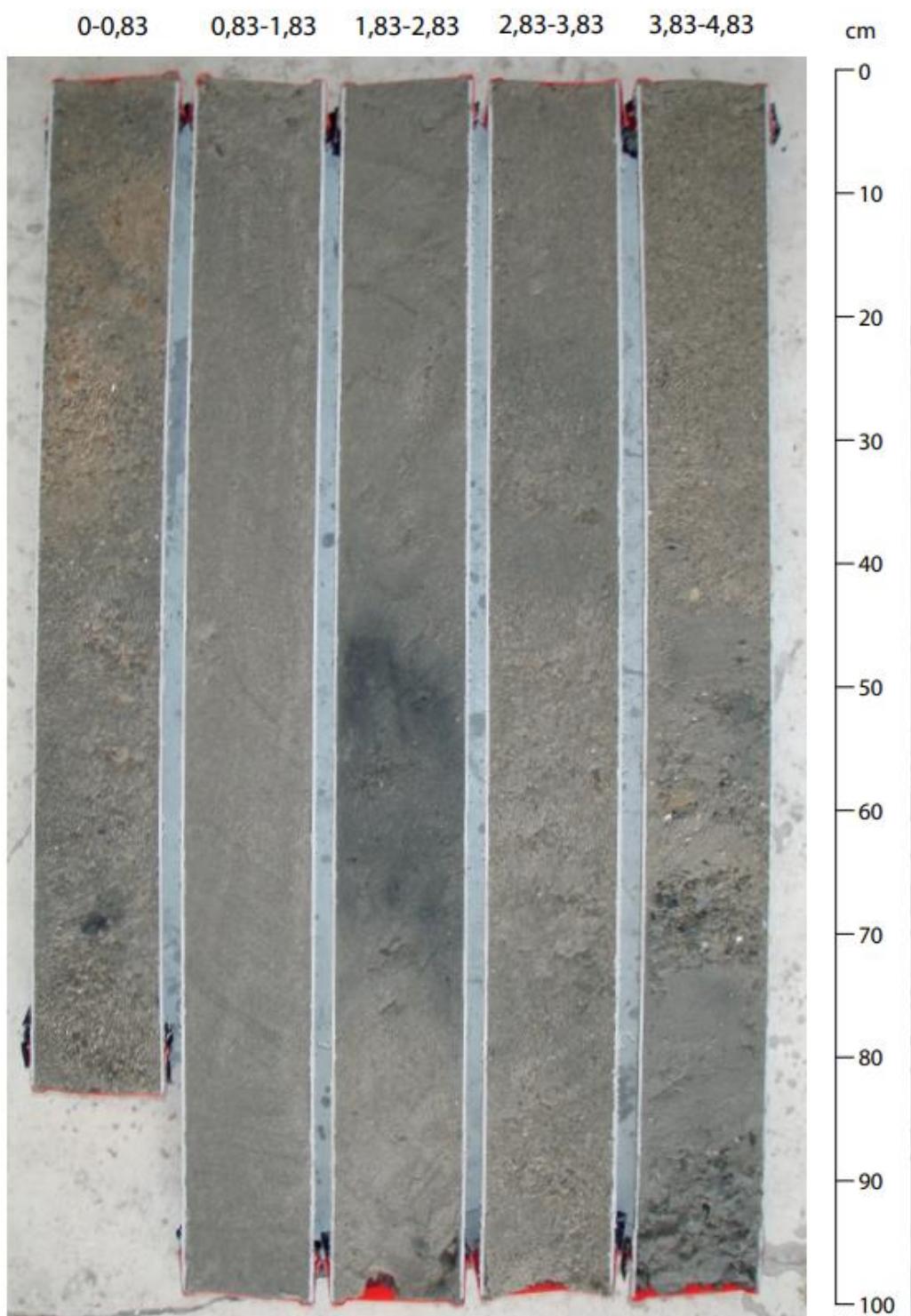
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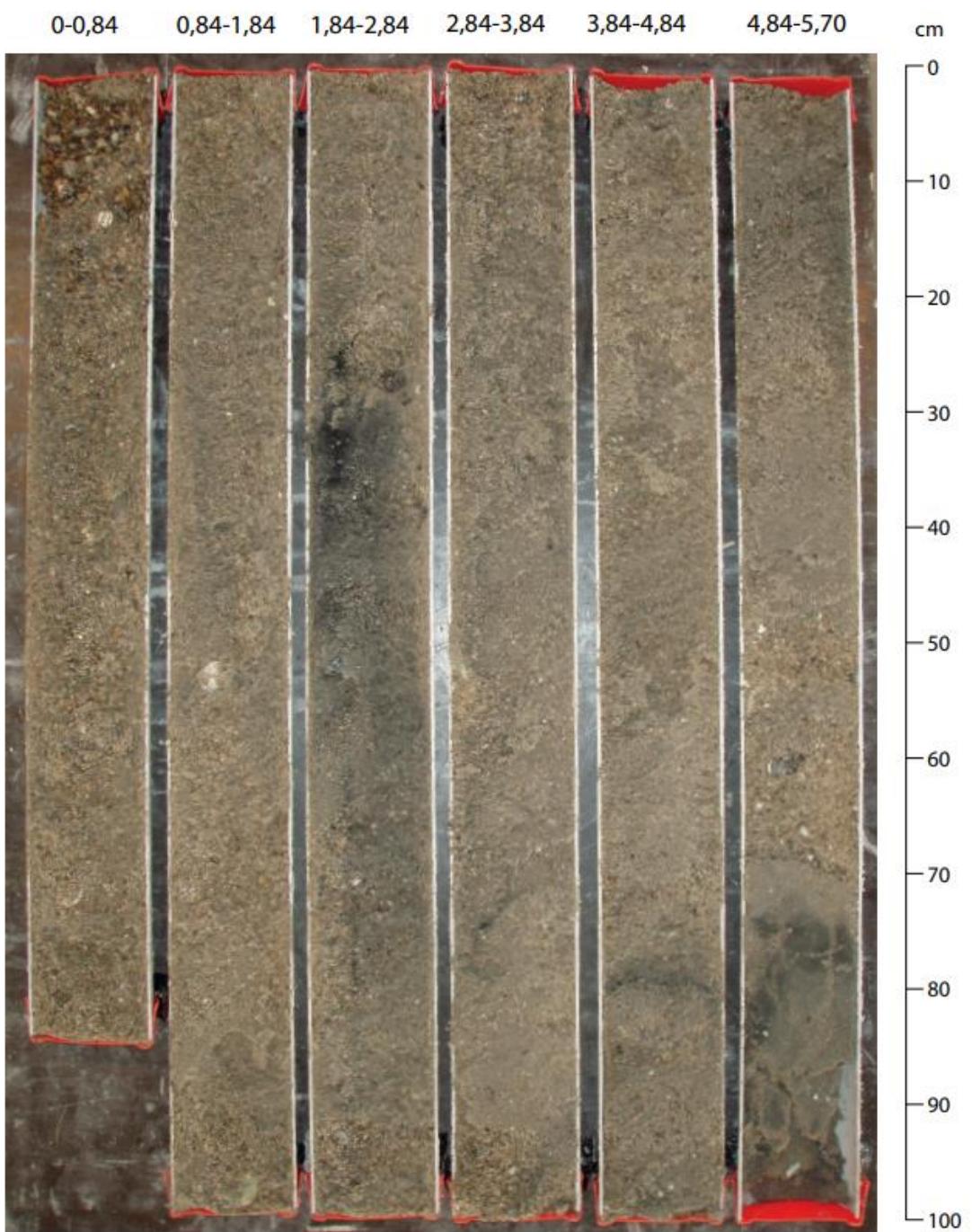
LodB2



LodB3



LodB4

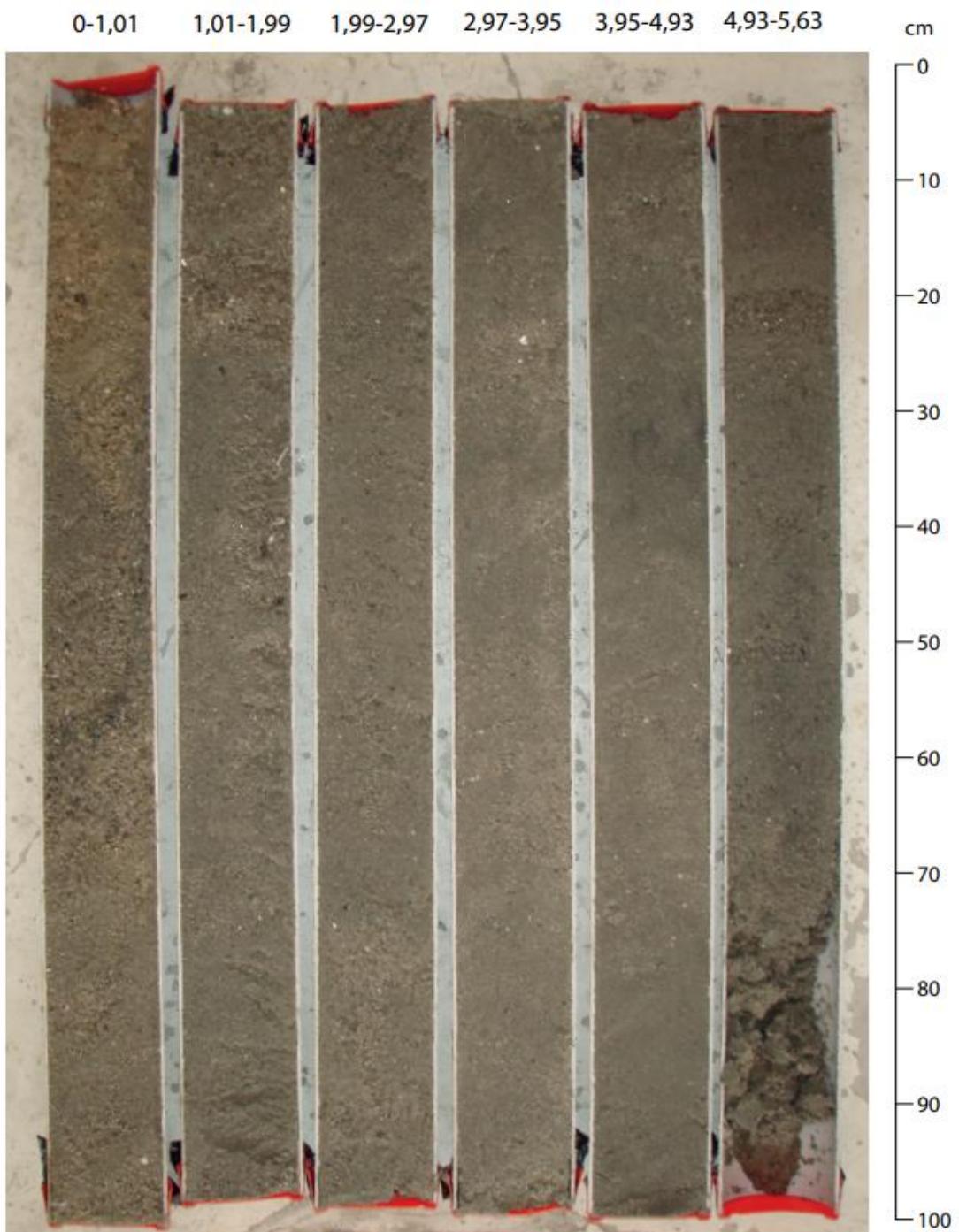


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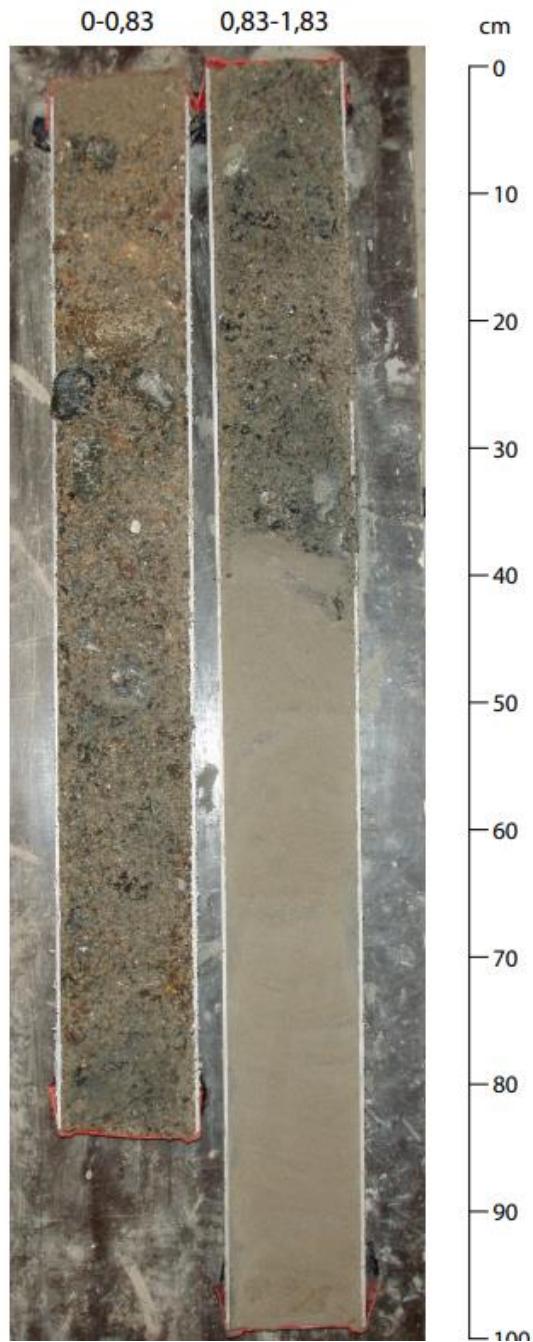
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LodB7



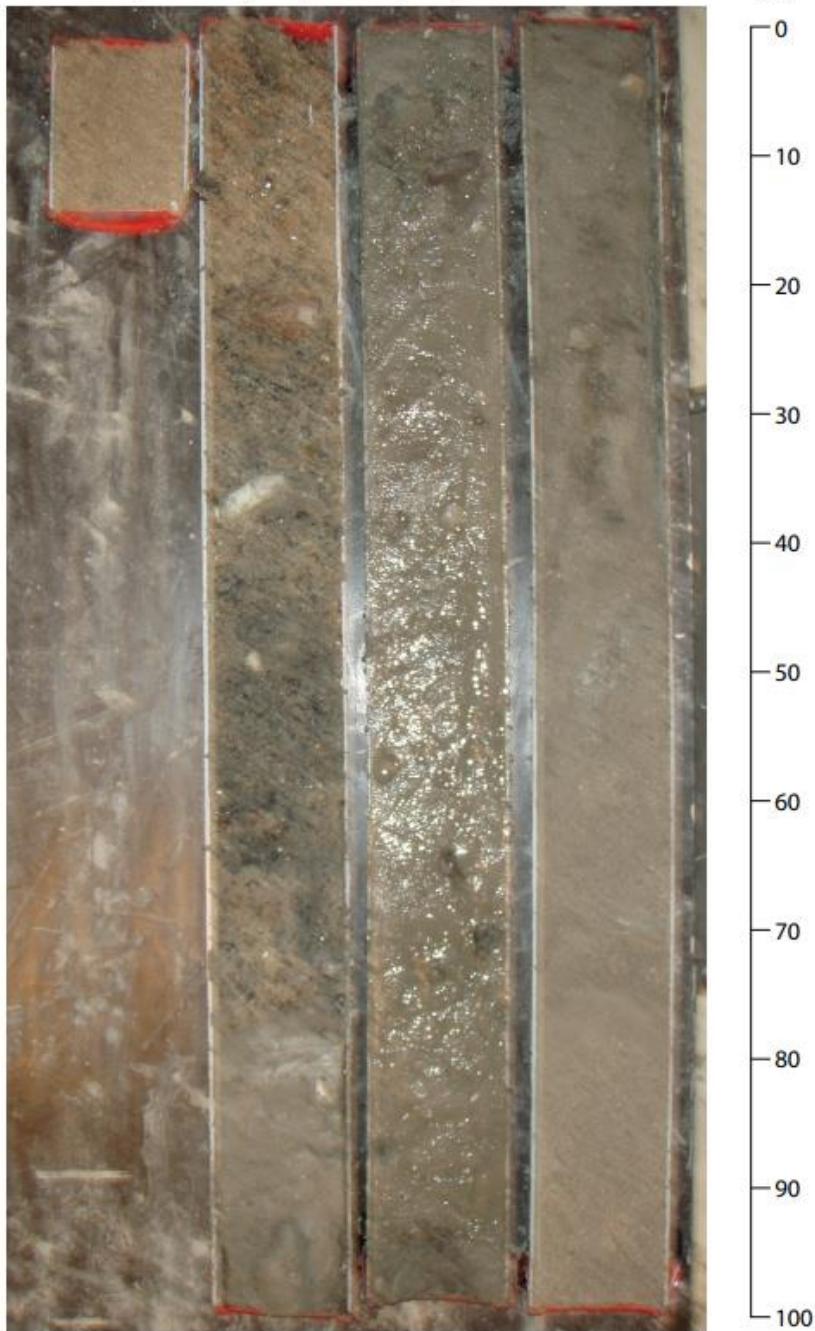
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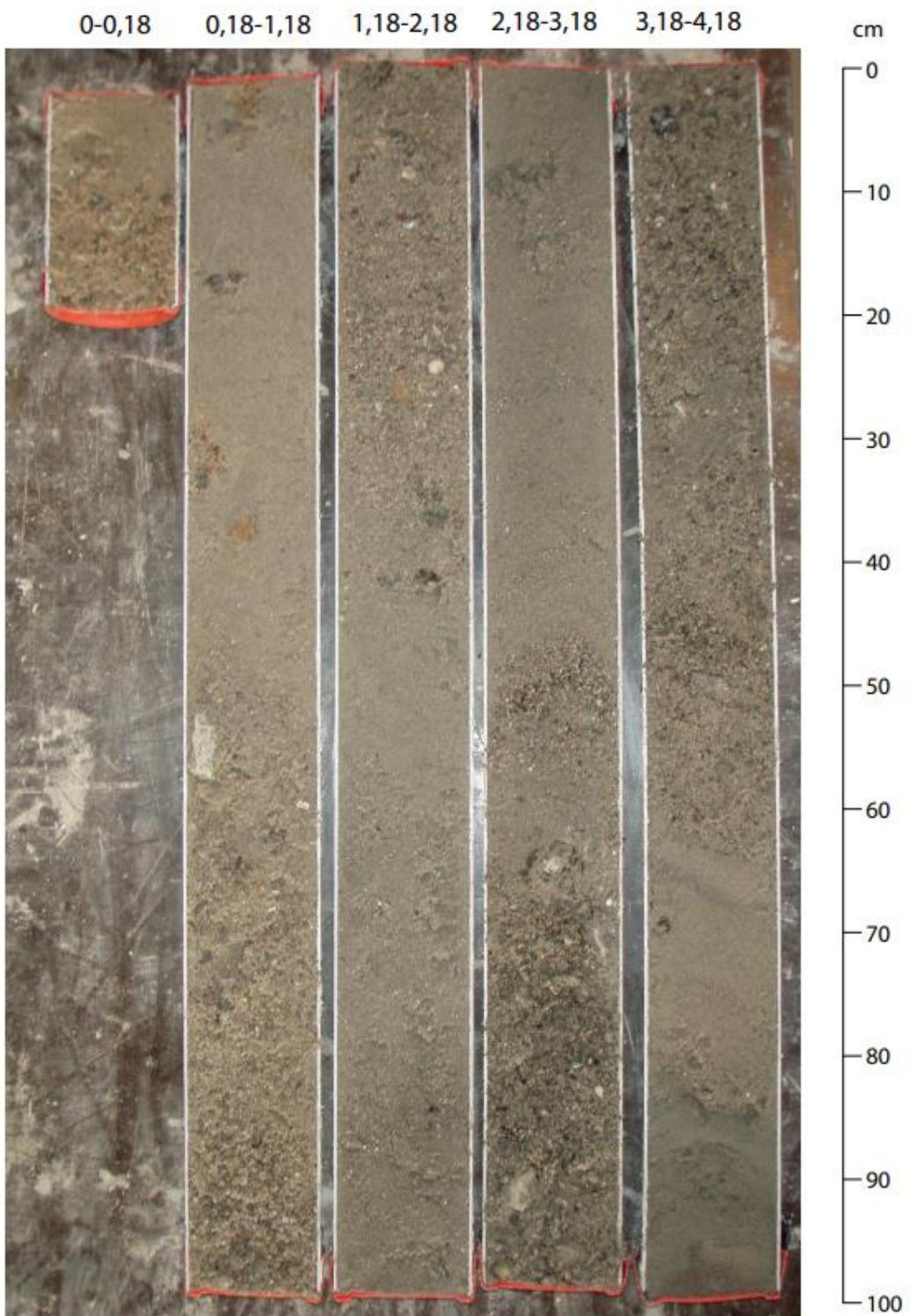
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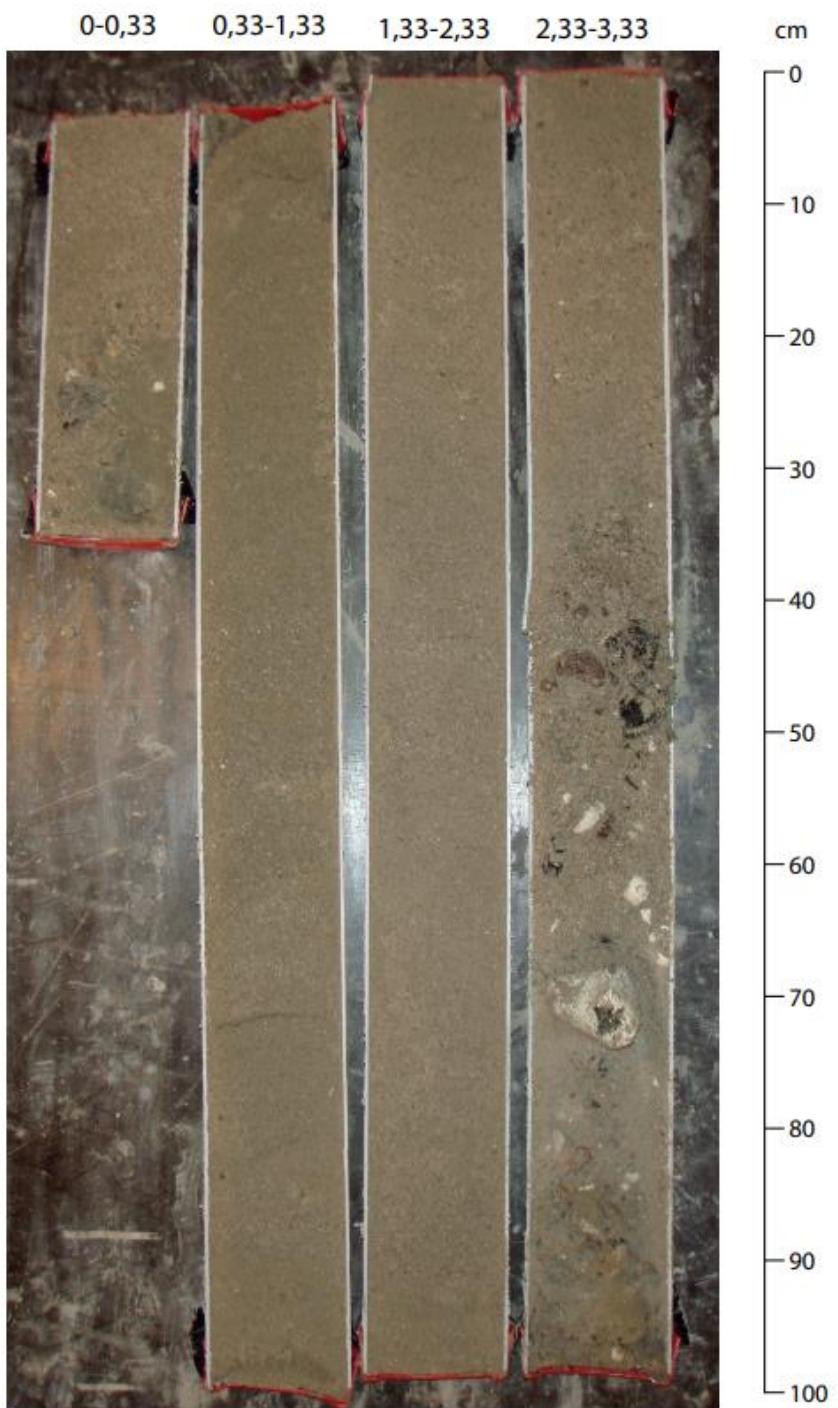
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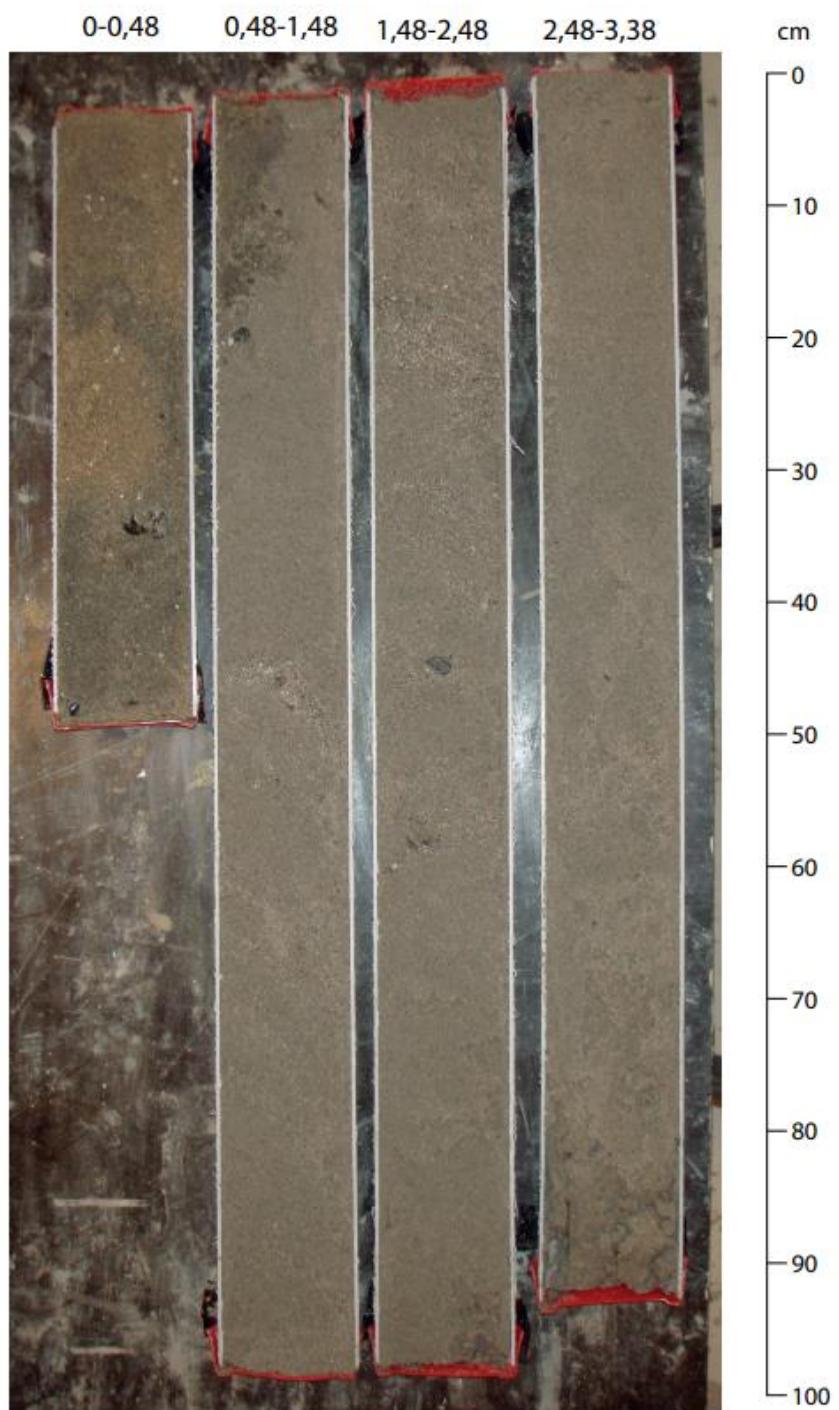
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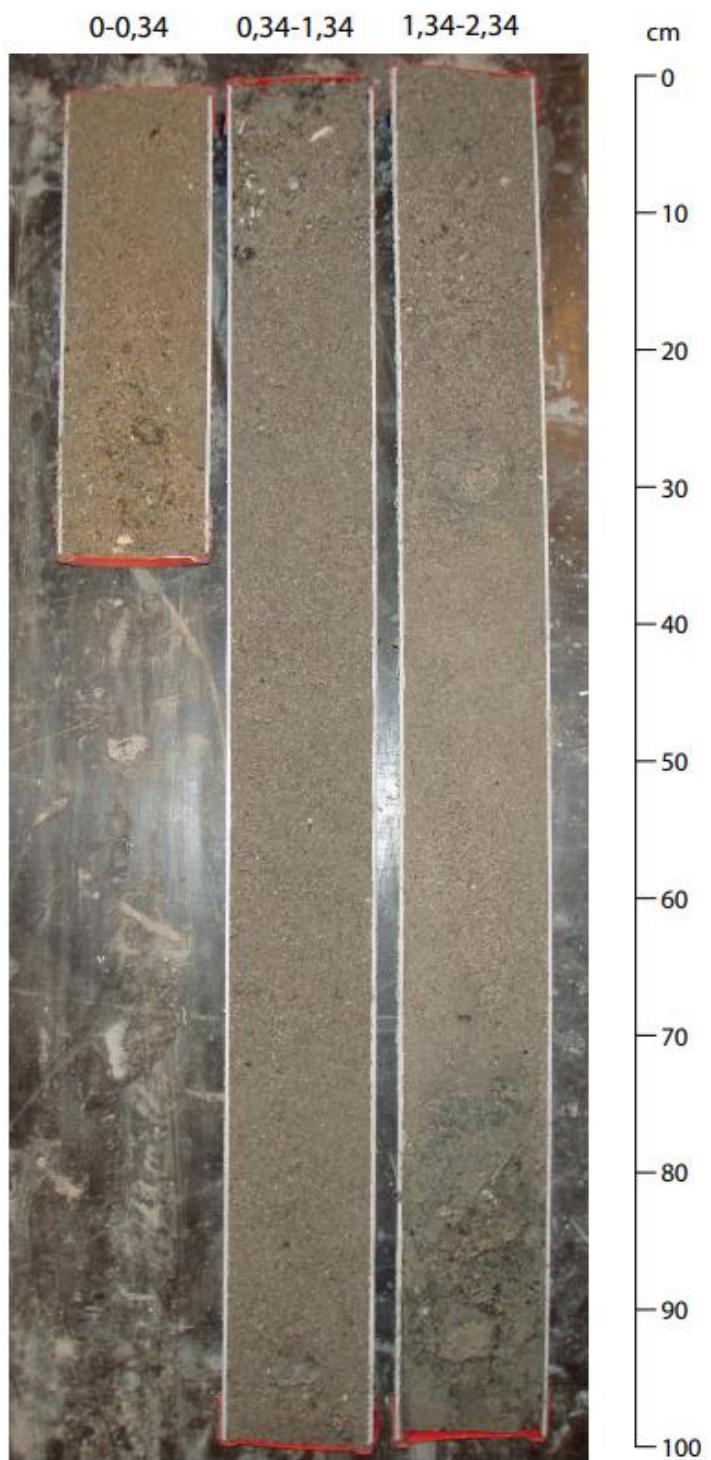
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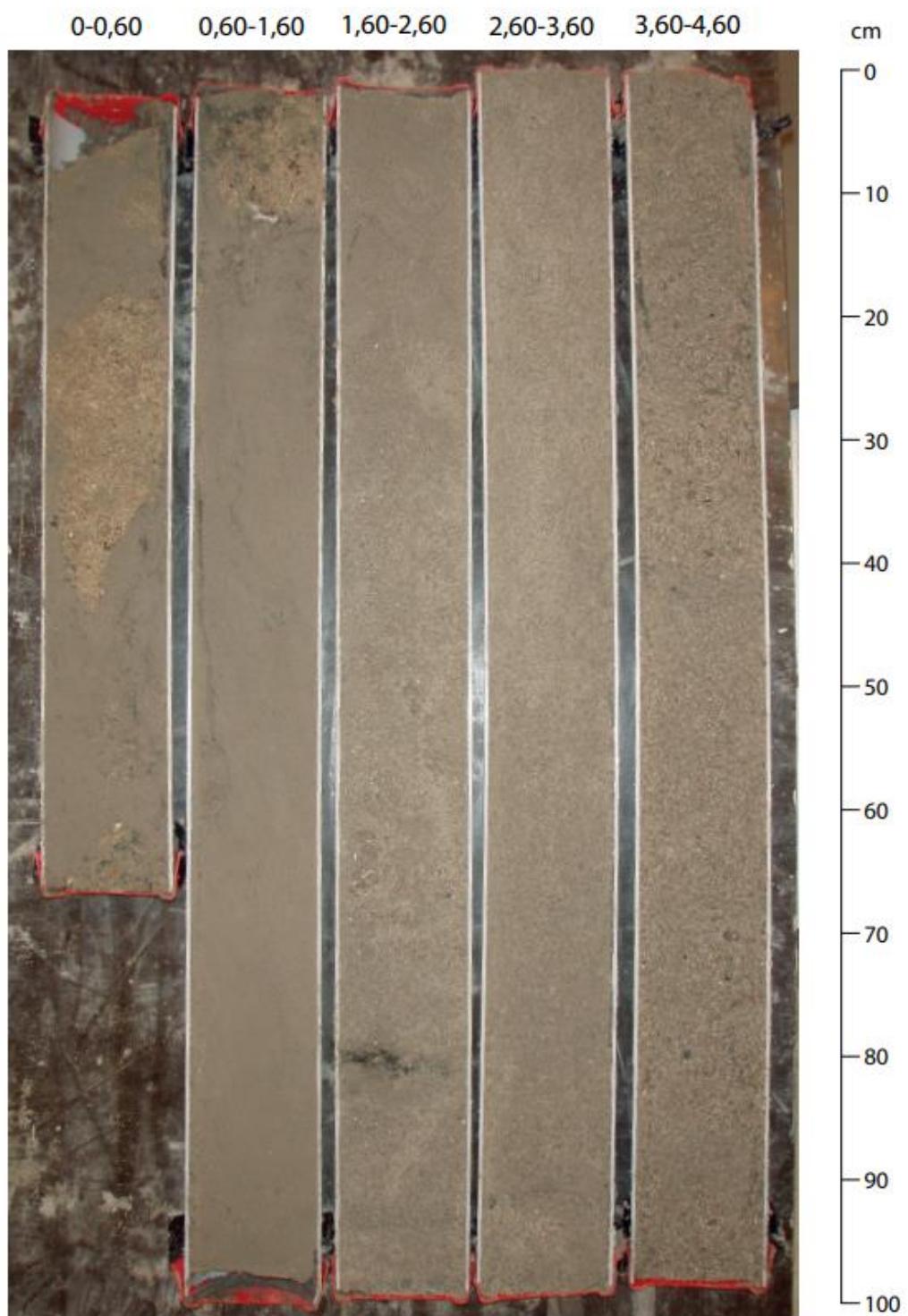
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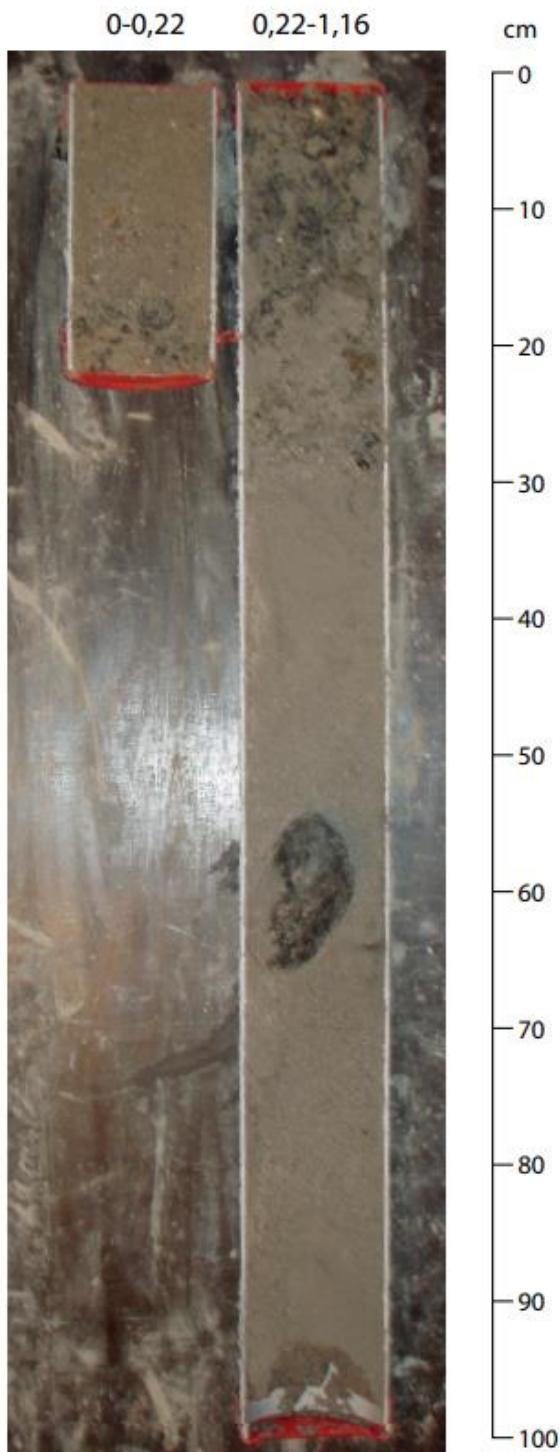
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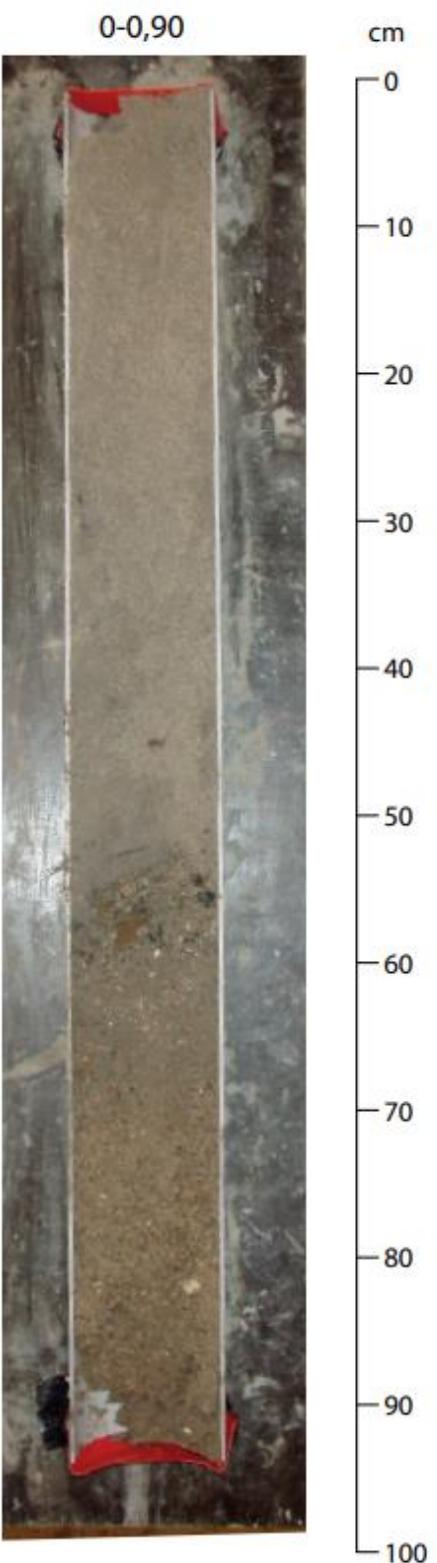
Lod_A_IB_07



Lod_A_IB_08



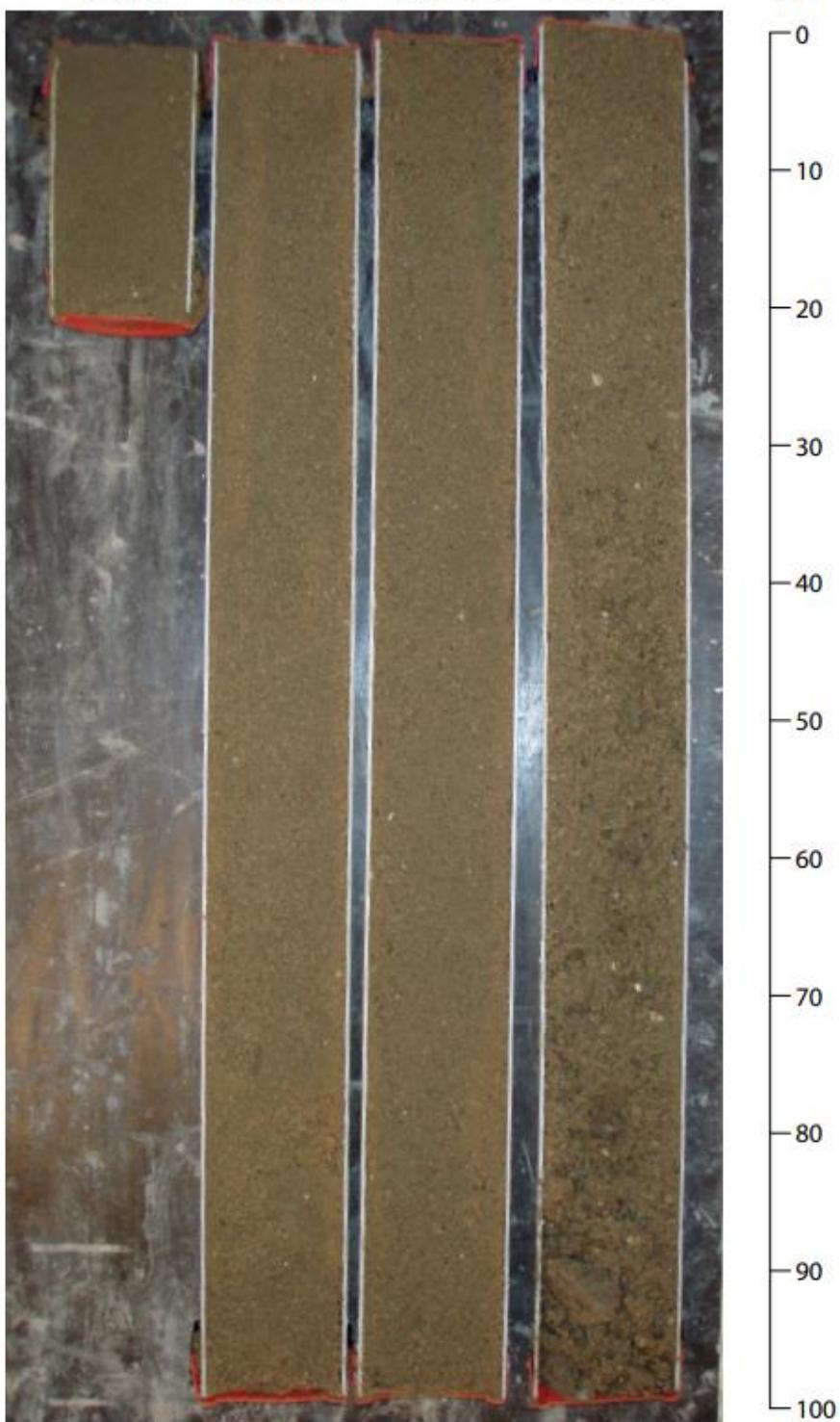
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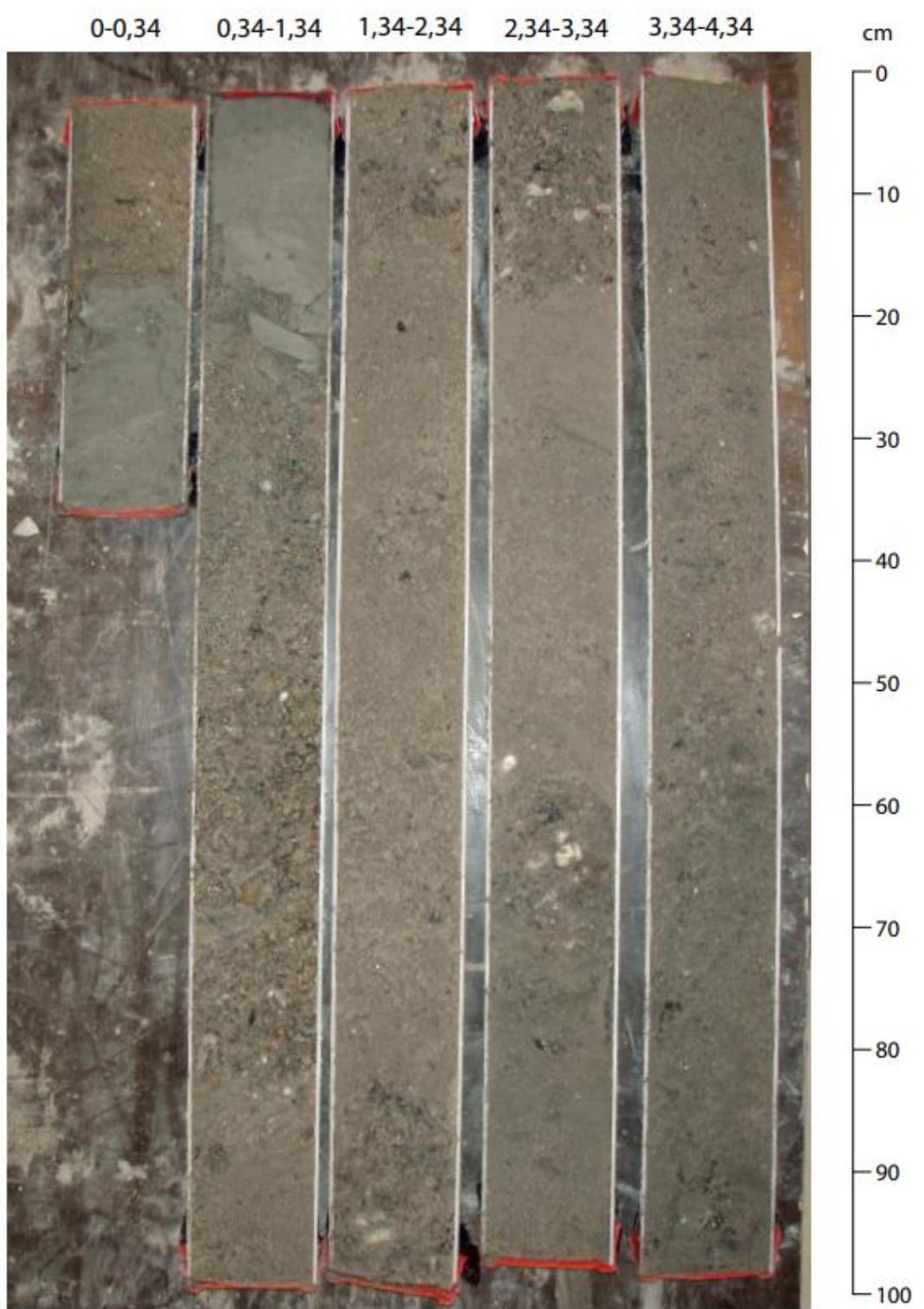
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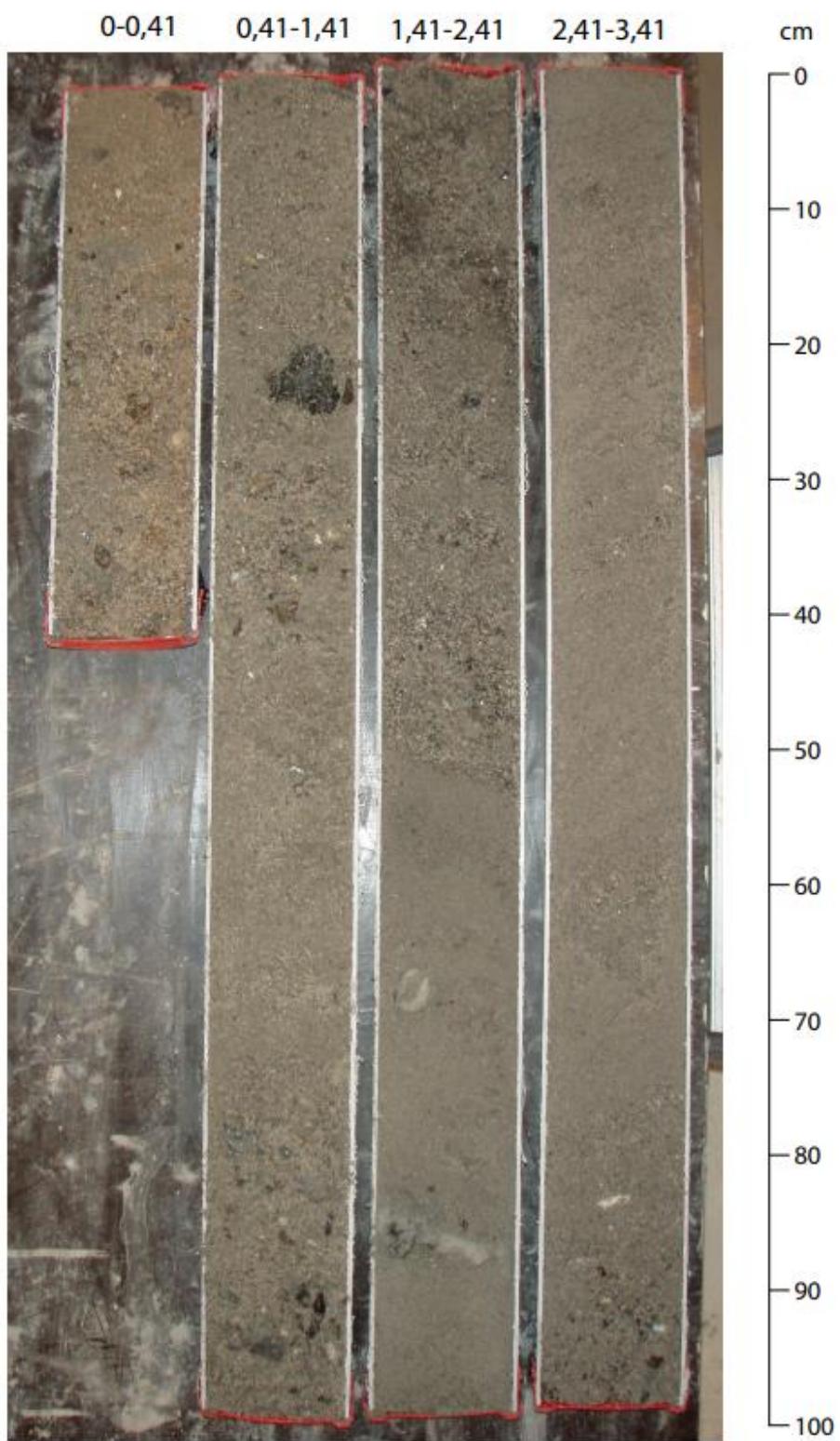
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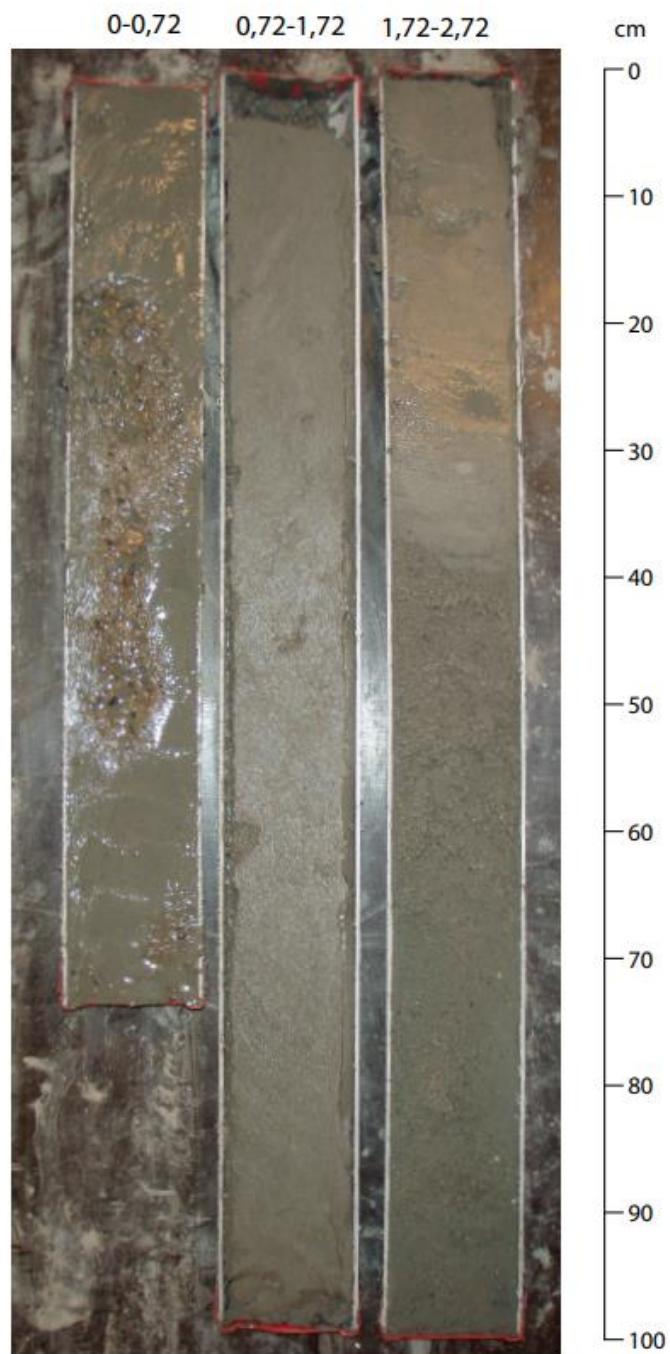
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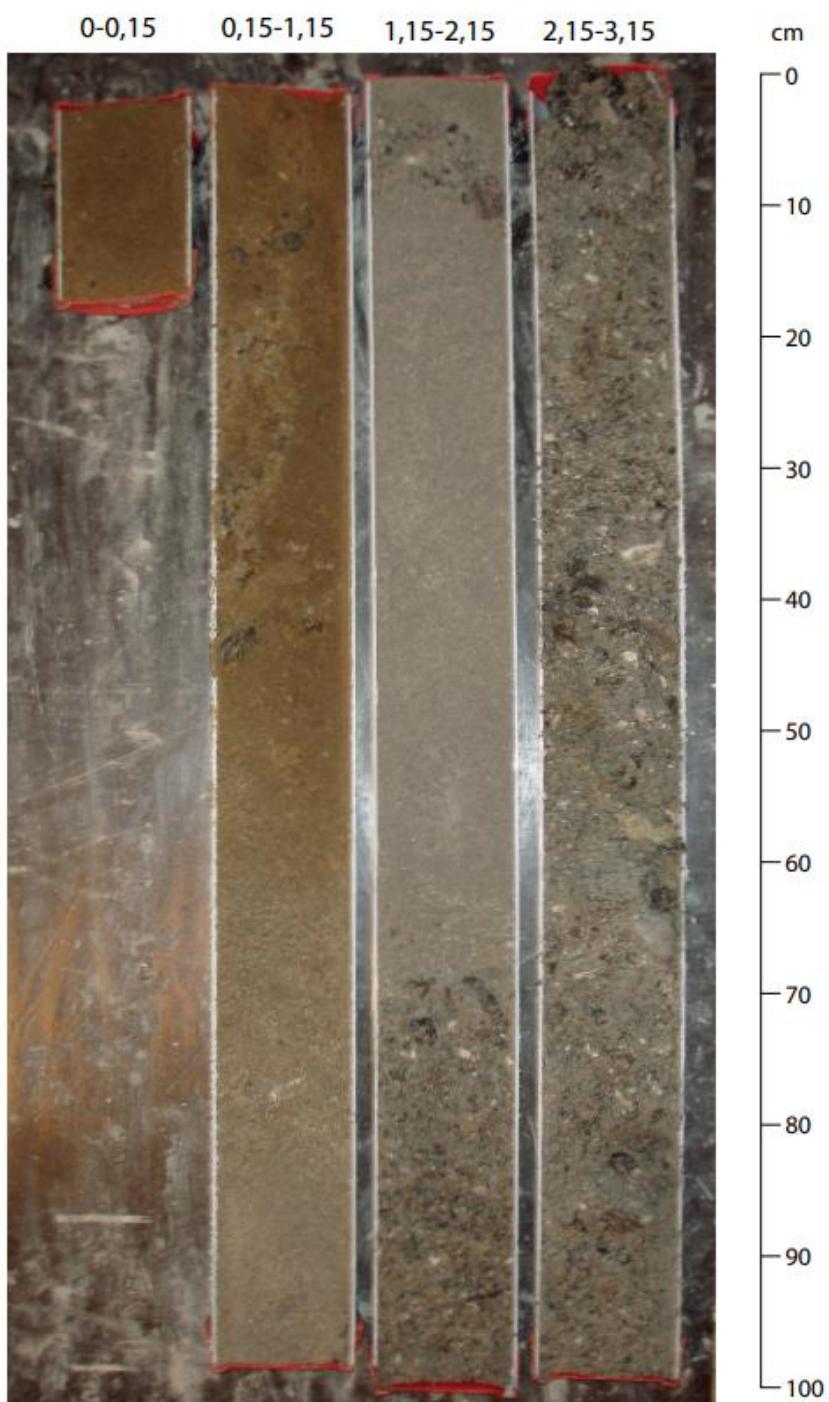
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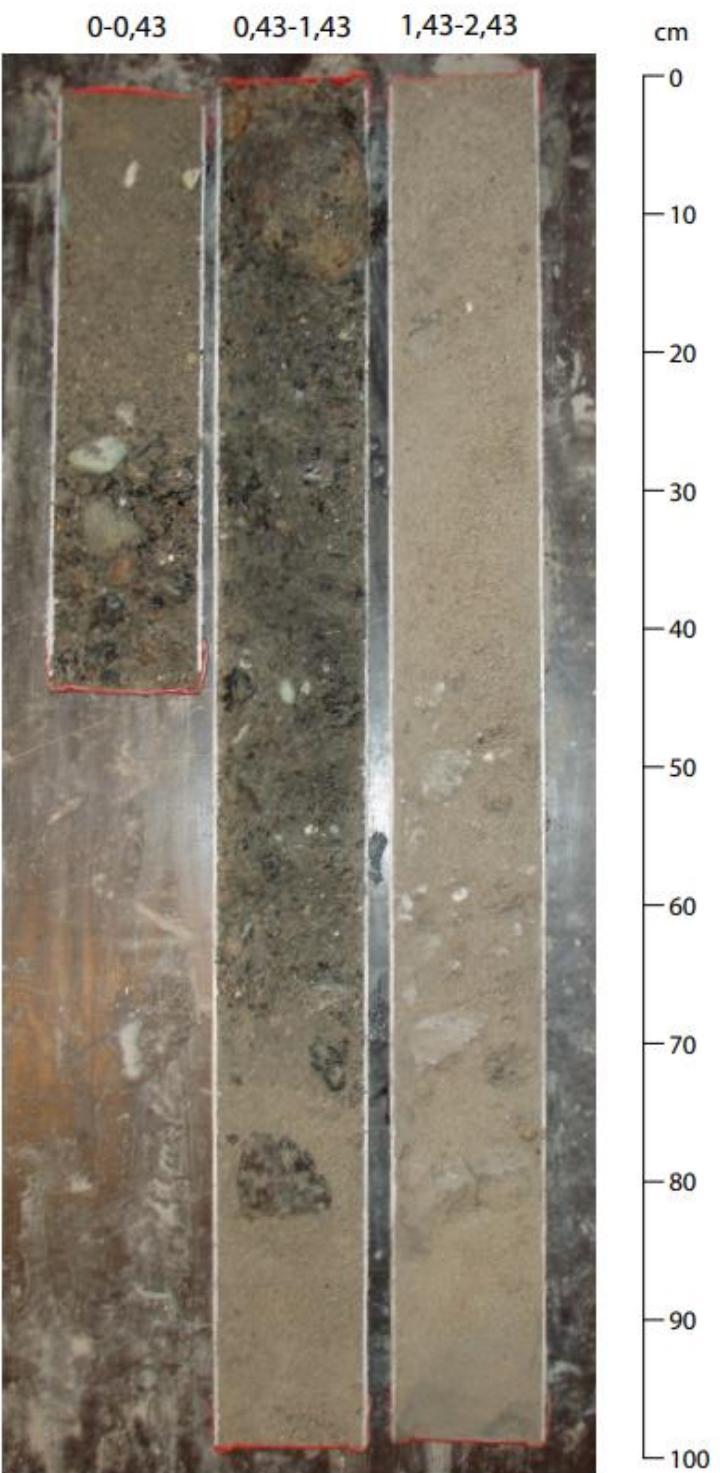
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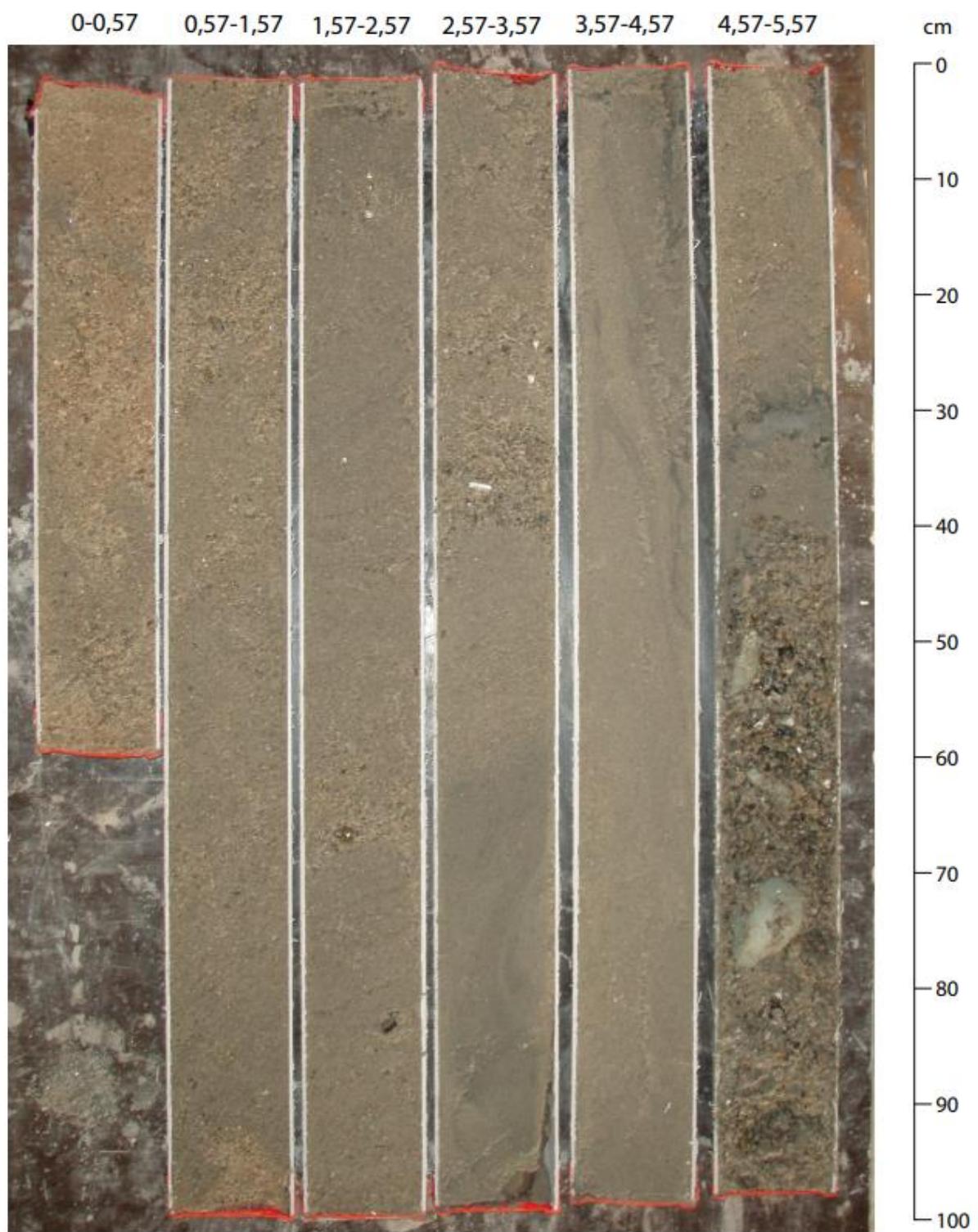
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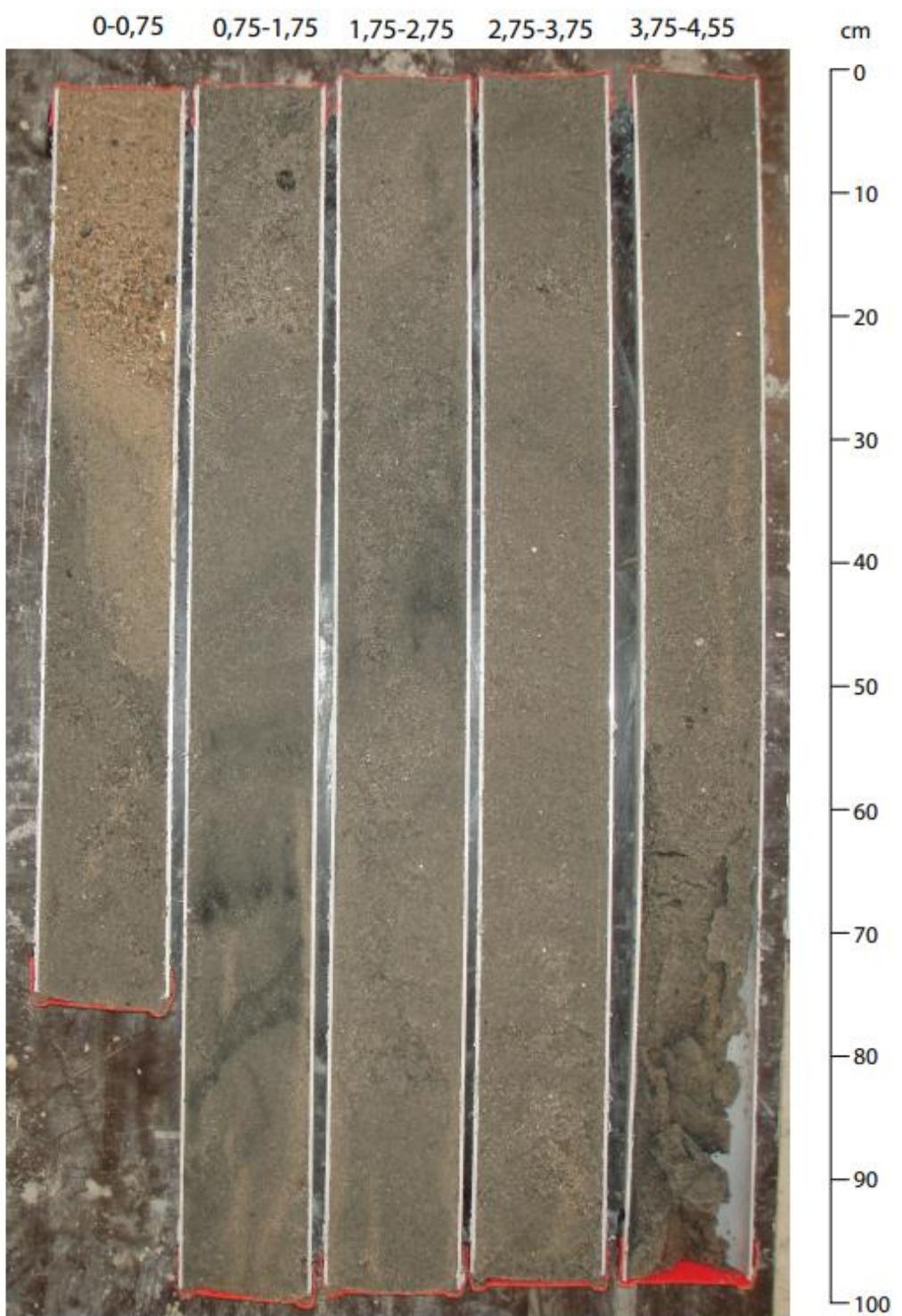
Lod_A_IB_15



Lod_B_IB_16



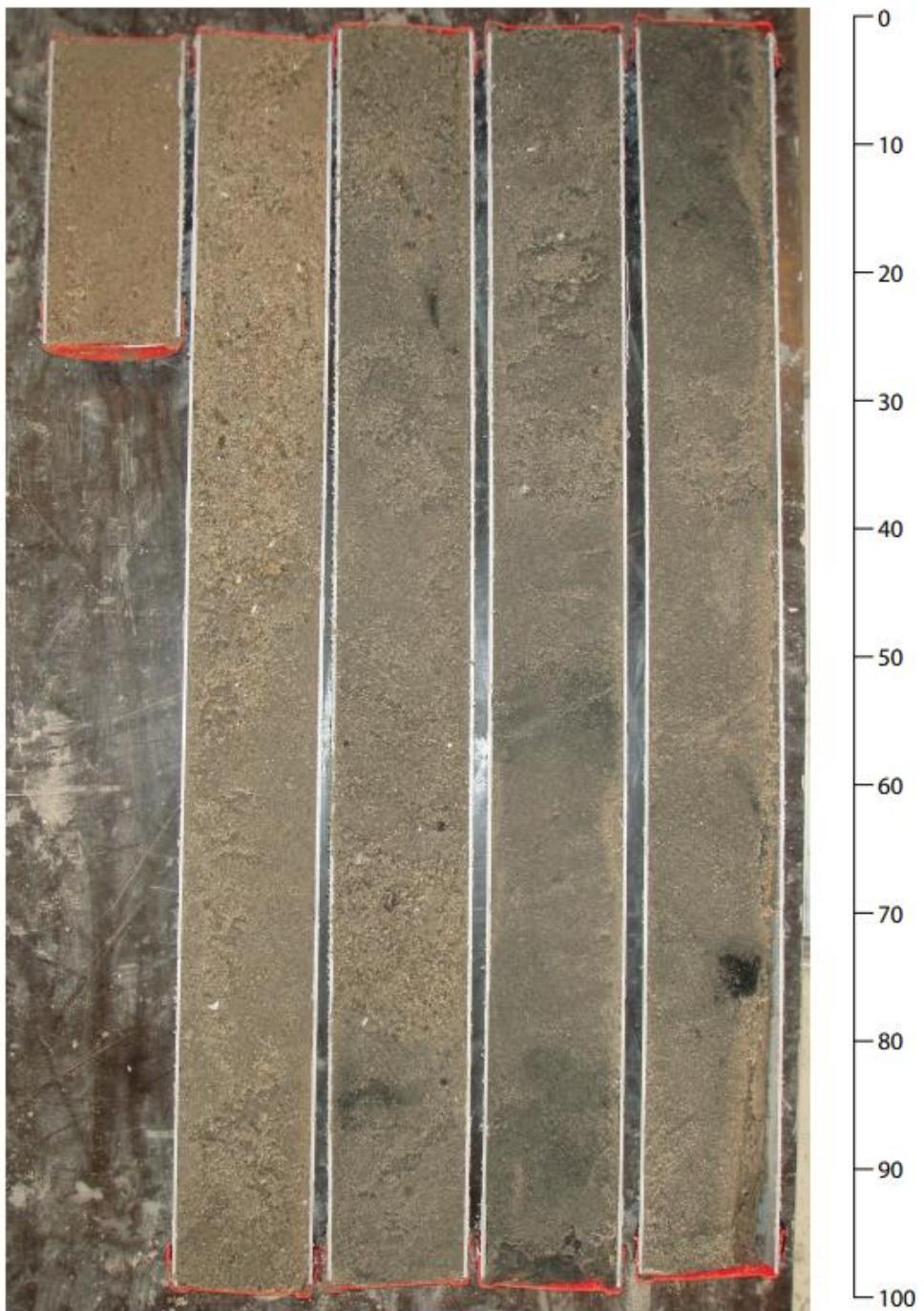
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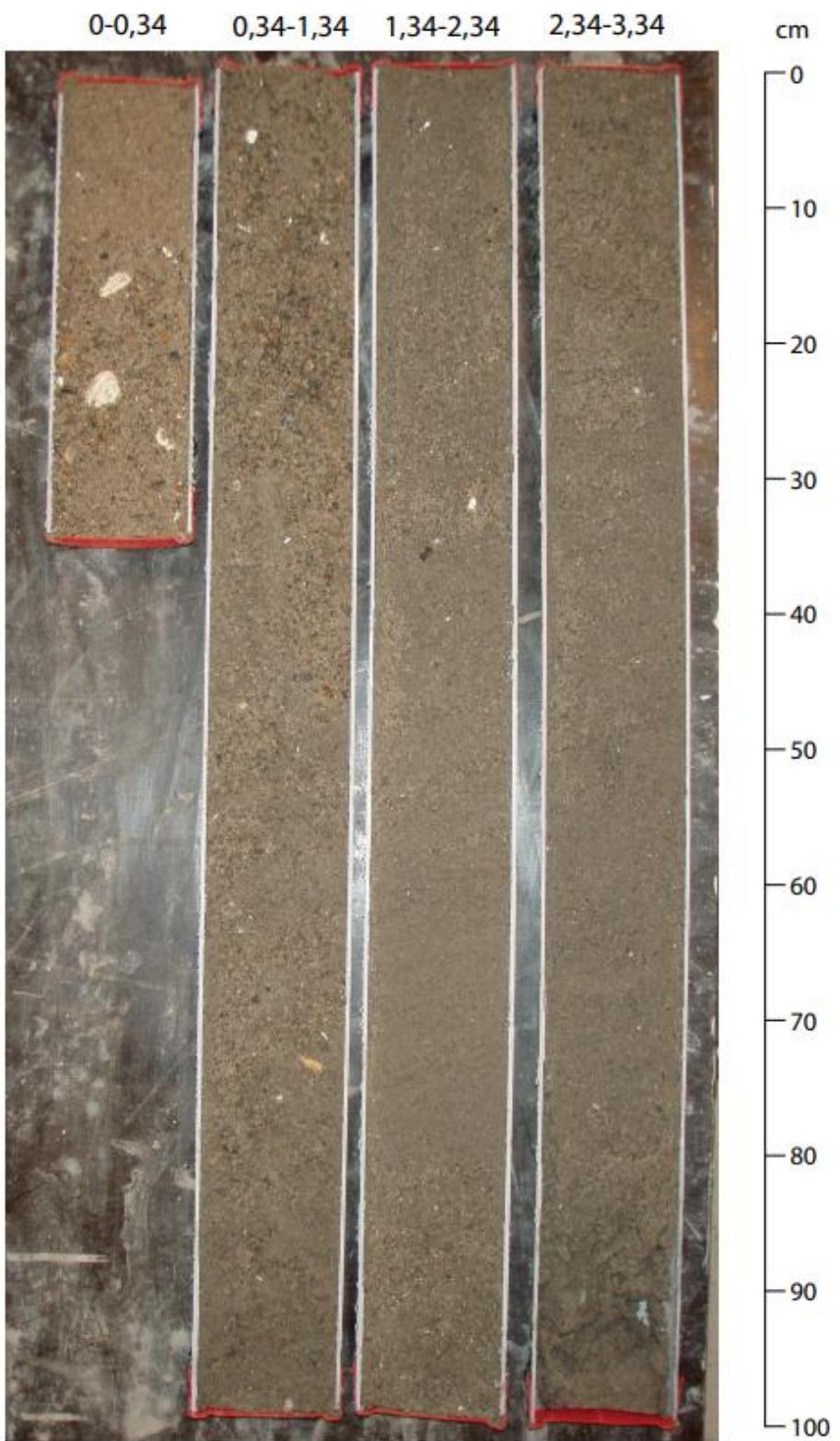
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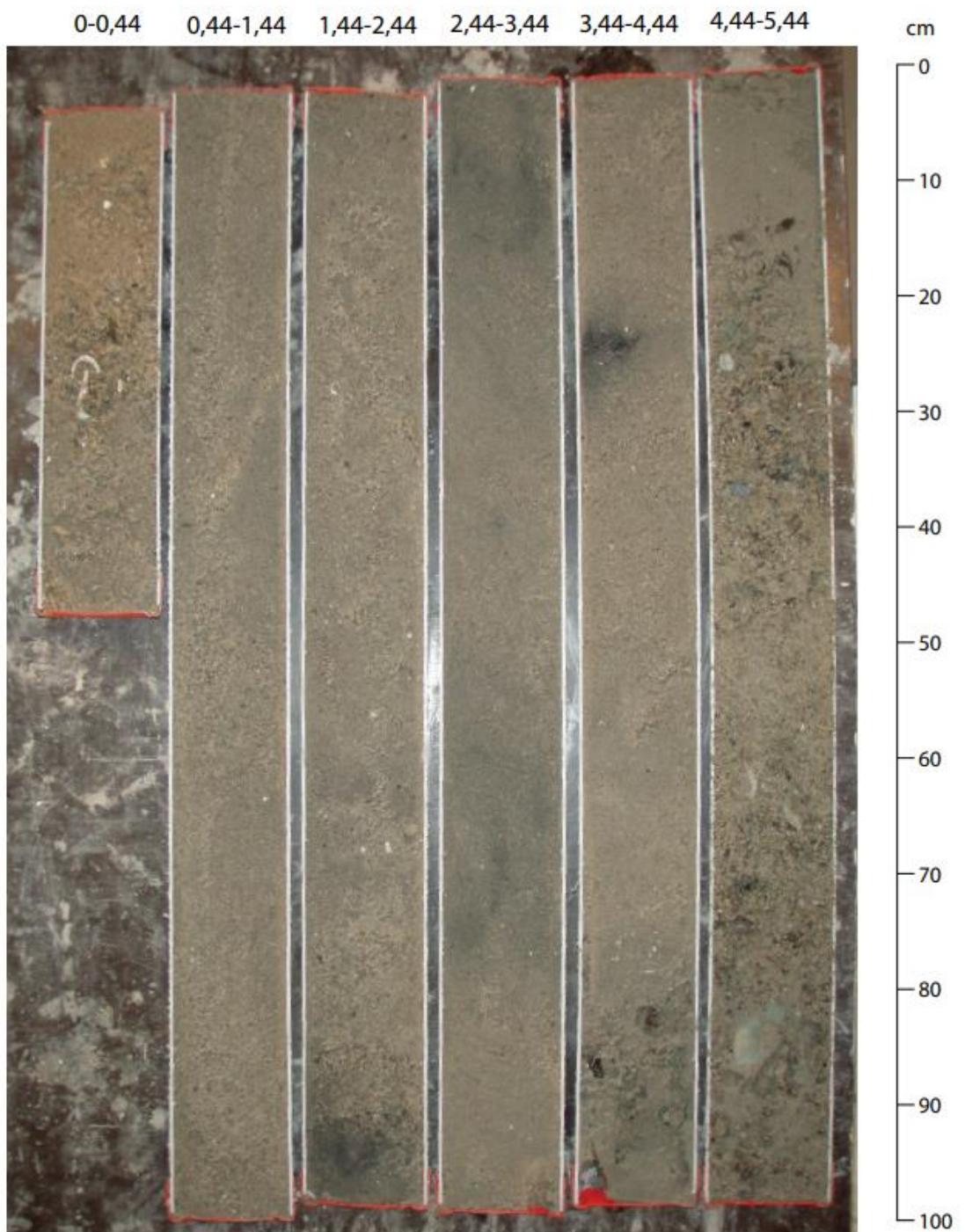
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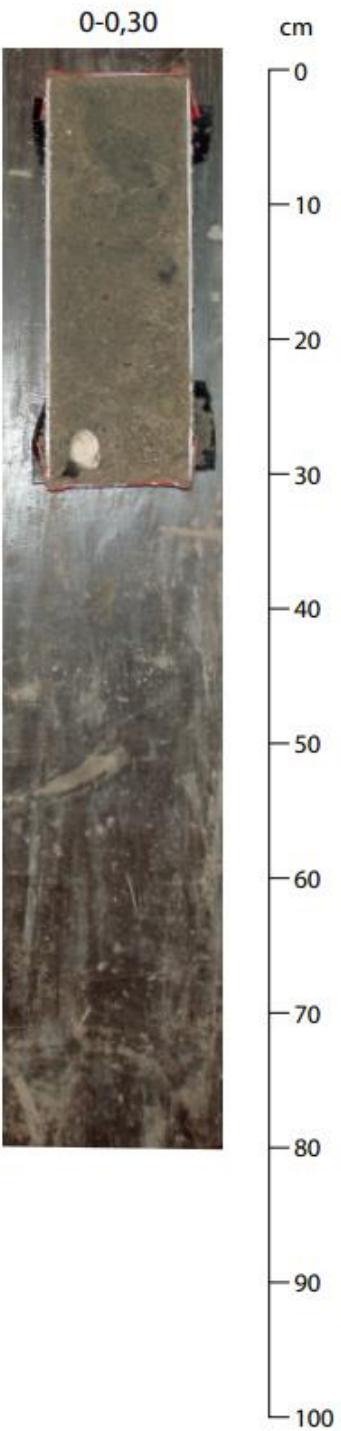
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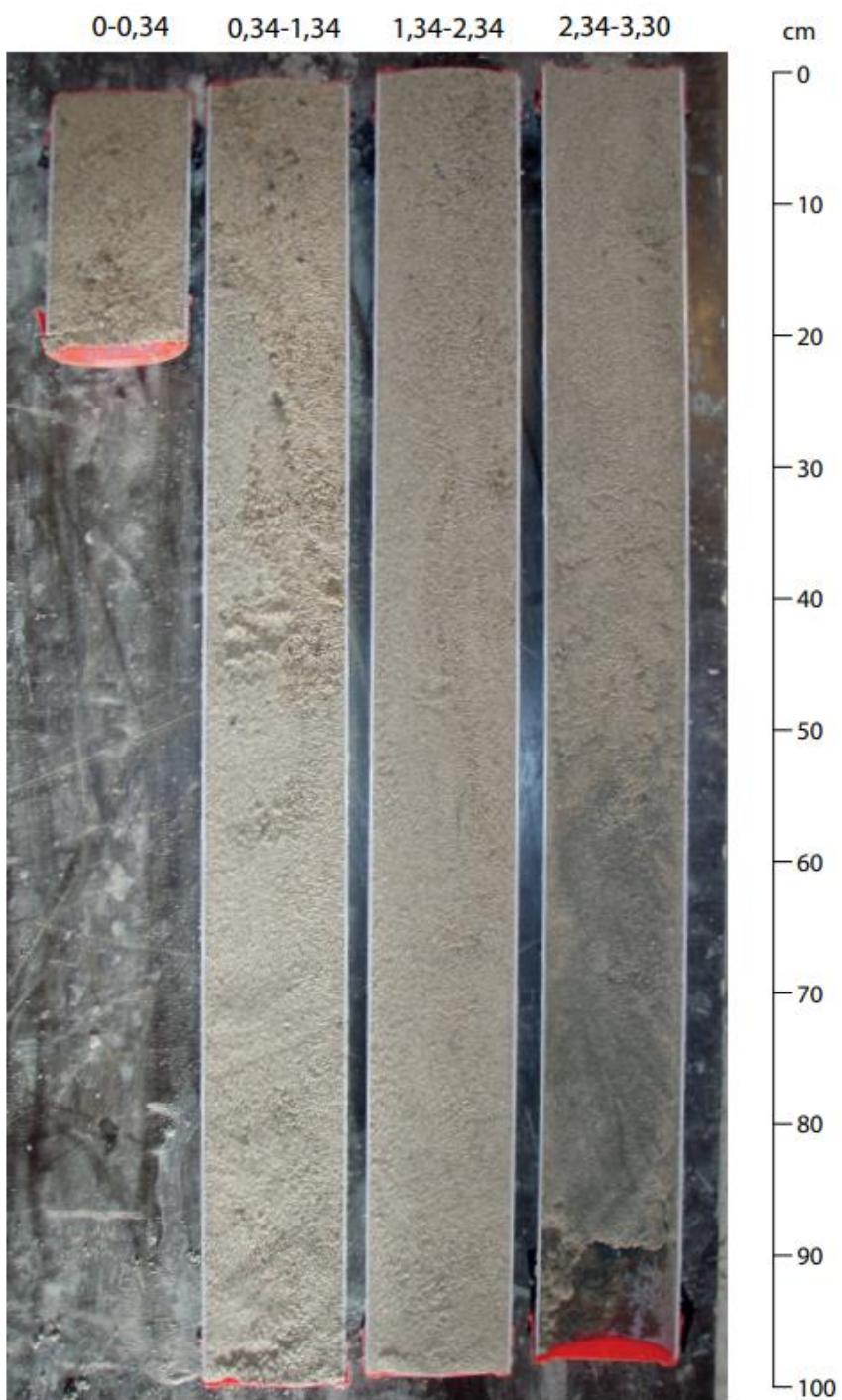
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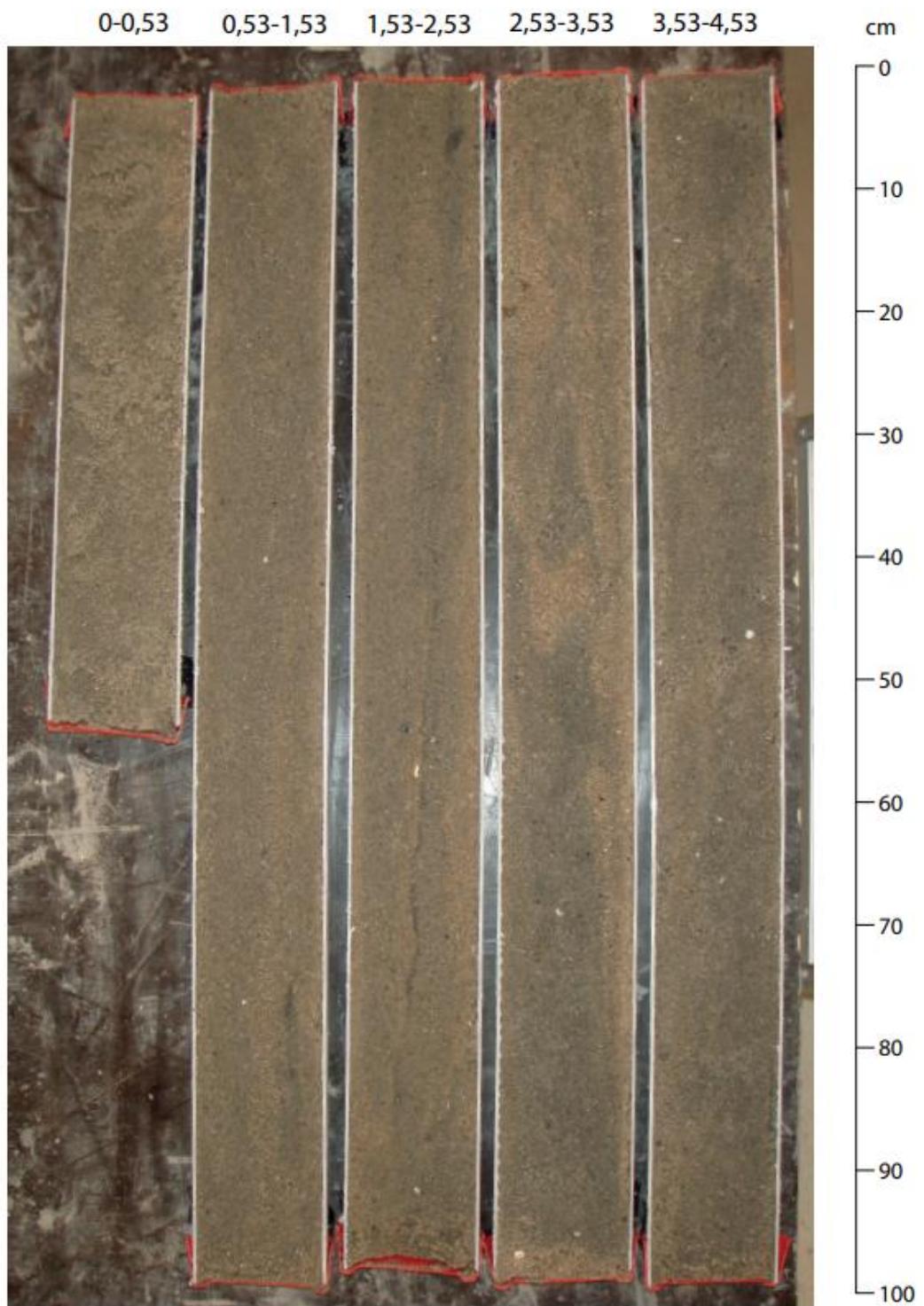
Lod_B_IB_22



Lod_B_IB_28



Lod_B_IB_33



Bilag D4

Lodbjerg A, fase IA: Oversigt over sigteresultater, vandindhold, glødetab

Vibrocore no.	Lab. Id. No.	Prøve interval (cm)	D-50 (mm)	<0,125 mm (%)	Vandindhold (%)	Glødetab (%)
LOD-A1	200203	0-20	0.27	7.42	16	0.5
-	200204	100-120	2.38	3.33	9	0.6
LOD-A1a	200200	0-20	6.3	1.12	11	0.8
-	200201	100-120	0.17	6.32	16	0.3
-	200202	200-220	0.3	1.77	13	0.4
LOD-A2	200205	0-20	0.3	1.51	14	0.4
-	200206	100-120	0.15	9.57	19	0.4
LOD-A3	200207	0-20	0.53	0.93	15	0.5
-	200208	100-120	0.3	3.18	12	0.4
-	200209	200-220	2.23	3.66	13	1
-	200210	290-310	1.32	1.66	9	0.6
-	200211	400-420	0.7	1.74	12	0.9
LOD-A4	200163	0-20	0.59	1	14	0.7
-	200164	100-120	0.34	2	13	0.7
-	200165	200-220	0.3	2.4	16	0.6
-	200166	300-320	0.3	2.19	13	0.3
-	200167	380-400	0.29	2.04	14	0.2
LOD-A5	200168	0-20	0.31	1.25	16	0.5
-	200169	100-120	0.29	0.75	17	0.5
-	200170	200-220	0.3	0.74	16	0.4
-	200171	300-320	0.3	0.99	15	0.4
-	200172	400-420	0.3	1.59	18	0.4
LOD-A6	200173	0-20	2.63	3.14	11	1.1
-	200174	70-90	0.08	73.78	19	1.1
LOD-A7	200175	0-20	2.57	3.62	7	0.8
-	200176	120-140	0.31	11.39	13	0.8
-	200177	200-220	0.15	25,79	14	0.7

Lodbjerg B, fase IA: Oversigt over sigteresultater, vandindhold, glødetab

Vibrocoring no.	Lab. Id. No.	Prøve interval (cm)	D-50 (mm)	<0,125 mm (%)	Vandindhold (%)	Glødetab (%)
Lod-B1	200212	40-60	0.28	1.56	16	0.3
-	200213	140-160	0.26	2.19	15	0.3
-	200214	240-260	0.28	1.77	14	0.4
-	200215	340-360	0.29	1.31	13	0.4
-	200216	440-460	0.3	1.91	22	0.3
-	200217	540-560	0.27	2.25	16	0.2
LOD-B2	200178	0-20	0.3	2.29	16	0.4
-	200179	100-120	0.29	1.64	17	0.4
-	200180	200-220	0.3	1.47	17	0.4
-	200181	300-320	0.26	3.19	17	0.4
-	200182	400-420	0.18	5.57	16	0.5
-	200183	480-500	0.29	2.05	17	0.4
Lod-B3	200218	20-40	0.33	0.73	11	0.4
-	200219	120-140	0.18	3.05	15	0.4
-	200220	220-240	0.27	3.56	15	0.4
-	200221	320-340	0.3	1.48	12	0.3
-	200222	400-420	0.3	2.48	14	0.3
-	200223	455-470	0.15	9.96	24	0.6
Lod-B4	200224	20-40	0.69	0.89	10	0.4
-	200225	100-120	0.34	0.85	10	0.3
-	200226	200-220	0.33	1.06	12	0.4
-	200227	320-340	0.33	1.67	10	0.3
-	200228	400-420	0.33	1.24	11	0.3
-	200229	500-520	0.33	1.32	11	0.3
LOD-B5	200184	40-60	0.53	0.94	17	0.5
-	200185	140-160	0.32	0.8	11	0.4
-	200186	240-260	0.31	1.37	14	0.3
-	200187	340-360	0.31	1.42	14	0.4
LOD-B6	200188	40-60	0.5	1.12	9	0.5
-	200189	140-160	0.31	1.16	12	0.4
-	200190	240-260	0.3	1.59	13	0.3
-	200191	340-360	0.29	1.64	14	0.2
-	200192	440-460	0.27	5.08	17	0.5
-	200193	540-560	0.29	2.8	15	0.5
LOD-B7	200194	10-30	0.31	1.08	14	0.4
-	200195	110-130	0.32	1.33	13	0.4
-	200196	210-230	0.17	5.71	17	0.2
-	200197	310-330	0.15	5.49	19	0.5
-	200198	430-460	2.28	15.74	8	0.8
LOD-B7	200199	500-520	0.14	33.4	20	0.6

Lodbjerg A, fase IB: Oversigt over sigteresultater, vandindhold, glødetab

Vibrocore no.	Lab. Id. No.	Prøve interval (cm)	D-50 (mm)	<0,125 mm (%)	Vandindhold (%)	Glødetab (%)
Lod-A-IB_01	200700	5-25	5.95	0.73	3	0.5
-	200701	150-170	0.09	85.87	16	0.9
Lod-A-IB_02	200702	20-40	5.73	0.84	9	0.5
-	200703	290-310	0.39	2.64	15	0.4
Lod-A-IB_03	200704	0-20	1.72	0.61	11	0.4
-	200705	100-120	1.05	1.25	8	0.7
-	200706	200-220	0.4	2.83	15	0.4
-	200707	300-320	1.3	2.13	10	0.7
-	200708	390-410	0.34	1.99	15	0.2
Lod-A-IB_04	200709	0-18	0.28	1.73	16	0.4
-	200710	100-120	0.27	1.51	17	0.4
-	200711	200-220	0.27	1.23	16	0.4
-	200712	245-255	0.29	1.92	15	0.4
Lod-A-IB_05	200713	0-20	0.34	1.64	14	0.4
-	200714	100-120	0.32	1.66	17	0.4
-	200715	200-220	0.31	1.19	19	0.3
-	200716	300-320	0.3	0.9	17	0.4
Lod-A-IB_06	200717	0-20	0.36	3.66	13	0.4
-	200718	100-120	0.42	5.57	15	0.5
-	200719	190-210	0.33	3.26	15	0.5
Lod-A-IB_07	200720	12-29	0.38	6.31	12	0.4
-	200721	100-120	0.09	94.73	20	1.2
-	200722	200-220	0.32	3.15	15	0.5
-	200723	300-320	0.35	2	15	0.4
-	200724	400-420	0.44	2.2	13	0.5
Lod-A-IB_08	200725	0-17	0.32	1.59	16	0.3
-	200726	90-110	0.25	17.4	17	0.5
Lod-A-IB_09	200727	0-20	0.49	1.43	10	0.5
-	200728	70-90	0.28	5.95	17	0.5
Lod-A-IB_10	200729	0-20	0.42	4.26	14	0.5
-	200730	100-120	0.34	3.64	15	0.4
-	200731	200-220	0.34	3.66	16	0.5
-	200732	280-300	0.54	1.76	9	0.6
Lod-A-IB_11	200733	100-120	3.43	1.52	7	0.4
-	200734	190-210	0.44	1.15	11	0.3
-	200735	310-330	0.43	3.32	13	0.4
-	200736	400-420	0.48	1.93	14	0.4
Lod-A-IB_12	200737	0-20	0.42	2.49	14	0.4
-	200738	100-120	0.45	1.05	13	0.3
-	200739	200-220	0.31	2.29	19	0.5
-	200740	300-320	0.38	2.17	16	0.4
Lod-A-IB_13	200741	0-20	0.11	59.32	17	0.6
-	200742	100-120	0.1	68.38	19	1.0
-	200743	190-210	0.07	95.23	20	1.3
-	200744	250-270	0.23	10.55	16	0.6
Lod-A-IB_14	200745	0-20	0.38	5.08	14	0.5
-	200746	90-110	0.41	3.53	14	0.3
-	200747	160-180	0.33	0.82	16	0.4
Lod-A-IB_15	200748	0-20	0.32	2.54	17	0.5
-	200749	90-110	12.74	1.08	5	0.5
-	200750	200-220	0.24	6.68	14	0.5

Lodbjerg B, fase IB: Oversigt over sigteresultater, vandindhold, glødetab

Vibrocore no.	Lab. Id. No.	Prøve interval (cm)	D-50 (mm)	<0,125 mm (%)	Vandindhold (%)	Glødetab (%)
Lod-B-IB_16	200751	0-20	0.41	0.35	15	0.3
	200752	100-120	0.33	1.05	15	0.3
	200753	200-220	0.29	1.21	17	0.3
	200754	300-320	0.3	2.18	15	0.3
	200755	400-420	0.2	8.15	17	0.3
	200756	460-480	0.24	4.48	18	0.4
Lod-B-IB_17	200757	0-20	0.61	0.85	10	0.4
	200758	30-50	0.33	1.74	15	0.4
	200759	100-120	0.28	2.87	16	0.4
	200760	200-220	0.33	2.28	15	0.4
	200761	300-320	0.31	2.65	17	0.4
	200762	400-420	0.35	2.45	17	0.3
Lod-B-IB_18	200763	0-20	0.36	1	15	0.4
	200764	100-120	0.33	1.44	16	0.4
	200765	200-220	0.33	3.04	14	0.4
	200766	300-320	0.3	3.63	17	0.4
	200767	400-420	0.32	3.97	15	0.3
Lod-B-IB_19	200768	10-30	0.69	0.66	9	0.5
	200769	100-120	0.44	1.32	14	0.4
	200770	200-220	0.35	1.43	13	0.4
	200771	300-320	0.33	0.93	15	0.3
Lod-B-IB_20	200772	0-18	0.37	0.89	14	0.3
	200773	100-120	0.32	1.87	13	0.3
	200774	200-220	0.33	1.49	14	0.3
	200775	300-320	0.3	2.42	14	0.3
	200776	400-420	0.3	2.48	16	0.4
	200777	500-520	4.78	3.83	7	0.5
Lod-B-IB_22	200778	0-20	0.29	2.97	15	0.4
Lod-B-IB_28	200779	0-20	0.41	0.57	2	0.3
	200780	100-120	0.38	0.72	2	0.3
Lod-B-IB_33	200781	200-220	0.3	0.81	4	0.2
	200782	290-310	0.25	2.45	18	0.3
	200783	0-20	0.34	1.32	14	0.2
	200784	100-120	0.35	1.17	13	0.3
	200785	200-220	0.36	1.25	15	0.4
	200786	300-320	0.34	1.48	15	0.4
	200787	400-420	0.33	1.39	15	0.3

Bilag D5

Sigteanalyser:

- **Fase Ia**
- **Fase Ib**

Grain Size Distribution

Geotechnical

Sample Id: LOD A1, 0-20

Lab. Id: 200203

Projekt Kystdirektoratet

Subject: 0

Date: august 2020

Executed: PS

Remarks:



GEUS

Total Weight 111,5 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	3,09	2,77	97,23
4,00	-2,00	0,19	0,17	97,06
2,80	-1,49	0,00	0,00	97,06
2,00	-1,00	0,60	0,54	96,52
1,40	-0,49	0,00	0,00	96,52
1,00	0,00	0,66	0,59	95,93
0,710	0,49	0,00	0,00	95,93
0,500	1,00	2,21	1,98	93,95
0,355	1,49	0,00	0,00	93,95
0,250	2,00	58,23	52,22	41,72
0,180	2,47	0,00	0,00	41,72
0,125	3,00	38,25	34,30	7,42
0,090	3,47	0,00	0,00	7,42
0,075	3,74	4,11	3,69	3,73
0,063	3,99	0,41	0,37	3,36
< 0,063	> 3,99	3,75	3,36	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 3,36
Sand, fine	(0,063 mm - 0,200 mm): 38,36
Sand, medium	(0,2 mm - 0,6 mm): 53,17
Sand, coarse	(0,6 mm - 2 mm): 1,63
Gravel	(> 2 mm): 3,48
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,61	0,71
16%	84%	0,34	1,58
25%	75%	0,32	1,66
40%	60%	0,29	1,80
Median 50%	50%	0,27	1,91
75%	25%	0,15	2,71
84%	16%	0,14	2,85
90%	10%	0,13	2,95
95%	5%	0,08	3,64

Moments Statistics

Mean	2,11
Sorting	0,76
Skewness	0,33
Kurtosis	1,15
Uniformity Coefficient	2,22

The analysis is executed according to DS 405.9
extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

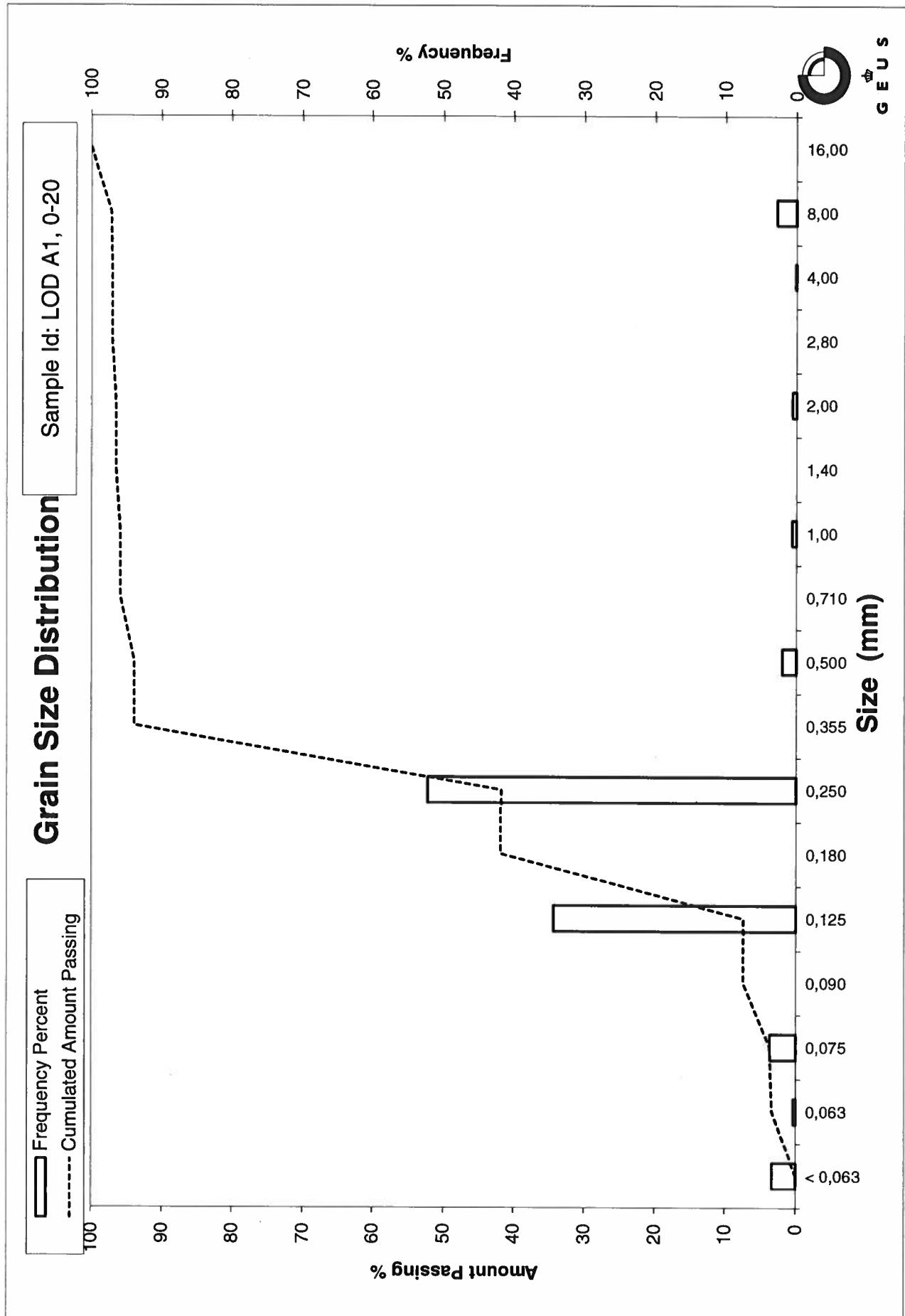
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2\phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2\phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dfg-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on
"Amount in sieve". Uniformity coefficient is based on
"Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A1, 100-120
Lab. Id: 200204
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >8mm heraf 0,68g skaller



Total Weight 1149,93 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	100,66	8,75	91,25
8,00	-3,00	263,33	22,90	68,35
4,00	-2,00	165,58	14,40	53,95
2,80	-1,49	0,00	0,00	53,95
2,00	-1,00	86,23	7,50	46,45
1,40	-0,49	0,00	0,00	46,45
1,00	0,00	50,31	4,38	42,07
0,710	0,49	0,00	0,00	42,07
0,500	1,00	62,79	5,46	36,61
0,355	1,49	0,00	0,00	36,61
0,250	2,00	246,72	21,45	15,16
0,180	2,47	0,00	0,00	15,16
0,125	3,00	135,97	11,82	3,33
0,090	3,47	0,00	0,00	3,33
0,075	3,74	14,90	1,30	2,04
0,063	3,99	2,42	0,21	1,83
< 0,063	> 3,99	21,02	1,83	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,83
Sand, fine	(0,063 mm - 0,200 mm): 13,33
Sand, medium	(0,2 mm - 0,6 mm): 24,06
Sand, coarse	(0,6 mm - 2 mm): 7,24
Gravel	(> 2 mm): 53,55
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	13,47	-3,75
25%	75%	10,32	-3,37
40%	60%	5,68	-2,51
Median 50%	50%	2,38	-1,25
75%	25%	0,30	1,75
84%	16%	0,25	1,98
90%	10%	0,16	2,68
95%	5%	0,13	2,91

Moments Statistics

Mean	-1,01
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	36,42

The analysis is executed according to DS 405.9
extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

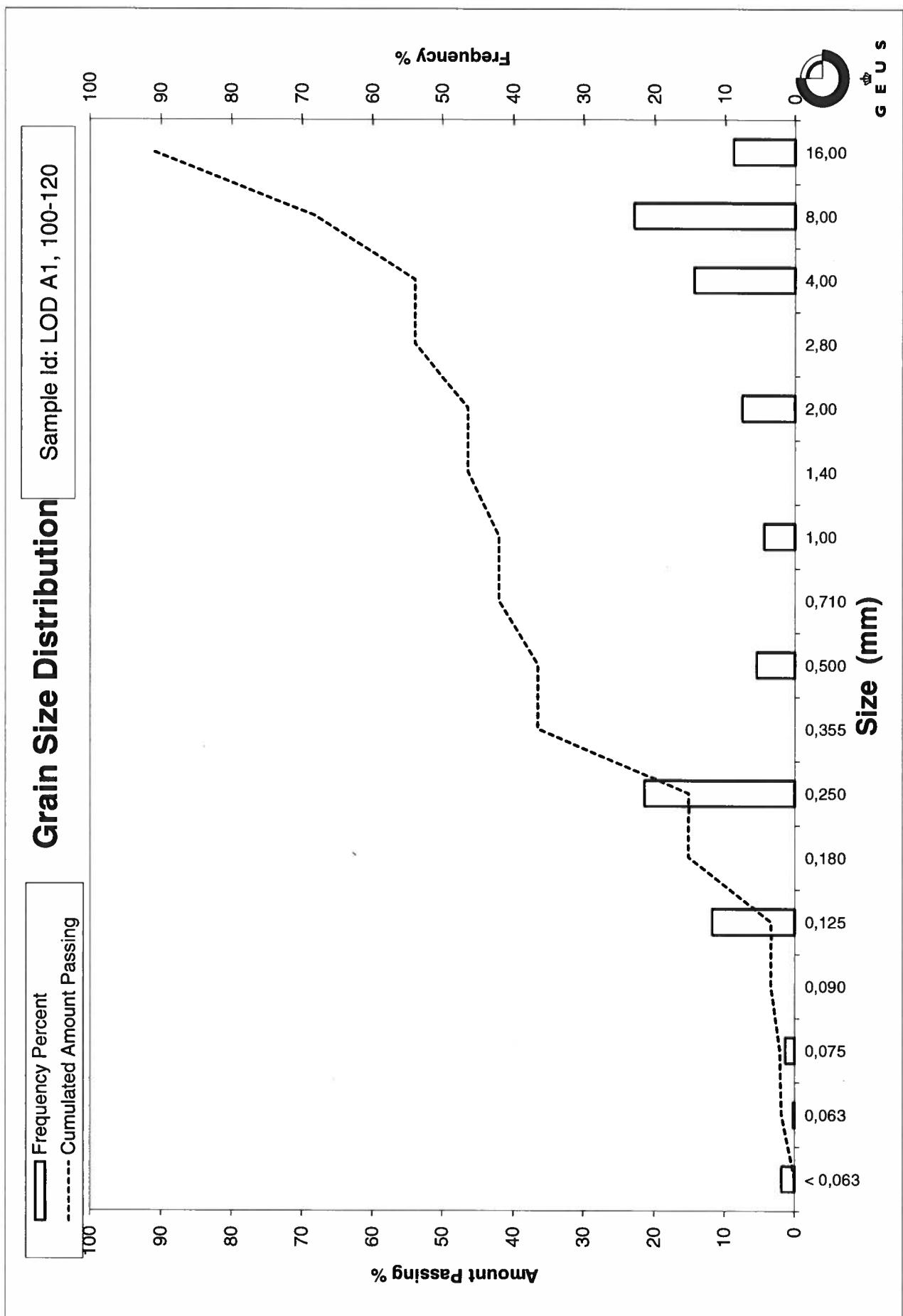
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on
"Amount in sieve". Uniformity coefficient is based on
"Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A1a, 0-20
Lab. Id: 200200
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 1068,27 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	319,81	29,94	70,06
8,00	-3,00	171,06	16,01	54,05
4,00	-2,00	101,61	9,51	44,54
2,80	-1,49	0,00	0,00	44,54
2,00	-1,00	68,38	6,40	38,14
1,40	-0,49	0,00	0,00	38,14
1,00	0,00	43,44	4,07	34,07
0,710	0,49	0,00	0,00	34,07
0,500	1,00	93,42	8,74	25,33
0,355	1,49	0,00	0,00	25,33
0,250	2,00	184,64	17,28	8,04
0,180	2,47	0,00	0,00	8,04
0,125	3,00	73,92	6,92	1,12
0,090	3,47	0,00	0,00	1,12
0,075	3,74	6,27	0,59	0,54
0,063	3,99	0,69	0,06	0,47
< 0,063	> 3,99	5,03	0,47	0,00

Gravel

Sand

Sieve Analysis

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,47
Sand, fine	(0,063 mm - 0,200 mm):	7,57
Sand, medium	(0,2 mm - 0,6 mm):	21,45
Sand, coarse	(0,6 mm - 2 mm):	8,65
Gravel	(> 2 mm):	61,86
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	-----	-----
25%	75%	-----	-----
40%	60%	10,97	-3,46
Median 50%	50%	6,30	-2,65
75%	25%	0,35	1,50
84%	16%	0,30	1,74
90%	10%	0,26	1,93
95%	5%	0,16	2,68

Moments Statistics

Mean	-0,45
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	41,90

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

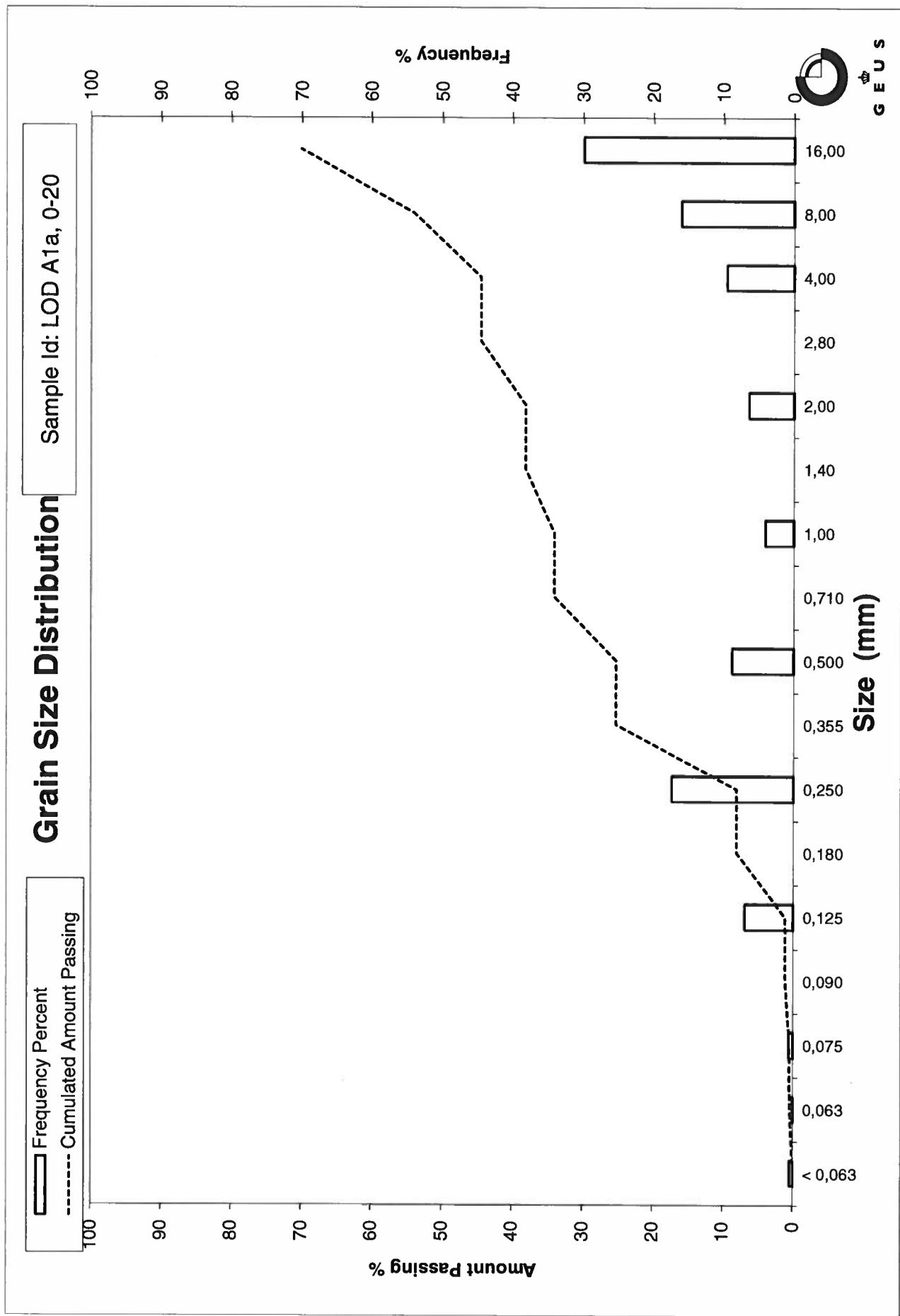
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A1a, 100-120
Lab. Id: 200201
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 110,35 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,07	0,06	99,94
0,710	0,49	0,00	0,00	99,94
0,500	1,00	0,63	0,57	99,37
0,355	1,49	0,00	0,00	99,37
0,250	2,00	47,59	43,13	56,24
0,180	2,47	0,00	0,00	56,24
0,125	3,00	55,09	49,92	6,32
0,090	3,47	0,00	0,00	6,32
0,075	3,74	3,18	2,88	3,43
0,063	3,99	0,42	0,38	3,05
< 0,063	> 3,99	3,37	3,05	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 3,05
Sand, fine	(0,063 mm - 0,200 mm): 53,19
Sand, medium	(0,2 mm - 0,6 mm): 43,40
Sand, coarse	(0,6 mm - 2 mm): 0,36
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,34	1,54
16%	84%	0,32	1,65
25%	75%	0,30	1,76
40%	60%	0,26	1,95
Median 50%	50%	0,17	2,53
75%	25%	0,15	2,78
84%	16%	0,14	2,88
90%	10%	0,13	2,95
95%	5%	0,08	3,59

Moments Statistics

Mean	2,36
Sorting	0,62
Skewness	-0,20
Kurtosis	0,82
Uniformity Coefficient	2,01

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Sample Id: LOD A1a, 100-120

Frequency Percent
Cumulated Amount Passing

100
90
80
70
60
50
40
30
20
10
0

Amount Passing %

Frequency %

10
20
30
40
50
60
70
80
90
100

16,00
8,00
4,00
2,80
2,00
1,40
1,00
0,710
0,500
0,355
0,250
0,180
0,125
0,090
0,075
0,063
< 0,063

G E U S

Size (mm)

Grain Size Distribution

Geotechnical

Sample Id: LOD A1a, 200-220
Lab. Id: 200202
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 112,41 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,02	0,02	99,98
1,40	-0,49	0,00	0,00	99,98
1,00	0,00	0,13	0,12	99,87
0,710	0,49	0,00	0,00	99,87
0,500	1,00	0,87	0,77	99,09
0,355	1,49	0,00	0,00	99,09
0,250	2,00	96,74	86,06	13,03
0,180	2,47	0,00	0,00	13,03
0,125	3,00	12,66	11,26	1,77
0,090	3,47	0,00	0,00	1,77
0,075	3,74	0,27	0,24	1,53
0,063	3,99	0,05	0,04	1,49
< 0,063	> 3,99	1,67	1,49	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,49
Sand, fine	(0,063 mm - 0,200 mm):	11,55
Sand, medium	(0,2 mm - 0,6 mm):	86,43
Sand, coarse	(0,6 mm - 2 mm):	0,52
Gravel	(> 2 mm):	0,02
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,35	1,51
16%	84%	0,34	1,57
25%	75%	0,33	1,62
40%	60%	0,31	1,70
Median 50%	50%	0,30	1,76
75%	25%	0,26	1,92
84%	16%	0,25	1,98
90%	10%	0,17	2,60
95%	5%	0,14	2,83

Moments Statistics

Mean	1,77
Sorting	0,30
Skewness	0,35
Kurtosis	1,80
Uniformity Coefficient	1,86

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

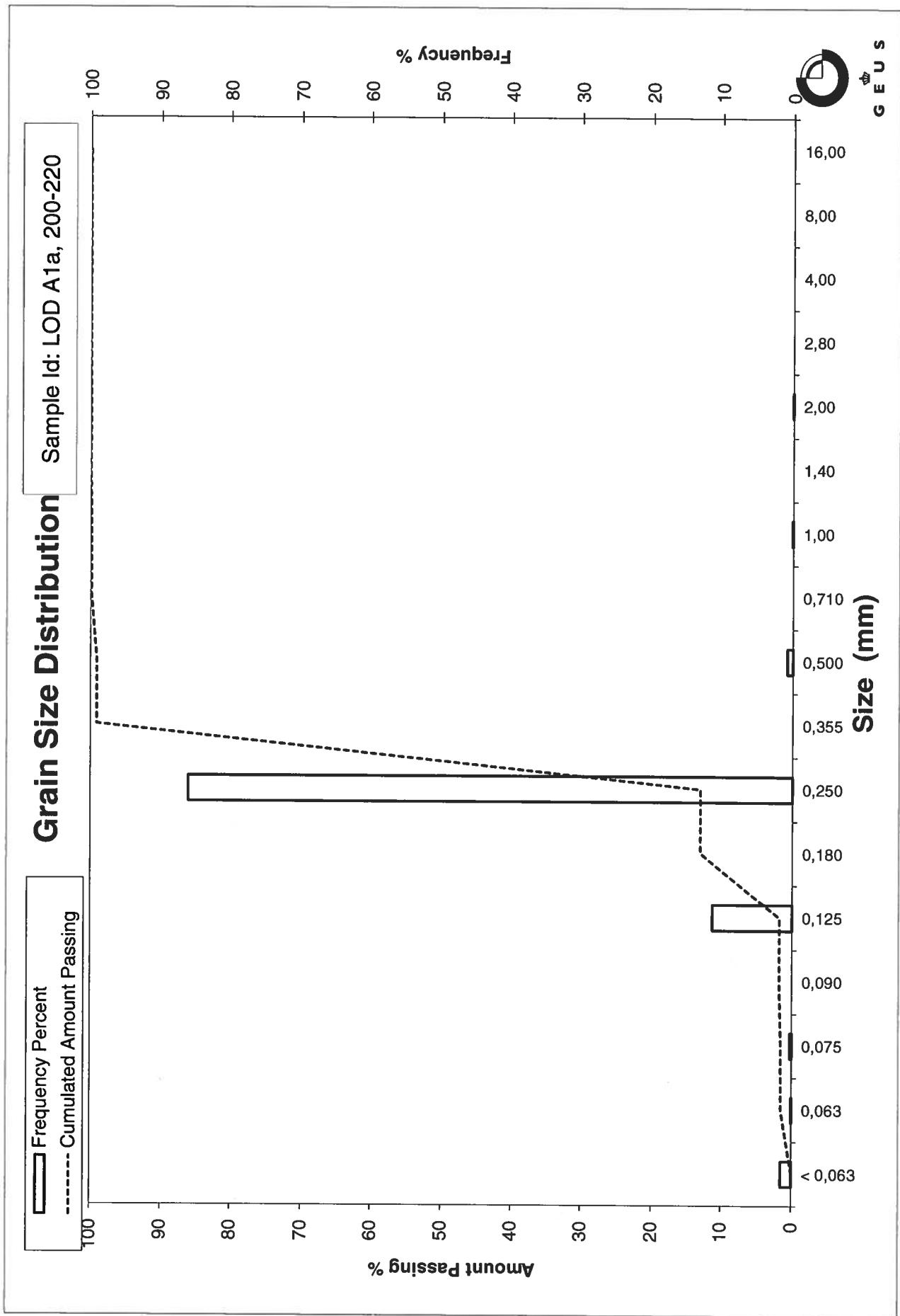
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A2, 0-20
Lab. Id: 200205
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >4mm består af skaller



Total Weight 113,92 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,24	1,97	98,03
4,00	-2,00	0,07	0,06	97,97
2,80	-1,49	0,00	0,00	97,97
2,00	-1,00	0,34	0,30	97,67
1,40	-0,49	0,00	0,00	97,67
1,00	0,00	1,62	1,42	96,25
0,710	0,49	0,00	0,00	96,25
0,500	1,00	7,92	6,95	89,30
0,355	1,49	0,00	0,00	89,30
0,250	2,00	85,68	75,21	14,09
0,180	2,47	0,00	0,00	14,09
0,125	3,00	14,33	12,58	1,51
0,090	3,47	0,00	0,00	1,51
0,075	3,74	0,49	0,43	1,08
0,063	3,99	0,01	0,01	1,07
< 0,063	> 3,99	1,22	1,07	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,07
Sand, fine	(0,063 mm - 0,200 mm): 13,02
Sand, medium	(0,2 mm - 0,6 mm): 78,52
Sand, coarse	(0,6 mm - 2 mm): 5,06
Gravel	(> 2 mm): 2,33
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,67	0,57
16%	84%	0,35	1,52
25%	75%	0,34	1,58
40%	60%	0,31	1,67
Median 50%	50%	0,30	1,74
75%	25%	0,27	1,91
84%	16%	0,25	1,98
90%	10%	0,16	2,62
95%	5%	0,14	2,83

Moments Statistics

Mean	1,75
Sorting	0,46
Skewness	0,03
Kurtosis	2,75
Uniformity Coefficient	1,94

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

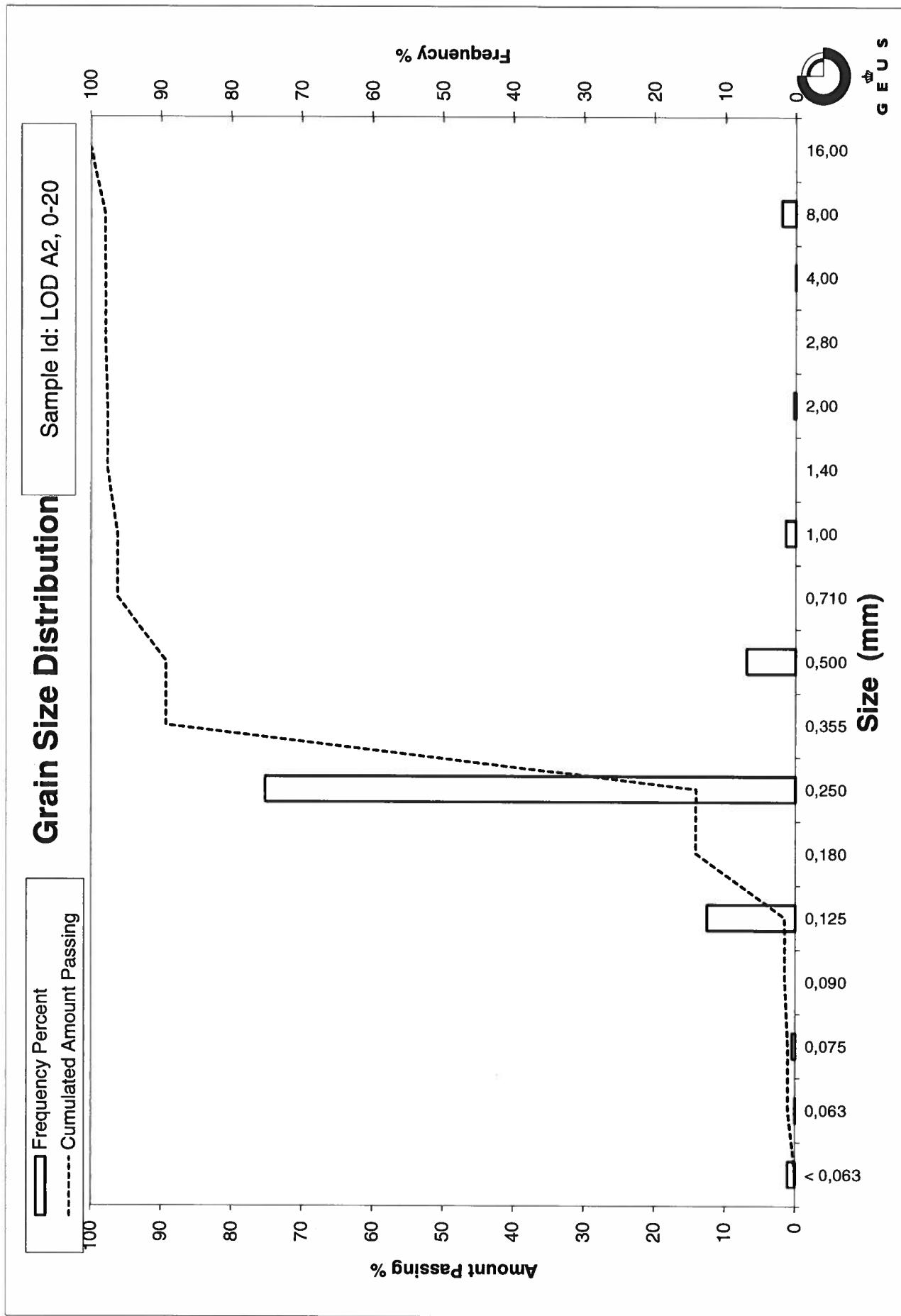
Kurtosis ($(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($(\phi 16\% + \phi 84\% - 2*\phi 50\%) / (2*(\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2*\phi 50\%) / (2*(\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient ($d60\% / d10\%$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A2, 100-120
Lab. Id: 200206
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 95,81 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,02	0,02	99,98
0,710	0,49	0,00	0,00	99,98
0,500	1,00	0,00	0,00	99,98
0,355	1,49	0,00	0,00	99,98
0,250	2,00	3,15	3,29	96,69
0,180	2,47	0,00	0,00	96,69
0,125	3,00	83,47	87,12	9,57
0,090	3,47	0,00	0,00	9,57
0,075	3,74	5,43	5,67	3,90
0,063	3,99	0,34	0,35	3,55
< 0,063	> 3,99	3,40	3,55	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 3,55
Sand, fine	(0,063 mm - 0,200 mm): 93,14
Sand, medium	(0,2 mm - 0,6 mm): 3,29
Sand, coarse	(0,6 mm - 2 mm): 0,02
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,18	2,48
16%	84%	0,17	2,54
25%	75%	0,17	2,59
40%	60%	0,16	2,67
Median 50%	50%	0,15	2,73
75%	25%	0,13	2,89
84%	16%	0,13	2,95
90%	10%	0,13	3,00
95%	5%	0,08	3,68

Moments Statistics

Mean	2,74
Sorting	0,29
Skewness	0,33
Kurtosis	1,62
Uniformity Coefficient	1,25

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

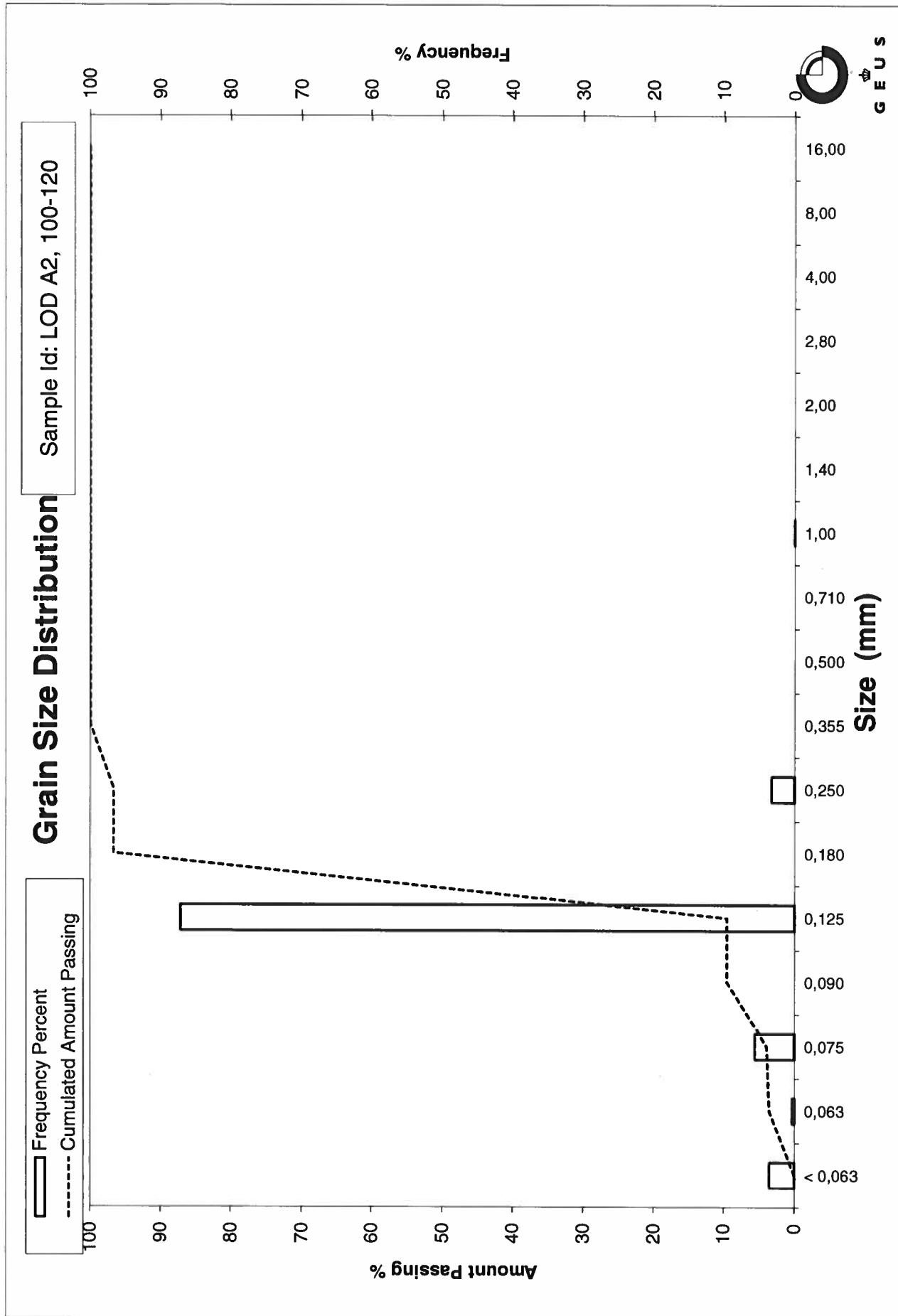
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

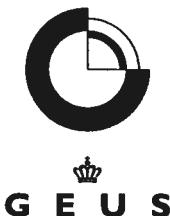
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Grain Size Distribution

Geotechnical

Sample Id: LOD A3, 0-20
Lab. Id: 200207
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >4mm heraf 0,52g skaller



Total Weight 216,53 g

Size Fractions

Size mm	size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	6,72	3,10	96,90
8,00	-3,00	19,56	9,03	87,86
4,00	-2,00	6,65	3,07	84,79
2,80	-1,49	0,00	0,00	84,79
2,00	-1,00	11,19	5,17	79,63
1,40	-0,49	0,00	0,00	79,63
1,00	0,00	24,75	11,43	68,20
0,710	0,49	0,00	0,00	68,20
0,500	1,00	46,33	21,39	46,80
0,355	1,49	0,00	0,00	46,80
0,250	2,00	84,48	39,01	7,79
0,180	2,47	0,00	0,00	7,79
0,125	3,00	14,86	6,86	0,93
0,090	3,47	0,00	0,00	0,93
0,075	3,74	0,65	0,30	0,63
0,063	3,99	0,04	0,02	0,61
< 0,063	> 3,99	1,32	0,61	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,61
Sand, fine	(0,063 mm - 0,200 mm): 7,18
Sand, medium	(0,2 mm - 0,6 mm): 49,20
Sand, coarse	(0,6 mm - 2 mm): 22,64
Gravel	(> 2 mm): 20,37
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	14,32	-3,84
16%	84%	2,68	-1,42
25%	75%	1,24	-0,31
40%	60%	0,63	0,67
Median 50%	50%	0,53	0,91
75%	25%	0,30	1,75
84%	16%	0,27	1,88
90%	10%	0,26	1,97
95%	5%	0,16	2,67

Moments Statistics

Mean	0,46
Sorting	1,81
Skewness	-0,44
Kurtosis	1,29
Uniformity Coefficient	2,46

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

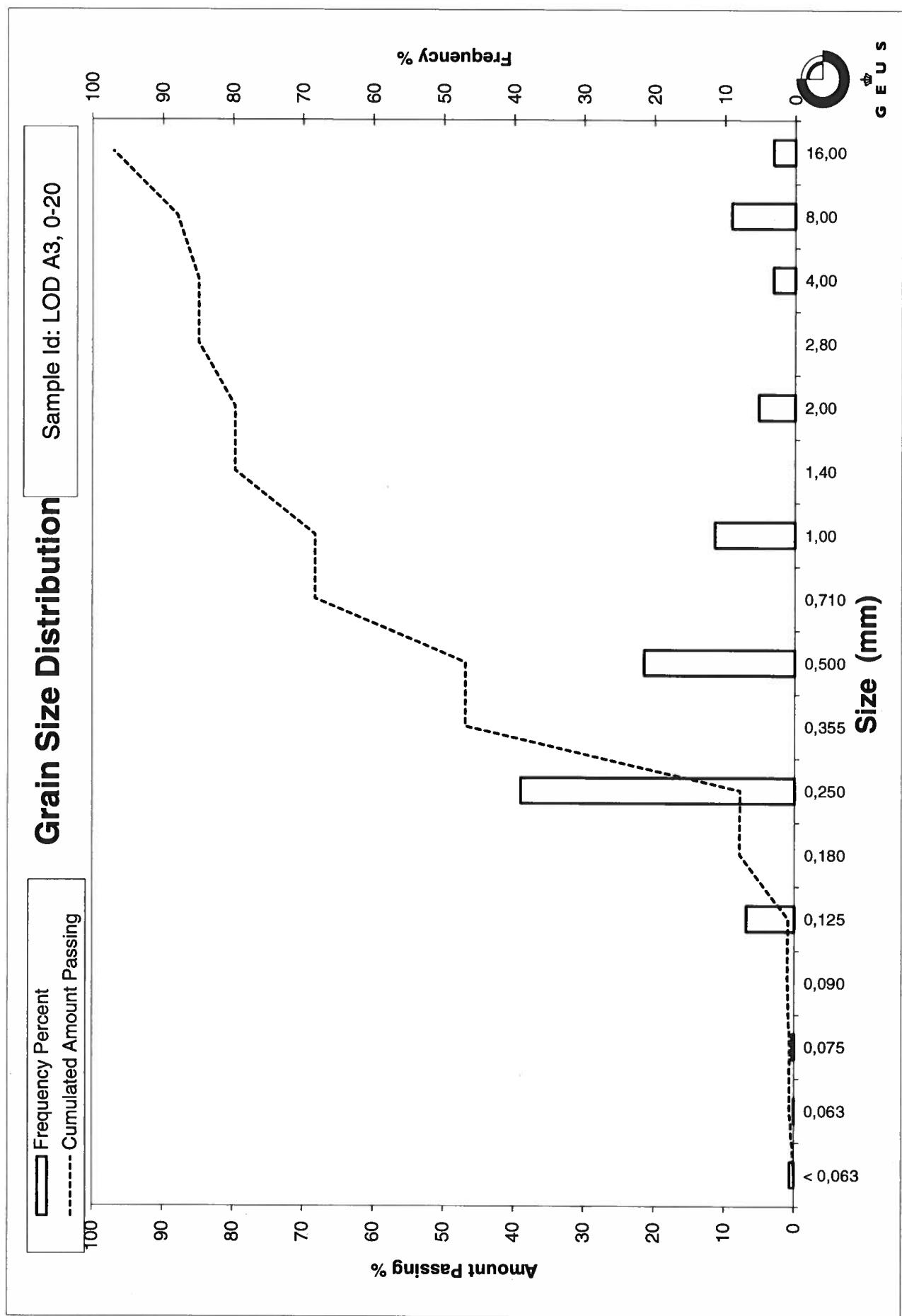
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A3, 100-120
Lab. Id: 200208
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 110,49 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,82	0,74	99,26
4,00	-2,00	0,00	0,00	99,26
2,80	-1,49	0,00	0,00	99,26
2,00	-1,00	0,81	0,73	98,52
1,40	-0,49	0,00	0,00	98,52
1,00	0,00	1,34	1,21	97,31
0,710	0,49	0,00	0,00	97,31
0,500	1,00	11,06	10,01	87,30
0,355	1,49	0,00	0,00	87,30
0,250	2,00	86,30	78,11	9,20
0,180	2,47	0,00	0,00	9,20
0,125	3,00	6,65	6,02	3,18
0,090	3,47	0,00	0,00	3,18
0,075	3,74	1,39	1,26	1,92
0,063	3,99	0,24	0,22	1,70
< 0,063	> 3,99	1,88	1,70	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,70
Sand, fine	(0,063 mm - 0,200 mm): 7,49
Sand, medium	(0,2 mm - 0,6 mm): 82,87
Sand, coarse	(0,6 mm - 2 mm): 6,46
Gravel	(> 2 mm): 1,48
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,66	0,60
16%	84%	0,35	1,51
25%	75%	0,34	1,56
40%	60%	0,32	1,65
Median 50%	50%	0,30	1,71
75%	25%	0,27	1,88
84%	16%	0,26	1,95
90%	10%	0,25	1,99
95%	5%	0,14	2,82

Moments Statistics

Mean	1,72
Sorting	0,45
Skewness	0,03
Kurtosis	2,85
Uniformity Coefficient	1,27

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

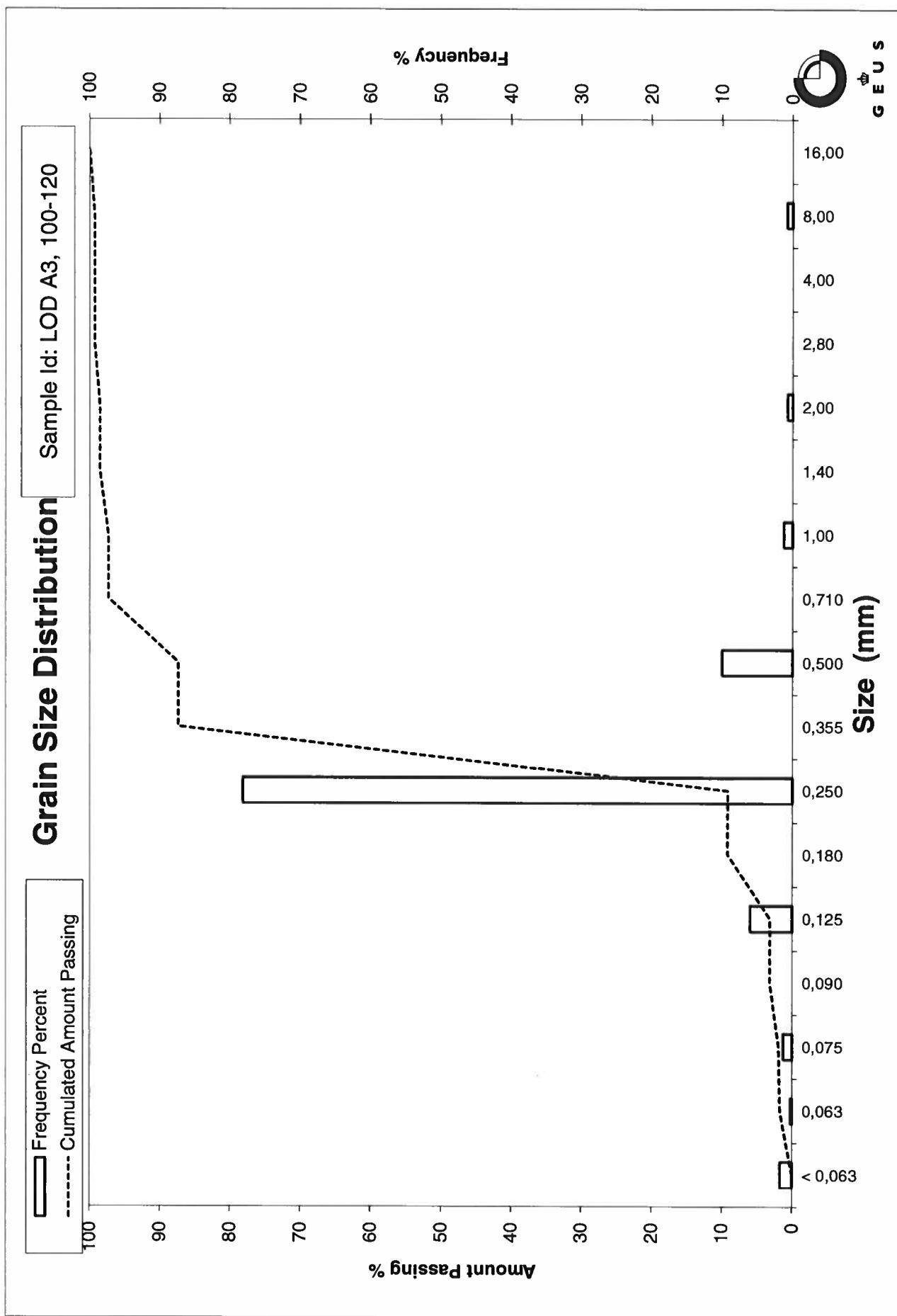
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dfg-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A3, 200-220
Lab. Id: 200209
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 1059,84 g

Size Fractions

size mm	size Φ	Weight		Cumulated amount passing %
		g	%	
16,00	-4,00	102,57	9,68	90,32
8,00	-3,00	207,39	19,57	70,75
4,00	-2,00	141,18	13,32	57,43
2,80	-1,49	0,00	0,00	57,43
2,00	-1,00	109,93	10,37	47,06
1,40	-0,49	0,00	0,00	47,06
1,00	0,00	95,33	9,00	38,07
0,710	0,49	0,00	0,00	38,07
0,500	1,00	210,60	19,87	18,19
0,355	1,49	0,00	0,00	18,19
0,250	2,00	130,22	12,29	5,91
0,180	2,47	0,00	0,00	5,91
0,125	3,00	23,80	2,25	3,66
0,090	3,47	0,00	0,00	3,66
0,075	3,74	20,87	1,97	1,69
0,063	3,99	2,46	0,23	1,46
< 0,063	> 3,99	15,48	1,46	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,46
Sand, fine	(0,063 mm - 0,200 mm): 4,45
Sand, medium	(0,2 mm - 0,6 mm): 21,75
Sand, coarse	(0,6 mm - 2 mm): 19,40
Gravel	(> 2 mm): 52,94
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	13,42	-3,75
25%	75%	9,74	-3,28
40%	60%	4,77	-2,25
Median 50%	50%	2,23	-1,15
75%	25%	0,57	0,81
84%	16%	0,34	1,57
90%	10%	0,28	1,81
95%	5%	0,16	2,66

Moments Statistics

Mean	-1,11
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	16,74

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

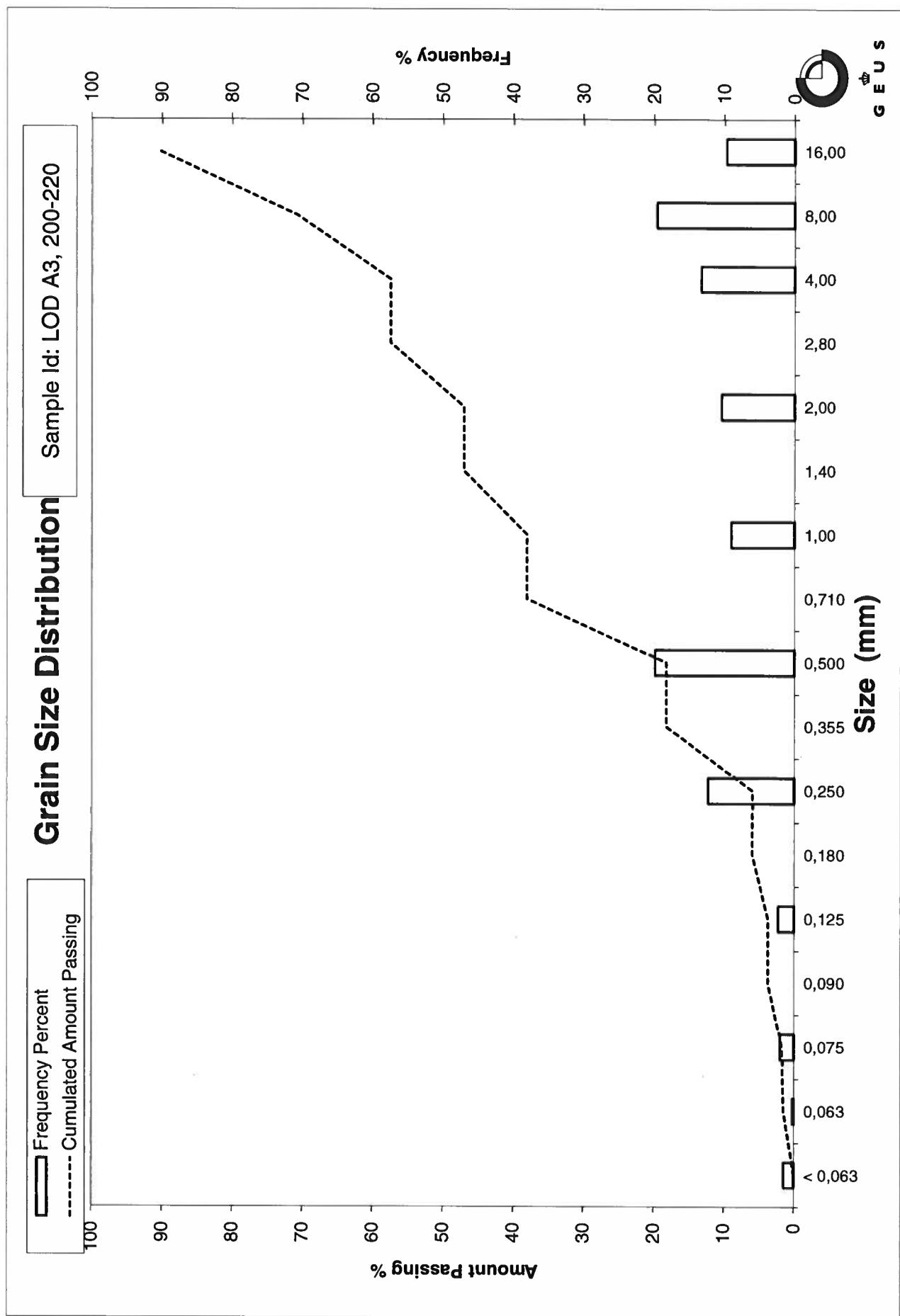
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A3, 290-310

Lab. Id: 200210

Projekt Kystdirektoratet

Subject: 0

Date: august 2020

Executed: PS

Remarks:



GEUS

Total Weight 763,39 g

Size Fractions

		Gravel		Sand	
--	--	--------	--	------	--

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	79,80	10,45	89,55
8,00	-3,00	112,29	14,71	74,84
4,00	-2,00	100,76	13,20	61,64
2,80	-1,49	0,00	0,00	61,64
2,00	-1,00	75,46	9,88	51,75
1,40	-0,49	0,00	0,00	51,75
1,00	0,00	69,87	9,15	42,60
0,710	0,49	0,00	0,00	42,60
0,500	1,00	118,22	15,49	27,12
0,355	1,49	0,00	0,00	27,12
0,250	2,00	160,69	21,05	6,07
0,180	2,47	0,00	0,00	6,07
0,125	3,00	33,63	4,40	1,66
0,090	3,47	0,00	0,00	1,66
0,075	3,74	4,60	0,60	1,06
0,063	3,99	0,64	0,08	0,98
< 0,063	> 3,99	7,45	0,98	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,98
Sand, fine	(0,063 mm - 0,200 mm): 5,09
Sand, medium	(0,2 mm - 0,6 mm): 28,42
Sand, coarse	(0,6 mm - 2 mm): 17,26
Gravel	(> 2 mm): 48,25
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	12,98	-3,70
25%	75%	8,09	-3,02
40%	60%	2,67	-1,42
Median 50%	50%	1,32	-0,40
75%	25%	0,34	1,54
84%	16%	0,30	1,74
90%	10%	0,27	1,89
95%	5%	0,17	2,58

Moments Statistics

Mean	-0,79
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	9,89

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

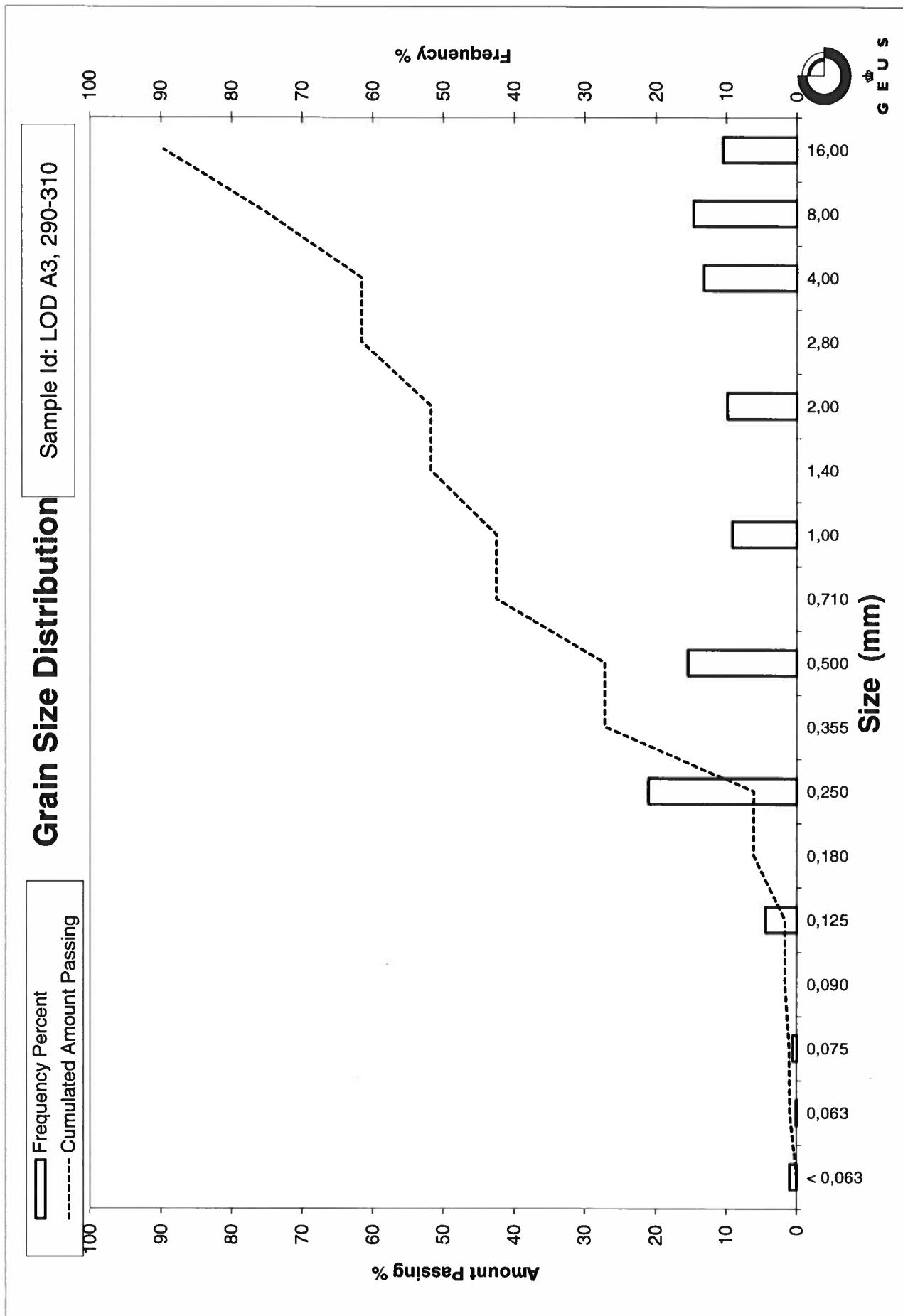
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2*\phi_{50\%}) / (2*(\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2*\phi_{50\%}) / (2*(\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A3, 400-420
Lab. Id: 200211
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 1108,07 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	79,19	7,15	92,85
8,00	-3,00	148,07	13,36	79,49
4,00	-2,00	124,29	11,22	68,27
2,80	-1,49	0,00	0,00	68,27
2,00	-1,00	108,88	9,83	58,45
1,40	-0,49	0,00	0,00	58,45
1,00	0,00	83,48	7,53	50,91
0,710	0,49	0,00	0,00	50,91
0,500	1,00	167,42	15,11	35,81
0,355	1,49	0,00	0,00	35,81
0,250	2,00	318,83	28,77	7,03
0,180	2,47	0,00	0,00	7,03
0,125	3,00	58,61	5,29	1,74
0,090	3,47	0,00	0,00	1,74
0,075	3,74	4,03	0,36	1,38
0,063	3,99	0,73	0,07	1,31
< 0,063	> 3,99	14,55	1,31	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,31
Sand, fine	(0,063 mm - 0,200 mm):	5,72
Sand, medium	(0,2 mm - 0,6 mm):	35,97
Sand, coarse	(0,6 mm - 2 mm):	15,45
Gravel	(> 2 mm):	41,55
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	10,70	-3,42
25%	75%	6,40	-2,68
40%	60%	2,13	-1,09
Median 50%	50%	0,70	0,52
75%	25%	0,32	1,66
84%	16%	0,28	1,82
90%	10%	0,26	1,94
95%	5%	0,16	2,65

Moments Statistics

Mean	-0,36
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	8,15

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

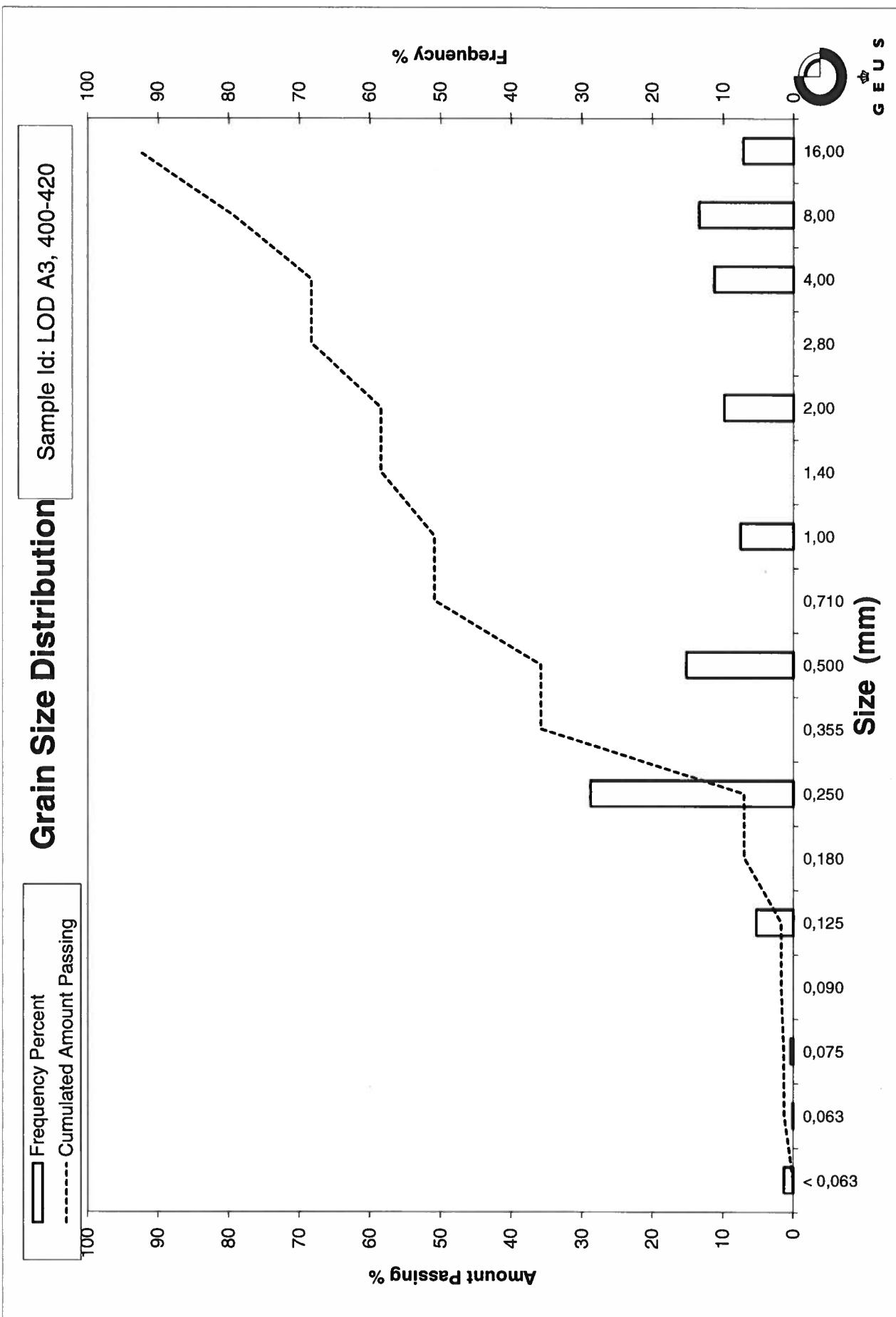
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A4, 0-20
Lab. Id: 200163
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 957,7 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	112,79	11,78	88,22
8,00	-3,00	78,91	8,24	79,98
4,00	-2,00	56,78	5,93	74,05
2,80	-1,49	0,00	0,00	74,05
2,00	-1,00	61,28	6,40	67,66
1,40	-0,49	0,00	0,00	67,66
1,00	0,00	55,05	5,75	61,91
0,710	0,49	0,00	0,00	61,91
0,500	1,00	205,37	21,44	40,47
0,355	1,49	0,00	0,00	40,47
0,250	2,00	331,17	34,58	5,89
0,180	2,47	0,00	0,00	5,89
0,125	3,00	46,74	4,88	1,00
0,090	3,47	0,00	0,00	1,00
0,075	3,74	1,25	0,13	0,87
0,063	3,99	0,14	0,01	0,86
< 0,063	> 3,99	8,24	0,86	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,86
Sand, fine	(0,063 mm - 0,200 mm): 5,02
Sand, medium	(0,2 mm - 0,6 mm): 44,79
Sand, coarse	(0,6 mm - 2 mm): 16,98
Gravel	(> 2 mm): 32,34
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	11,90	-3,57
25%	75%	4,64	-2,21
40%	60%	0,69	0,53
Median 50%	50%	0,59	0,75
75%	25%	0,31	1,70
84%	16%	0,28	1,83
90%	10%	0,26	1,93
95%	5%	0,17	2,56

Moments Statistics

Mean	-0,33
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	2,63

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6 \text{ (Folk and Ward 1957)}$$

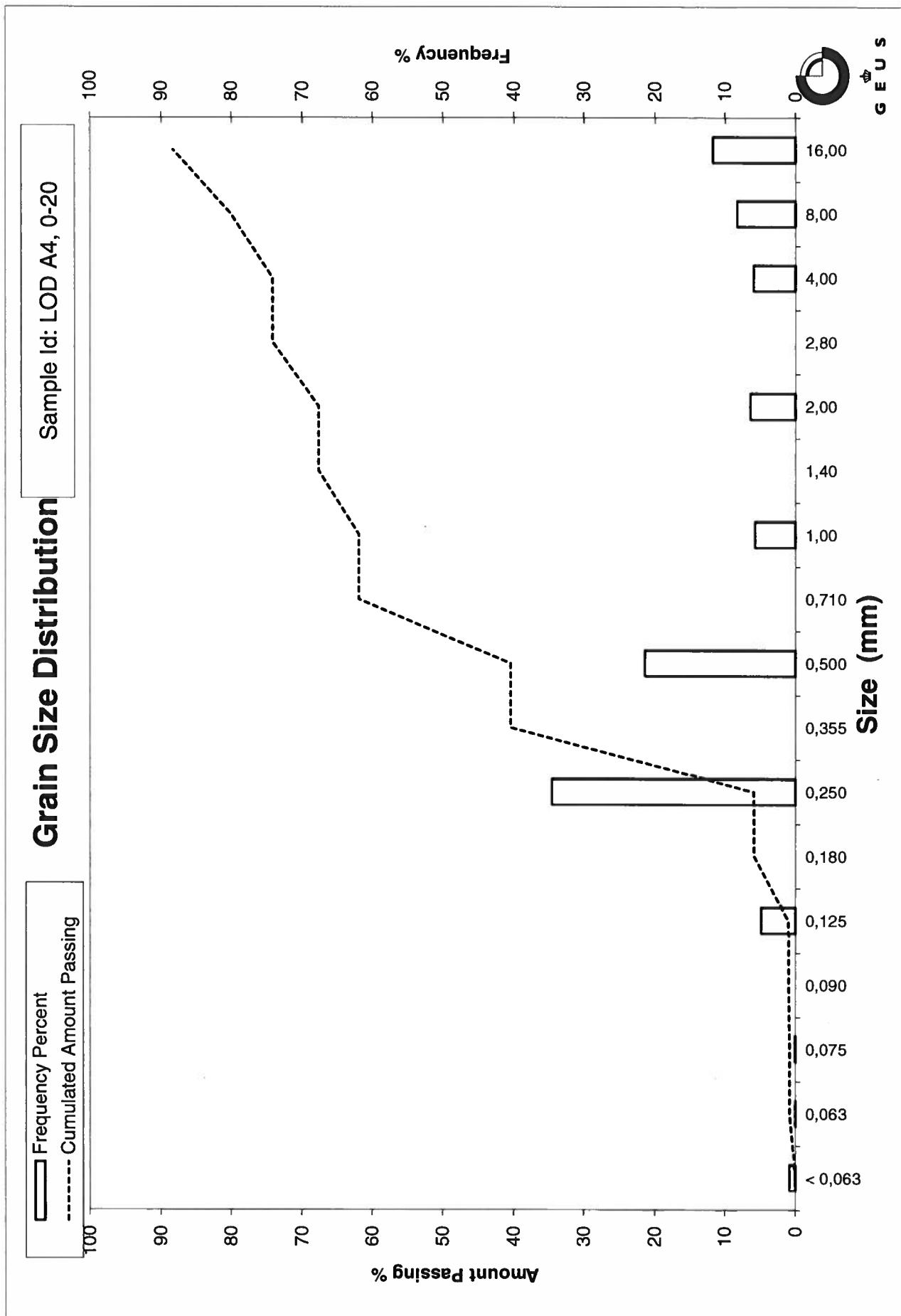
$$\text{Kurtosis } (\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A4, 100-120
Lab. Id: 200164
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 859,59 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	22,47	2,61	97,39
8,00	-3,00	57,01	6,63	90,75
4,00	-2,00	44,83	5,22	85,54
2,80	-1,49	0,00	0,00	85,54
2,00	-1,00	37,30	4,34	81,20
1,40	-0,49	0,00	0,00	81,20
1,00	0,00	63,26	7,36	73,84
0,710	0,49	0,00	0,00	73,84
0,500	1,00	156,57	18,21	55,63
0,355	1,49	0,00	0,00	55,63
0,250	2,00	318,74	37,08	18,54
0,180	2,47	0,00	0,00	18,54
0,125	3,00	142,25	16,55	2,00
0,090	3,47	0,00	0,00	2,00
0,075	3,74	3,28	0,38	1,61
0,063	3,99	0,15	0,02	1,60
< 0,063	> 3,99	13,73	1,60	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,60
Sand, fine	(0,063 mm - 0,200 mm):	16,95
Sand, medium	(0,2 mm - 0,6 mm):	45,75
Sand, coarse	(0,6 mm - 2 mm):	16,90
Gravel	(> 2 mm):	18,80
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	13,12	-3,71
16%	84%	2,52	-1,33
25%	75%	1,06	-0,09
40%	60%	0,55	0,86
Median 50%	50%	0,34	1,56
75%	25%	0,27	1,90
84%	16%	0,17	2,54
90%	10%	0,15	2,72
95%	5%	0,13	2,89

Moments Statistics

Mean	0,92
Sorting	1,97
Skewness	-0,55
Kurtosis	1,36
Uniformity Coefficient	3,63

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

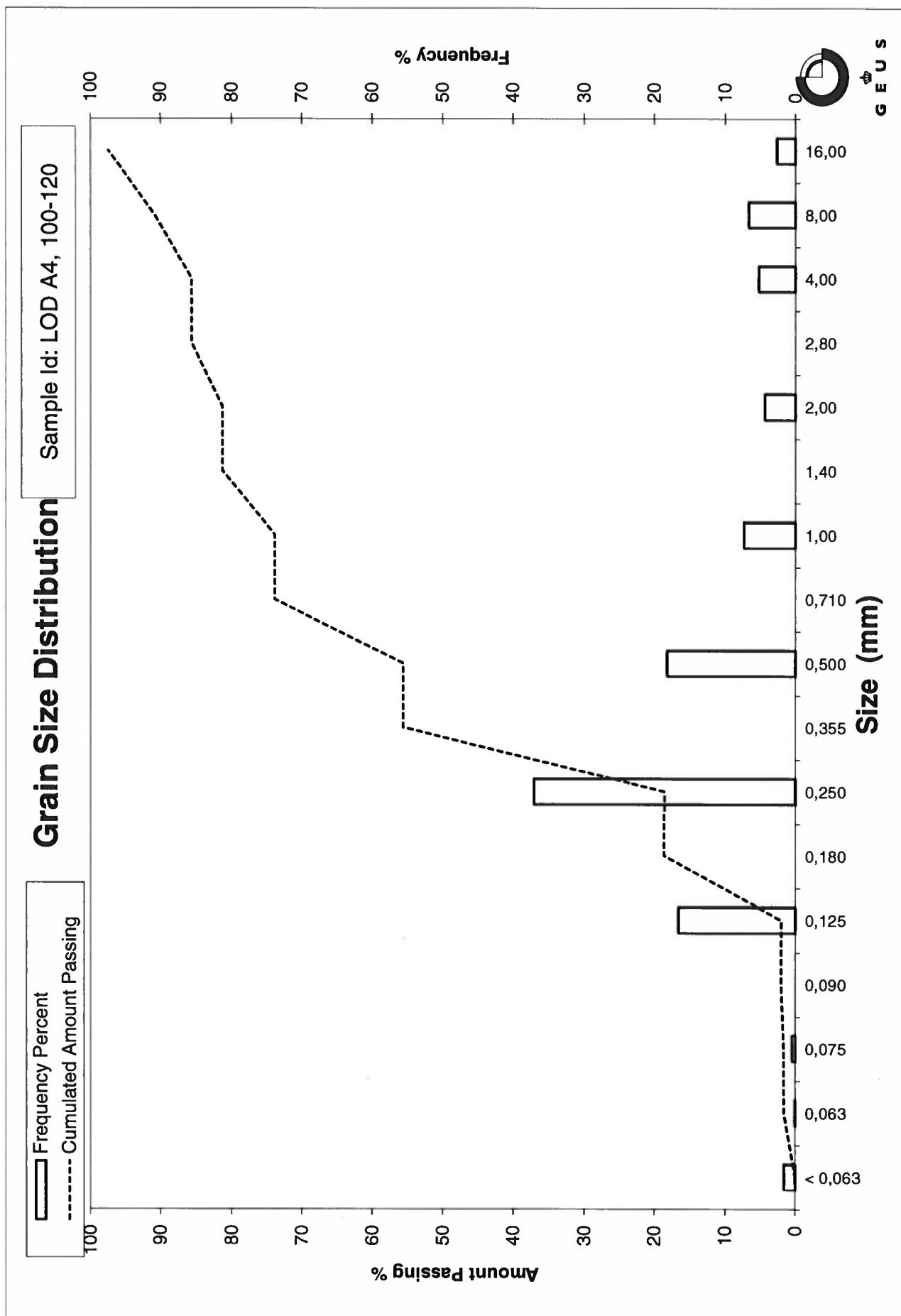
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A4, 200-220
Lab. Id: 200165
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 129,57 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,99	0,76	99,24
2,80	-1,49	0,00	0,00	99,24
2,00	-1,00	0,54	0,42	98,82
1,40	-0,49	0,00	0,00	98,82
1,00	0,00	0,62	0,48	98,34
0,710	0,49	0,00	0,00	98,34
0,500	1,00	14,98	11,56	86,78
0,355	1,49	0,00	0,00	86,78
0,250	2,00	88,78	68,52	18,26
0,180	2,47	0,00	0,00	18,26
0,125	3,00	20,55	15,86	2,40
0,090	3,47	0,00	0,00	2,40
0,075	3,74	0,83	0,64	1,76
0,063	3,99	0,09	0,07	1,69
< 0,063	> 3,99	2,19	1,69	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,69
Sand, fine	(0,063 mm - 0,200 mm):	16,57
Sand, medium	(0,2 mm - 0,6 mm):	74,02
Sand, coarse	(0,6 mm - 2 mm):	6,53
Gravel	(> 2 mm):	1,18
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,65	0,62
16%	84%	0,35	1,51
25%	75%	0,34	1,57
40%	60%	0,31	1,67
Median 50%	50%	0,30	1,74
75%	25%	0,26	1,94
84%	16%	0,17	2,54
90%	10%	0,15	2,72
95%	5%	0,13	2,90

Moments Statistics

Mean	1,93
Sorting	0,60
Skewness	0,28
Kurtosis	2,51
Uniformity Coefficient	2,07

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

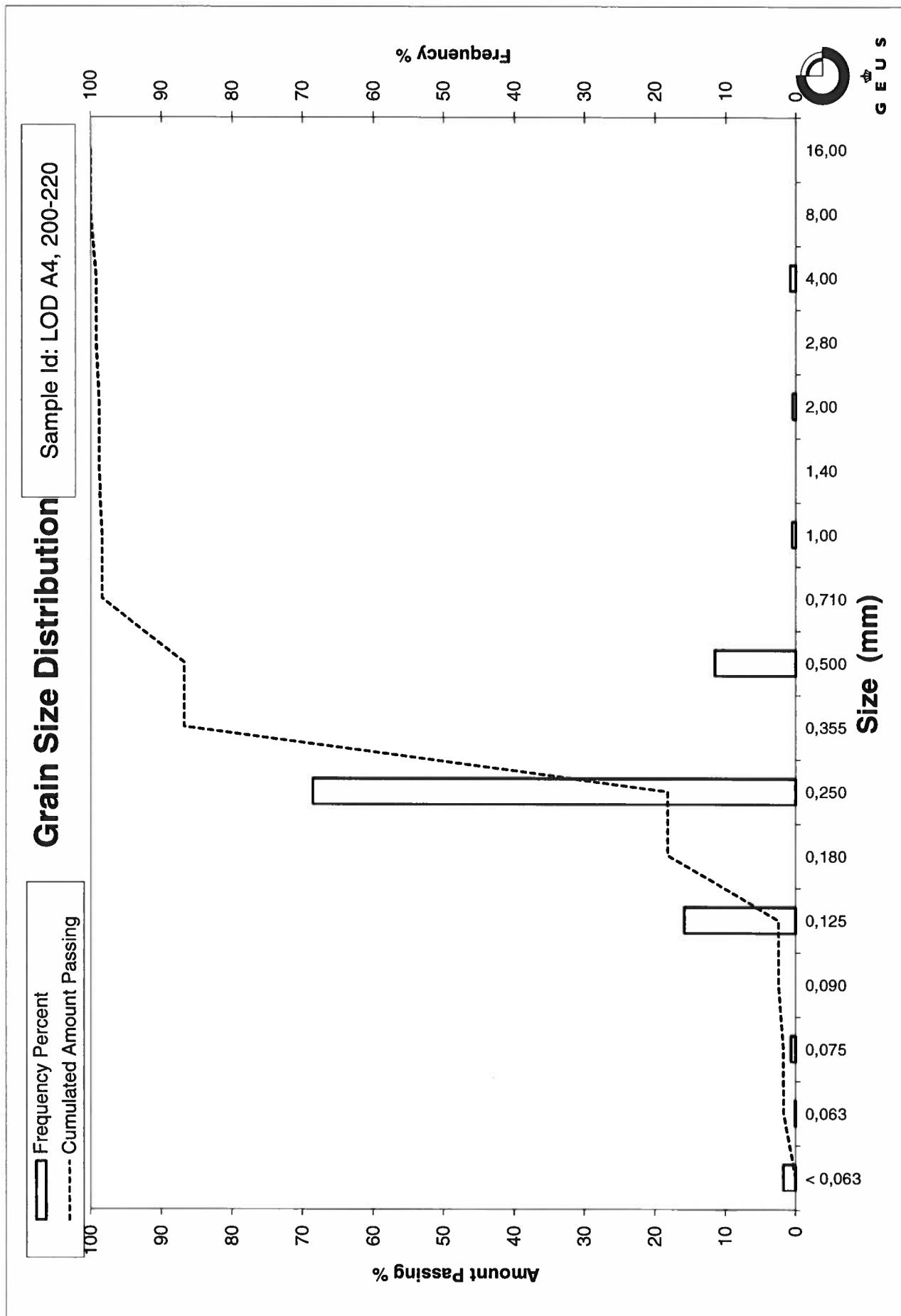
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A4, 300-320
Lab. Id: 200166
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 136,72 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,75	0,55	99,45
2,80	-1,49	0,00	0,00	99,45
2,00	-1,00	1,46	1,07	98,38
1,40	-0,49	0,00	0,00	98,38
1,00	0,00	3,35	2,45	95,93
0,710	0,49	0,00	0,00	95,93
0,500	1,00	21,34	15,61	80,32
0,355	1,49	0,00	0,00	80,32
0,250	2,00	85,31	62,40	17,93
0,180	2,47	0,00	0,00	17,93
0,125	3,00	21,51	15,73	2,19
0,090	3,47	0,00	0,00	2,19
0,075	3,74	1,00	0,73	1,46
0,063	3,99	0,07	0,05	1,41
< 0,063	> 3,99	1,93	1,41	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,41
Sand, fine	(0,063 mm - 0,200 mm):	16,52
Sand, medium	(0,2 mm - 0,6 mm):	69,83
Sand, coarse	(0,6 mm - 2 mm):	10,63
Gravel	(> 2 mm):	1,62
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,70	0,52
16%	84%	0,55	0,86
25%	75%	0,35	1,53
40%	60%	0,32	1,64
Median 50%	50%	0,30	1,72
75%	25%	0,26	1,93
84%	16%	0,17	2,53
90%	10%	0,15	2,72
95%	5%	0,13	2,89

Moments Statistics

Mean	1,70
Sorting	0,78
Skewness	-0,02
Kurtosis	2,42
Uniformity Coefficient	2,11

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

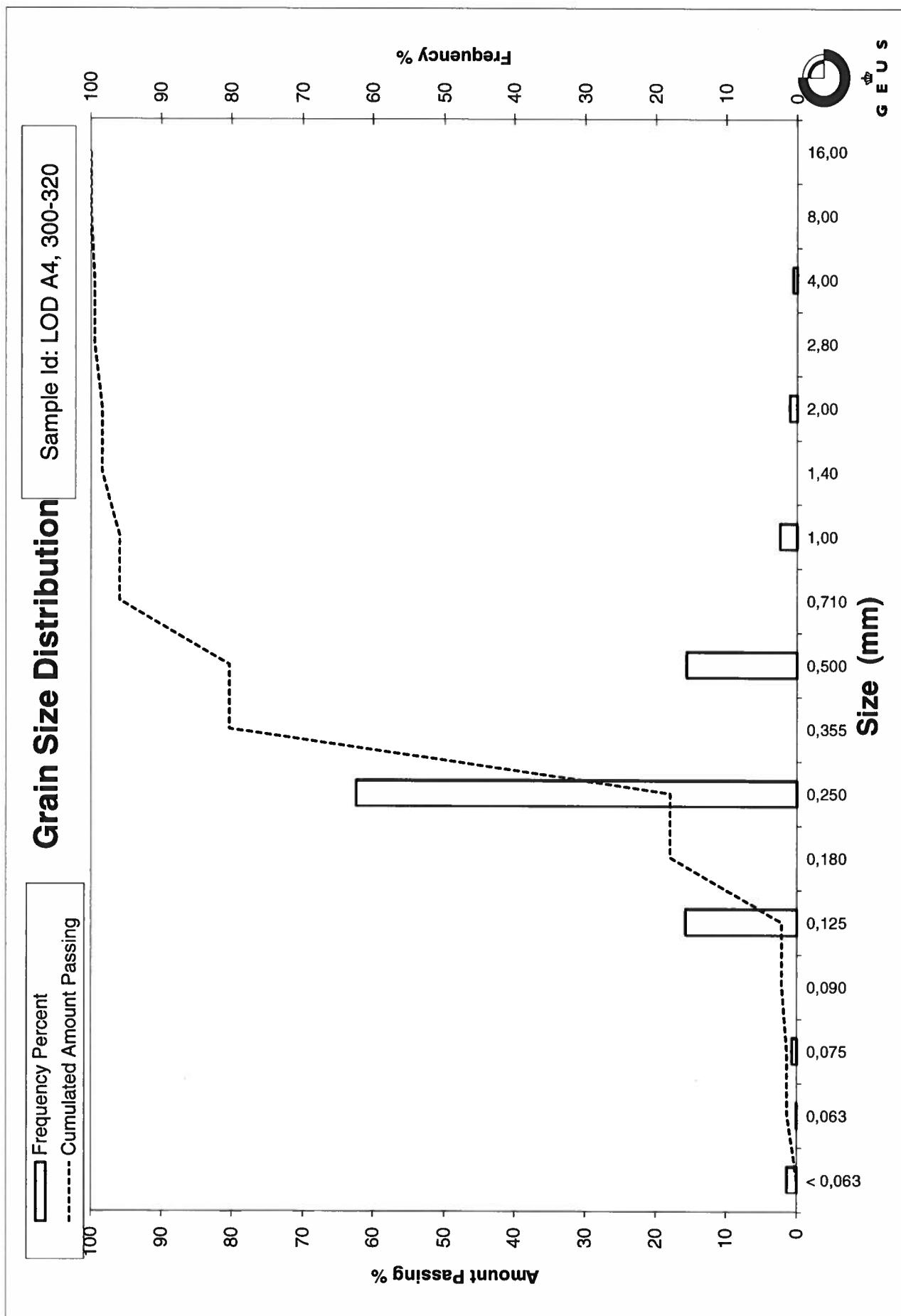
Kurtosis ($(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A4, 380-400
Lab. Id: 200167
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 133,92 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,25	0,19	99,81
1,40	-0,49	0,00	0,00	99,81
1,00	0,00	0,22	0,16	99,65
0,710	0,49	0,00	0,00	99,65
0,500	1,00	7,08	5,29	94,36
0,355	1,49	0,00	0,00	94,36
0,250	2,00	98,65	73,66	20,70
0,180	2,47	0,00	0,00	20,70
0,125	3,00	24,99	18,66	2,04
0,090	3,47	0,00	0,00	2,04
0,075	3,74	1,48	1,11	0,93
0,063	3,99	0,04	0,03	0,90
< 0,063	> 3,99	1,21	0,90	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,90
Sand, fine	(0,063 mm - 0,200 mm):	19,80
Sand, medium	(0,2 mm - 0,6 mm):	76,18
Sand, coarse	(0,6 mm - 2 mm):	2,93
Gravel	(> 2 mm):	0,19
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,53	0,93
16%	84%	0,34	1,56
25%	75%	0,33	1,61
40%	60%	0,31	1,71
Median 50%	50%	0,29	1,78
75%	25%	0,26	1,97
84%	16%	0,17	2,59
90%	10%	0,15	2,75
95%	5%	0,13	2,90

Moments Statistics

Mean	1,97
Sorting	0,56
Skewness	0,36
Kurtosis	2,28
Uniformity Coefficient	2,06

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

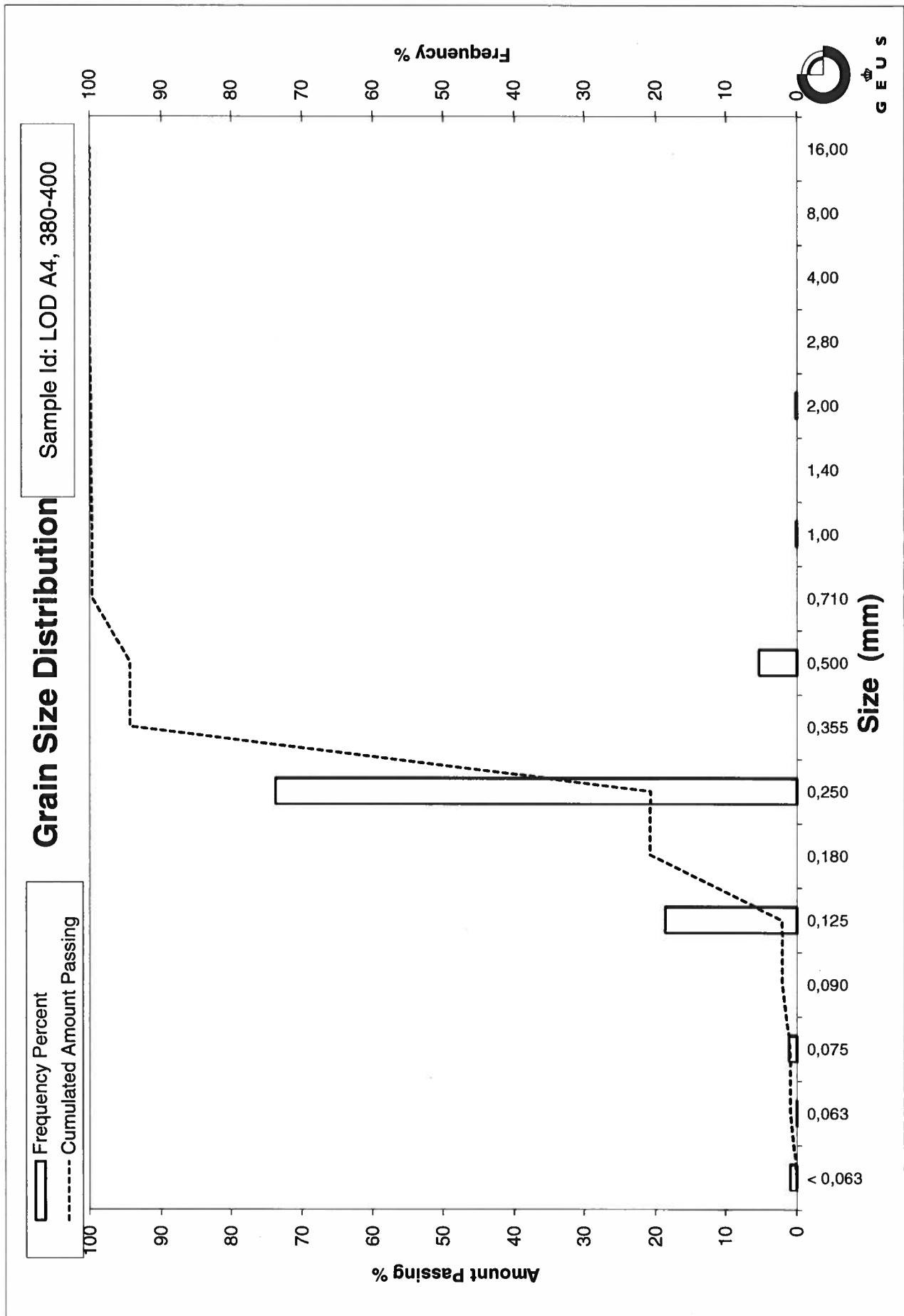
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A5, 0-20
Lab. Id: 200168
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >8mm heraf 0,10g skaller



Total Weight 137,89 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,82	1,32	98,68
4,00	-2,00	1,96	1,42	97,26
2,80	-1,49	0,00	0,00	97,26
2,00	-1,00	2,89	2,10	95,16
1,40	-0,49	0,00	0,00	95,16
1,00	0,00	3,99	2,89	92,27
0,710	0,49	0,00	0,00	92,27
0,500	1,00	17,67	12,81	79,45
0,355	1,49	0,00	0,00	79,45
0,250	2,00	89,03	64,57	14,89
0,180	2,47	0,00	0,00	14,89
0,125	3,00	18,81	13,64	1,25
0,090	3,47	0,00	0,00	1,25
0,075	3,74	0,38	0,28	0,97
0,063	3,99	0,00	0,00	0,97
< 0,063	> 3,99	1,34	0,97	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,97
Sand, fine	(0,063 mm - 0,200 mm):	13,92
Sand, medium	(0,2 mm - 0,6 mm):	70,67
Sand, coarse	(0,6 mm - 2 mm):	9,61
Gravel	(> 2 mm):	4,84
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	1,38	-0,46
16%	84%	0,57	0,80
25%	75%	0,35	1,52
40%	60%	0,32	1,63
Median 50%	50%	0,31	1,70
75%	25%	0,27	1,91
84%	16%	0,25	1,99
90%	10%	0,16	2,64
95%	5%	0,14	2,84

Moments Statistics

Mean	1,50
Sorting	0,80
Skewness	-0,42
Kurtosis	3,52
Uniformity Coefficient	2,02

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6 \text{ (Folk and Ward 1957)}$$

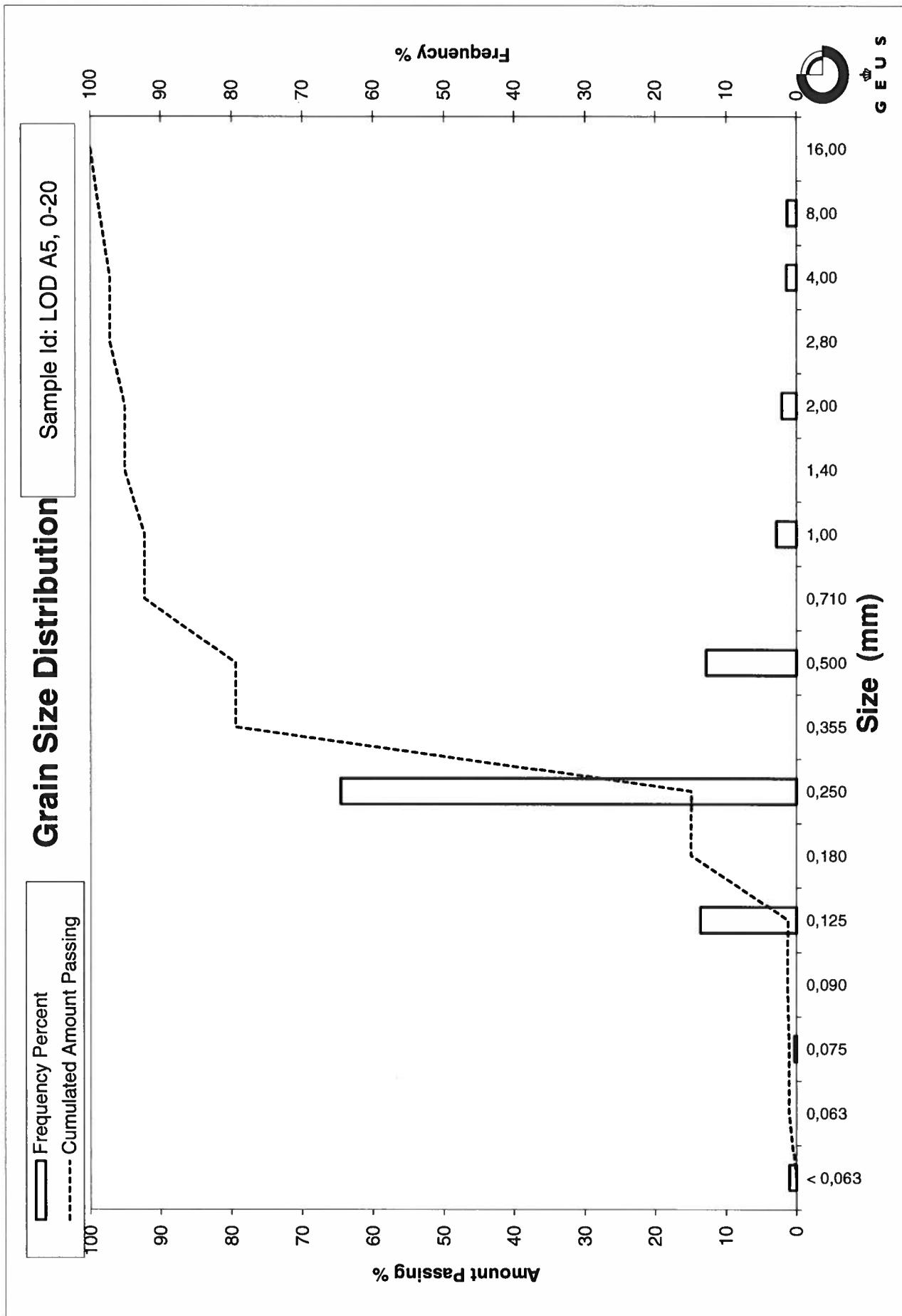
$$\text{Kurtosis } (\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A5, 100-120
Lab. Id: 200169
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 128,89 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,00	0,00	100,00
0,710	0,49	0,00	0,00	100,00
0,500	1,00	0,98	0,76	99,24
0,355	1,49	0,00	0,00	99,24
0,250	2,00	110,97	86,10	13,14
0,180	2,47	0,00	0,00	13,14
0,125	3,00	15,97	12,39	0,75
0,090	3,47	0,00	0,00	0,75
0,075	3,74	0,23	0,18	0,57
0,063	3,99	0,02	0,02	0,56
< 0,063	> 3,99	0,72	0,56	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,56
Sand, fine	(0,063 mm - 0,200 mm):	12,58
Sand, medium	(0,2 mm - 0,6 mm):	86,46
Sand, coarse	(0,6 mm - 2 mm):	0,40
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,35	1,52
16%	84%	0,34	1,57
25%	75%	0,33	1,62
40%	60%	0,31	1,70
Median 50%	50%	0,29	1,76
75%	25%	0,26	1,92
84%	16%	0,25	1,98
90%	10%	0,17	2,59
95%	5%	0,14	2,80

Moments Statistics

Mean	1,77
Sorting	0,30
Skewness	0,34
Kurtosis	1,76
Uniformity Coefficient	1,85

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

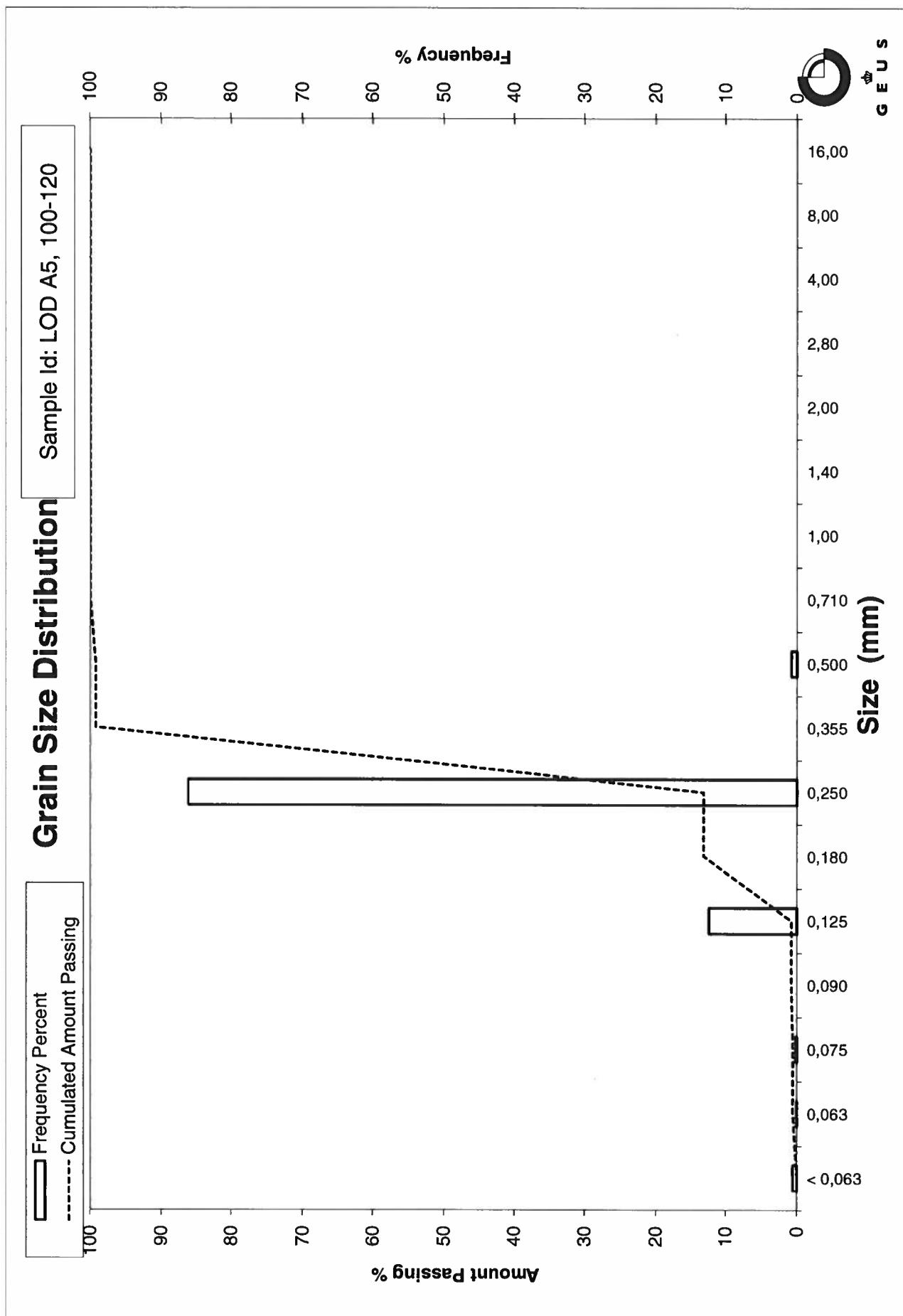
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dfg-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A5, 200-220
Lab. Id: 200170
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 130,56 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,00	0,00	100,00
0,710	0,49	0,00	0,00	100,00
0,500	1,00	3,63	2,78	97,22
0,355	1,49	0,00	0,00	97,22
0,250	2,00	117,74	90,18	7,04
0,180	2,47	0,00	0,00	7,04
0,125	3,00	8,22	6,30	0,74
0,090	3,47	0,00	0,00	0,74
0,075	3,74	0,15	0,11	0,63
0,063	3,99	0,00	0,00	0,63
< 0,063	> 3,99	0,82	0,63	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,63
Sand, fine	(0,063 mm - 0,200 mm): 6,41
Sand, medium	(0,2 mm - 0,6 mm): 91,50
Sand, coarse	(0,6 mm - 2 mm): 1,46
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,35	1,50
16%	84%	0,34	1,56
25%	75%	0,33	1,60
40%	60%	0,31	1,68
Median 50%	50%	0,30	1,74
75%	25%	0,27	1,88
84%	16%	0,26	1,94
90%	10%	0,25	1,98
95%	5%	0,16	2,62

Moments Statistics

Mean	1,75
Sorting	0,27
Skewness	0,33
Kurtosis	1,63
Uniformity Coefficient	1,23

The analysis is executed according to DS 405.9
extended by sieves to the ½ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

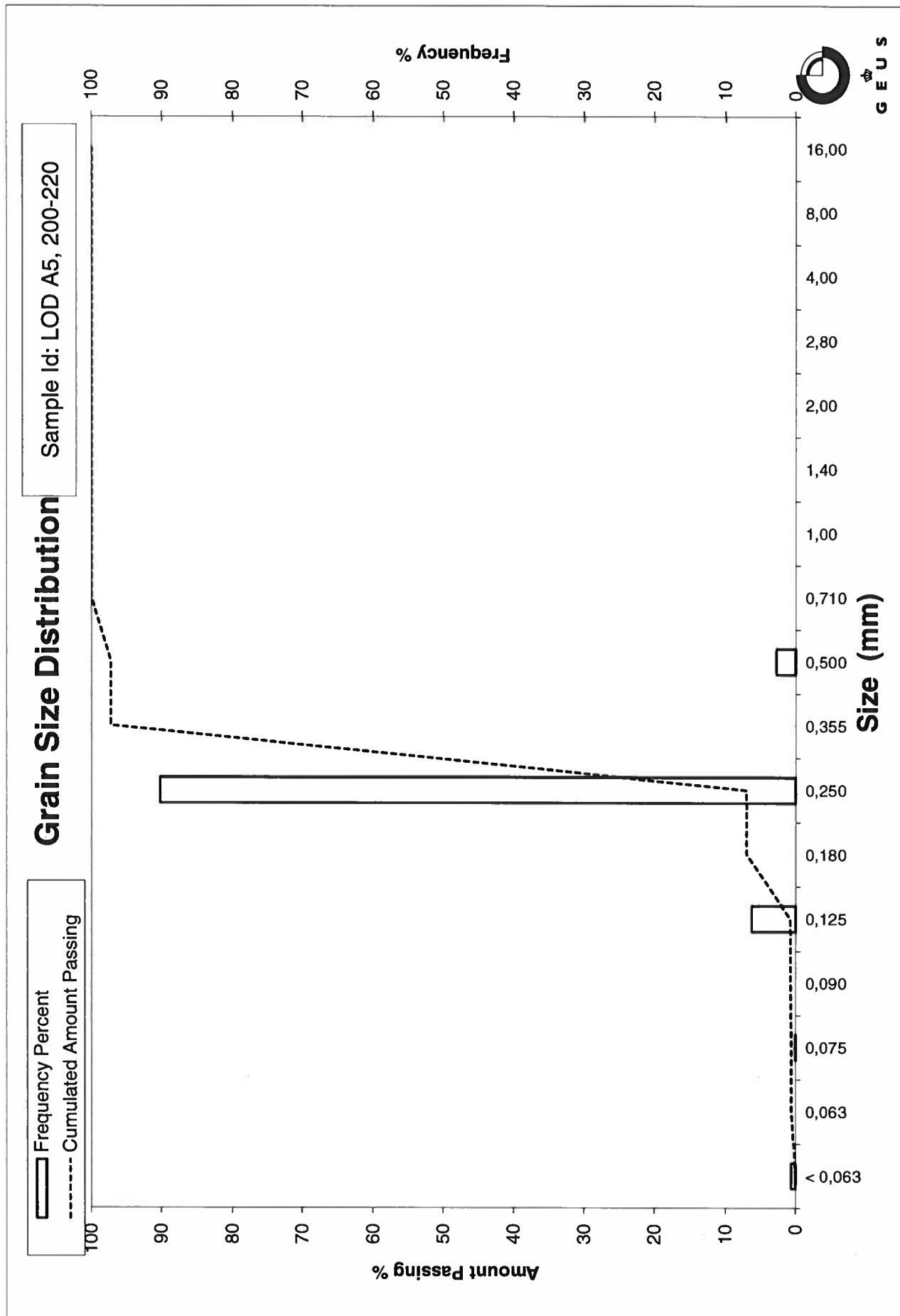
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A5, 300-320

Lab. Id: 200171

Projekt Kystdirektoratet

Subject: 0

Date: august 2020

Executed: PS

Remarks:



GEUS

Total Weight 133,87 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,09	0,07	99,93
0,710	0,49	0,00	0,00	99,93
0,500	1,00	10,51	7,85	92,08
0,355	1,49	0,00	0,00	92,08
0,250	2,00	114,00	85,16	6,92
0,180	2,47	0,00	0,00	6,92
0,125	3,00	7,94	5,93	0,99
0,090	3,47	0,00	0,00	0,99
0,075	3,74	0,16	0,12	0,87
0,063	3,99	0,00	0,00	0,87
< 0,063	> 3,99	1,17	0,87	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,87
Sand, fine	(0,063 mm - 0,200 mm):	6,05
Sand, medium	(0,2 mm - 0,6 mm):	88,90
Sand, coarse	(0,6 mm - 2 mm):	4,18
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,58	0,79
16%	84%	0,35	1,54
25%	75%	0,33	1,58
40%	60%	0,32	1,66
Median 50%	50%	0,30	1,72
75%	25%	0,27	1,88
84%	16%	0,26	1,94
90%	10%	0,25	1,98
95%	5%	0,16	2,62

Moments Statistics

Mean	1,73
Sorting	0,38
Skewness	0,03
Kurtosis	2,55
Uniformity Coefficient	1,24

The analysis is executed according to DS 405.9
extended by sieves to the ½ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

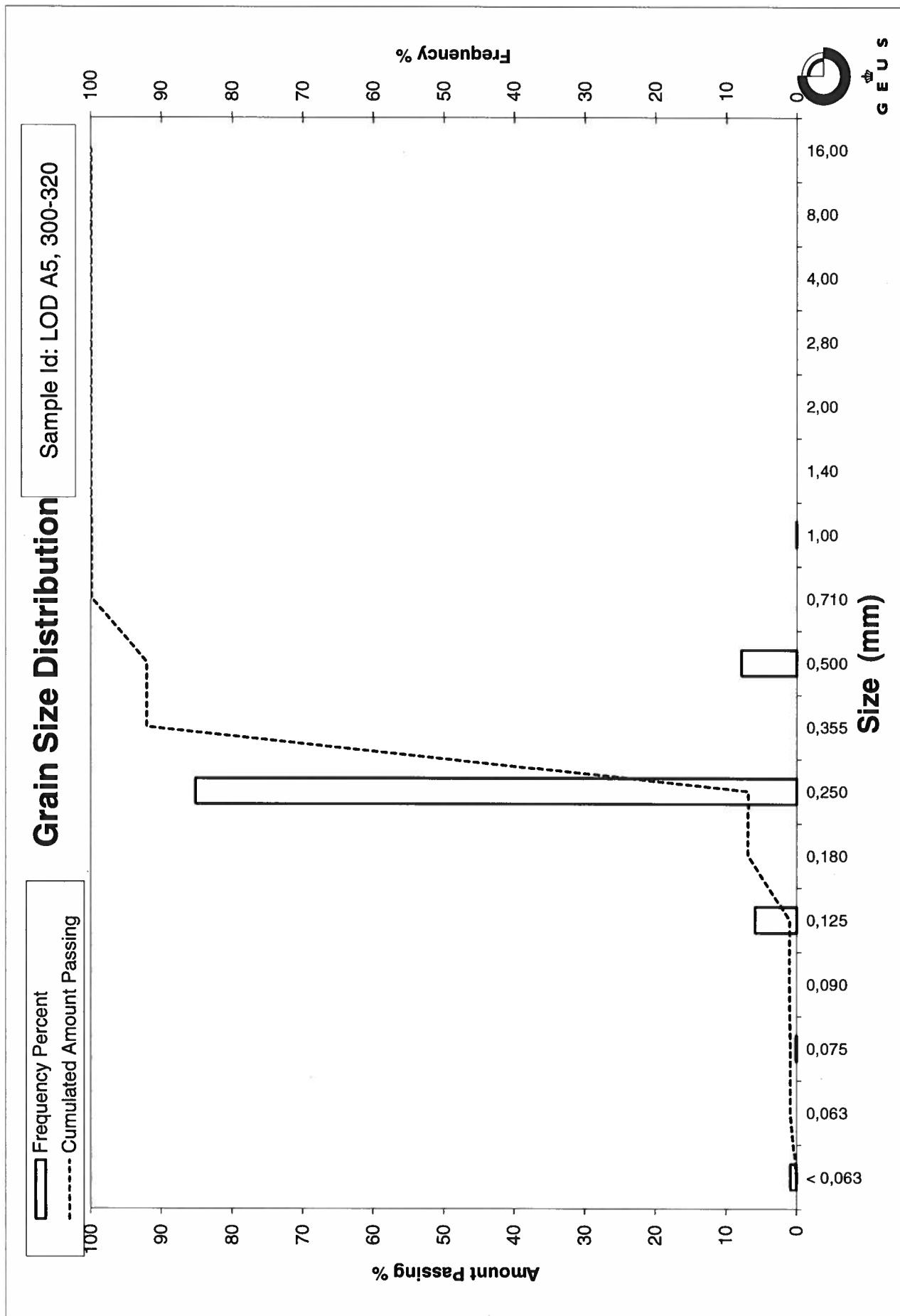
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on
"Amount in sieve". Uniformity coefficient is based on
"Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A5, 400-420
Lab. Id: 200172
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 126,29 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,02	0,02	99,98
1,40	-0,49	0,00	0,00	99,98
1,00	0,00	0,16	0,13	99,86
0,710	0,49	0,00	0,00	99,86
0,500	1,00	14,00	11,09	88,77
0,355	1,49	0,00	0,00	88,77
0,250	2,00	101,47	80,35	8,43
0,180	2,47	0,00	0,00	8,43
0,125	3,00	8,63	6,83	1,59
0,090	3,47	0,00	0,00	1,59
0,075	3,74	0,23	0,18	1,41
0,063	3,99	0,02	0,02	1,39
< 0,063	> 3,99	1,76	1,39	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,39
Sand, fine	(0,063 mm - 0,200 mm): 7,03
Sand, medium	(0,2 mm - 0,6 mm): 85,63
Sand, coarse	(0,6 mm - 2 mm): 5,93
Gravel	(> 2 mm): 0,02
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,62	0,69
16%	84%	0,35	1,52
25%	75%	0,34	1,57
40%	60%	0,32	1,66
Median 50%	50%	0,30	1,72
75%	25%	0,27	1,88
84%	16%	0,26	1,94
90%	10%	0,25	1,99
95%	5%	0,15	2,71

Moments Statistics

Mean	1,73
Sorting	0,41
Skewness	0,03
Kurtosis	2,66
Uniformity Coefficient	1,26

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

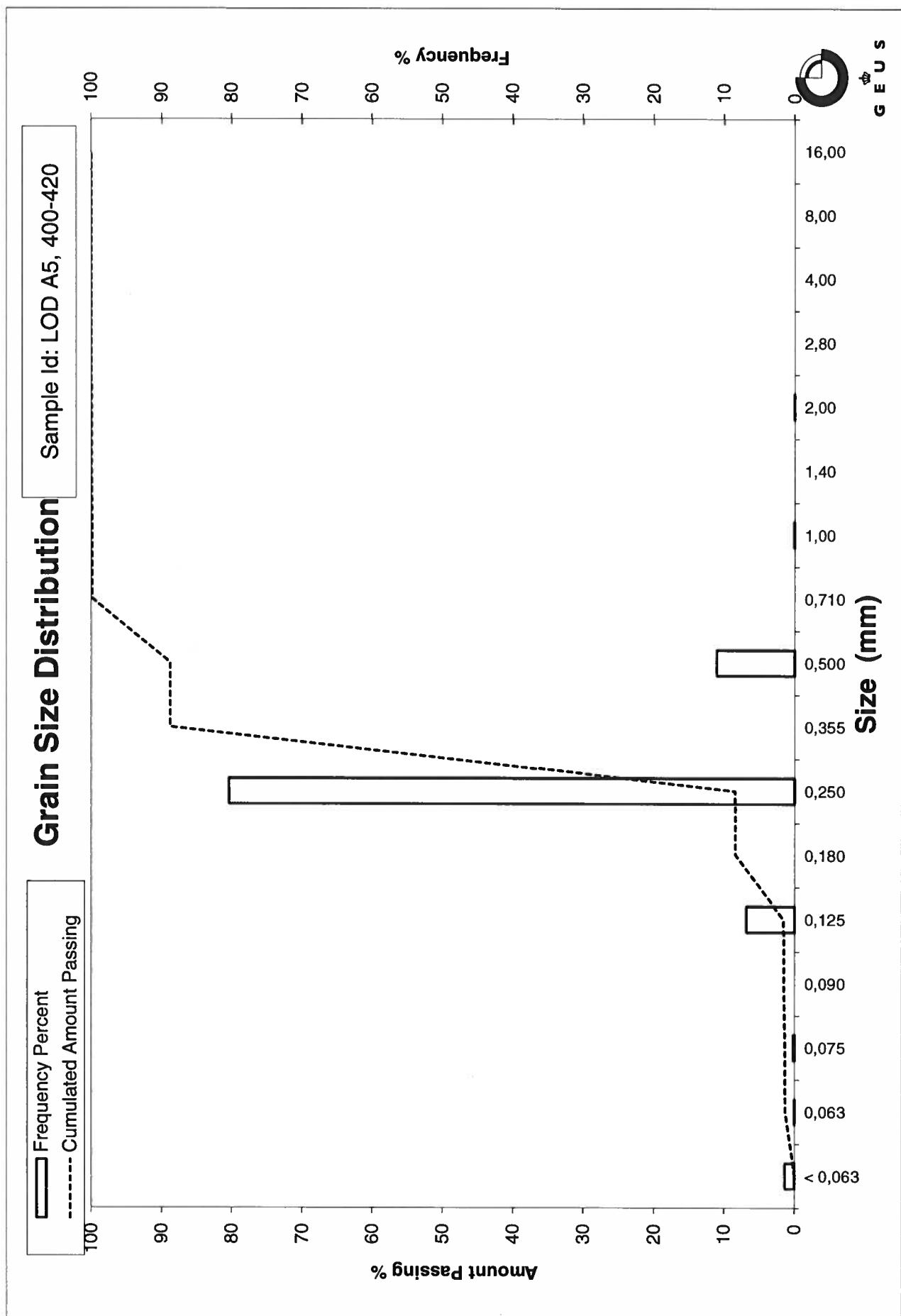
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgi-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A6, 0-20
Lab. Id: 200173
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 1109,36 g

Size Fractions

Size mm	Size ϕ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	232,21	20,93	79,07
8,00	-3,00	216,95	19,56	59,51
4,00	-2,00	90,17	8,13	51,38
2,80	-1,49	0,00	0,00	51,38
2,00	-1,00	73,16	6,60	44,79
1,40	-0,49	0,00	0,00	44,79
1,00	0,00	80,25	7,23	37,55
0,710	0,49	0,00	0,00	37,55
0,500	1,00	119,00	10,73	26,83
0,355	1,49	0,00	0,00	26,83
0,250	2,00	221,22	19,94	6,89
0,180	2,47	0,00	0,00	6,89
0,125	3,00	41,50	3,74	3,14
0,090	3,47	0,00	0,00	3,14
0,075	3,74	8,19	0,74	2,41
0,063	3,99	1,73	0,16	2,25
< 0,063	> 3,99	24,97	2,25	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 2,25
Sand, fine	(0,063 mm - 0,200 mm): 4,64
Sand, medium	(0,2 mm - 0,6 mm): 25,05
Sand, coarse	(0,6 mm - 2 mm): 12,85
Gravel	(> 2 mm): 55,21
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	ϕ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	-----	-----
25%	75%	14,34	-3,84
40%	60%	8,20	-3,04
Median 50%	50%	2,63	-1,40
75%	25%	0,35	1,53
84%	16%	0,30	1,75
90%	10%	0,27	1,91
95%	5%	0,15	2,72

Moments Statistics

Mean	0,18
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	30,78

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

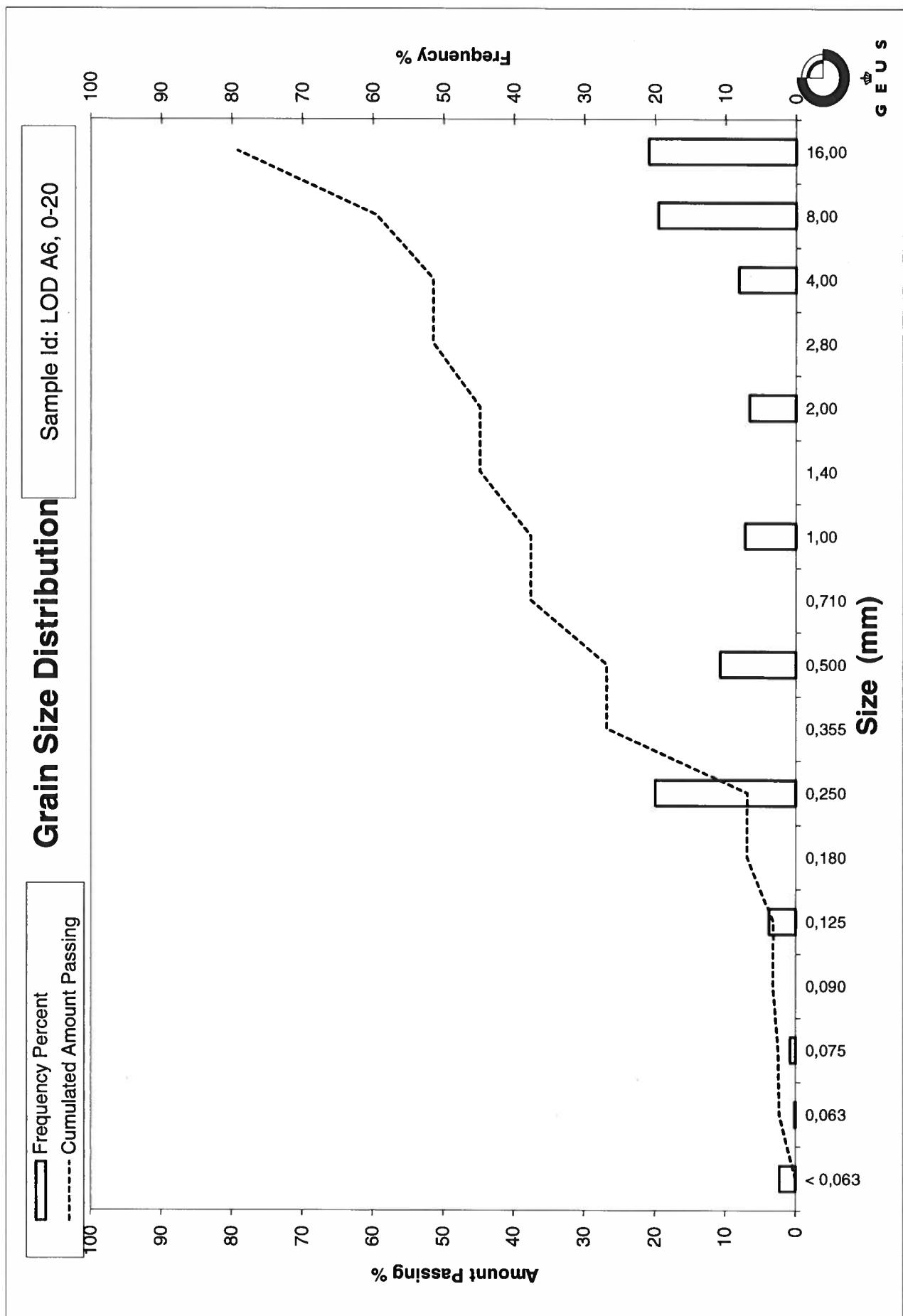
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgi-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A6, 70-90
Lab. Id: 200174
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 110,67 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing
				%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,01	0,01	99,99
1,40	-0,49	0,00	0,00	99,99
1,00	0,00	0,00	0,00	99,99
0,710	0,49	0,00	0,00	99,99
0,500	1,00	0,05	0,05	99,95
0,355	1,49	0,00	0,00	99,95
0,250	2,00	0,14	0,13	99,82
0,180	2,47	0,00	0,00	99,82
0,125	3,00	28,82	26,04	73,78
0,090	3,47	0,00	0,00	73,78
0,075	3,74	60,59	54,75	19,03
0,063	3,99	8,01	7,24	11,79
< 0,063	> 3,99	13,05	11,79	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 11,79
Sand, fine	(0,063 mm - 0,200 mm): 88,03
Sand, medium	(0,2 mm - 0,6 mm): 0,15
Sand, coarse	(0,6 mm - 2 mm): 0,02
Gravel	(> 2 mm): 0,01
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,17	2,56
16%	84%	0,15	2,77
25%	75%	0,13	2,97
40%	60%	0,09	3,54
Median 50%	50%	0,08	3,58
75%	25%	0,08	3,71
84%	16%	0,07	3,84
90%	10%	-----	-----
95%	5%	-----	-----

Moments Statistics

Mean	3,40
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	-----

The analysis is executed according to DS 405.9
extended by sieves to the ½ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

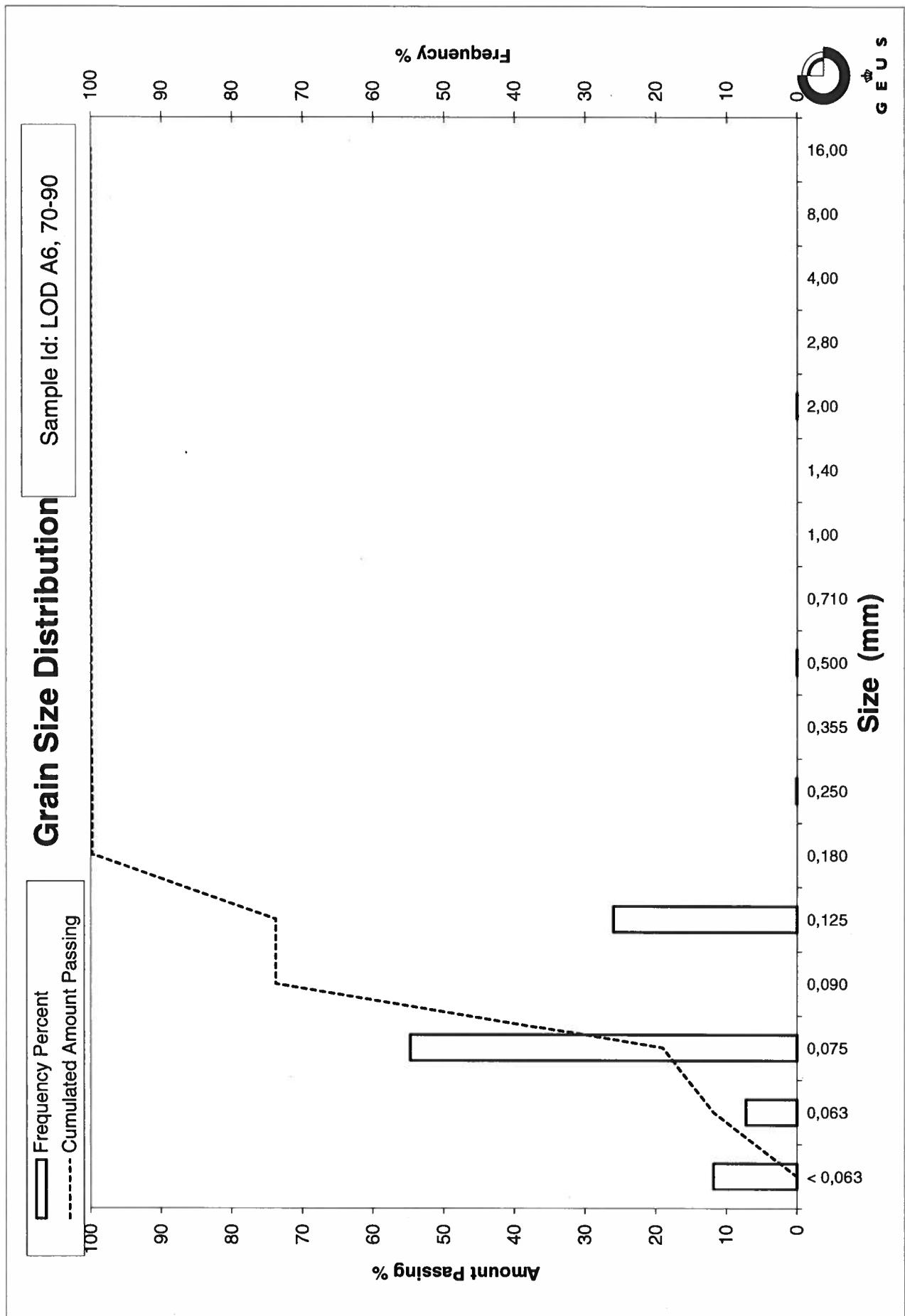
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgr-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on
"Amount in sieve". Uniformity coefficient is based on
"Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A7, 0-20
Lab. Id: 200175
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >32mm (67g)indgår i >16mm



Total Weight 1162,03 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	170,95	14,71	85,29
8,00	-3,00	232,05	19,97	65,32
4,00	-2,00	154,90	13,33	51,99
2,80	-1,49	0,00	0,00	51,99
2,00	-1,00	81,35	7,00	44,99
1,40	-0,49	0,00	0,00	44,99
1,00	0,00	74,44	6,41	38,58
0,710	0,49	0,00	0,00	38,58
0,500	1,00	125,53	10,80	27,78
0,355	1,49	0,00	0,00	27,78
0,250	2,00	238,71	20,54	7,24
0,180	2,47	0,00	0,00	7,24
0,125	3,00	42,09	3,62	3,62
0,090	3,47	0,00	0,00	3,62
0,075	3,74	14,50	1,25	2,37
0,063	3,99	1,41	0,12	2,25
< 0,063	> 3,99	26,10	2,25	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 2,25
Sand, fine	(0,063 mm - 0,200 mm): 4,99
Sand, medium	(0,2 mm - 0,6 mm): 25,69
Sand, coarse	(0,6 mm - 2 mm): 12,06
Gravel	(> 2 mm): 55,01
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	-----	-----
16%	84%	15,48	-3,95
25%	75%	11,88	-3,57
40%	60%	6,40	-2,68
Median 50%	50%	2,57	-1,36
75%	25%	0,34	1,55
84%	16%	0,29	1,76
90%	10%	0,26	1,92
95%	5%	0,15	2,78

Moments Statistics

Mean	-1,18
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	24,25

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

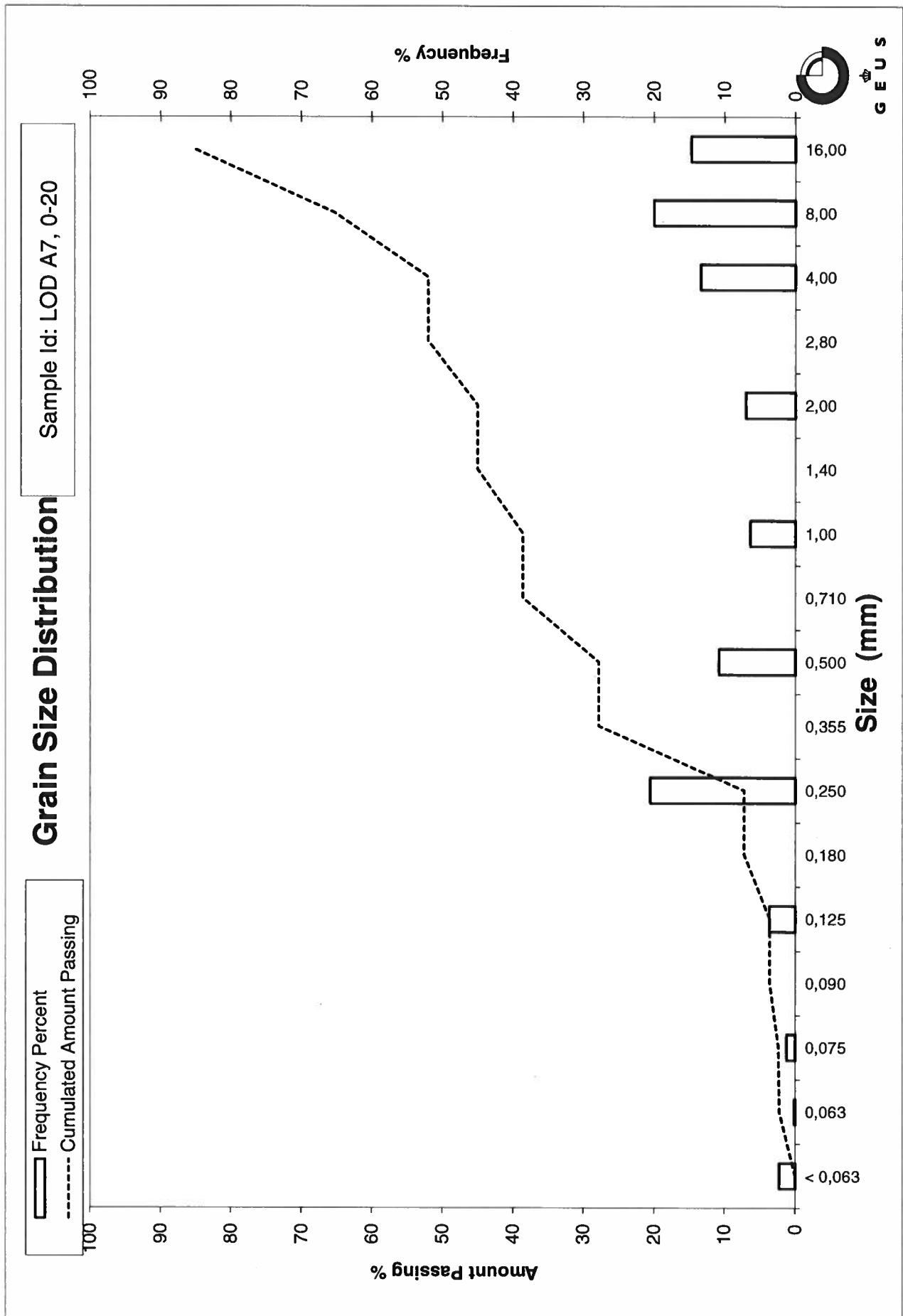
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A7, 120-140

Lab. Id: 200176

Projekt Kystdirektoratet

Subject: 0

Date: august 2020

Executed: PS

Remarks:



G E U S

Total Weight 147,45 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	3,99	2,71	97,29
4,00	-2,00	1,18	0,80	96,49
2,80	-1,49	0,00	0,00	96,49
2,00	-1,00	3,71	2,52	93,98
1,40	-0,49	0,00	0,00	93,98
1,00	0,00	12,50	8,48	85,50
0,710	0,49	0,00	0,00	85,50
0,500	1,00	33,44	22,68	62,82
0,355	1,49	0,00	0,00	62,82
0,250	2,00	40,76	27,64	35,18
0,180	2,47	0,00	0,00	35,18
0,125	3,00	35,07	23,78	11,39
0,090	3,47	0,00	0,00	11,39
0,075	3,74	10,21	6,92	4,47
0,063	3,99	1,50	1,02	3,45
< 0,063	> 3,99	5,09	3,45	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 3,45
Sand, fine	(0,063 mm - 0,200 mm): 31,73
Sand, medium	(0,2 mm - 0,6 mm): 38,44
Sand, coarse	(0,6 mm - 2 mm): 20,36
Gravel	(> 2 mm): 6,02
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	2,33	-1,22
16%	84%	0,70	0,52
25%	75%	0,61	0,71
40%	60%	0,34	1,54
Median 50%	50%	0,31	1,71
75%	25%	0,16	2,68
84%	16%	0,14	2,88
90%	10%	0,09	3,52
95%	5%	0,08	3,72

Moments Statistics

Mean	1,70
Sorting	1,34
Skewness	-0,09
Kurtosis	1,03
Uniformity Coefficient	3,96

The analysis is executed according to DS 405.9
extended by sieves to the ½ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

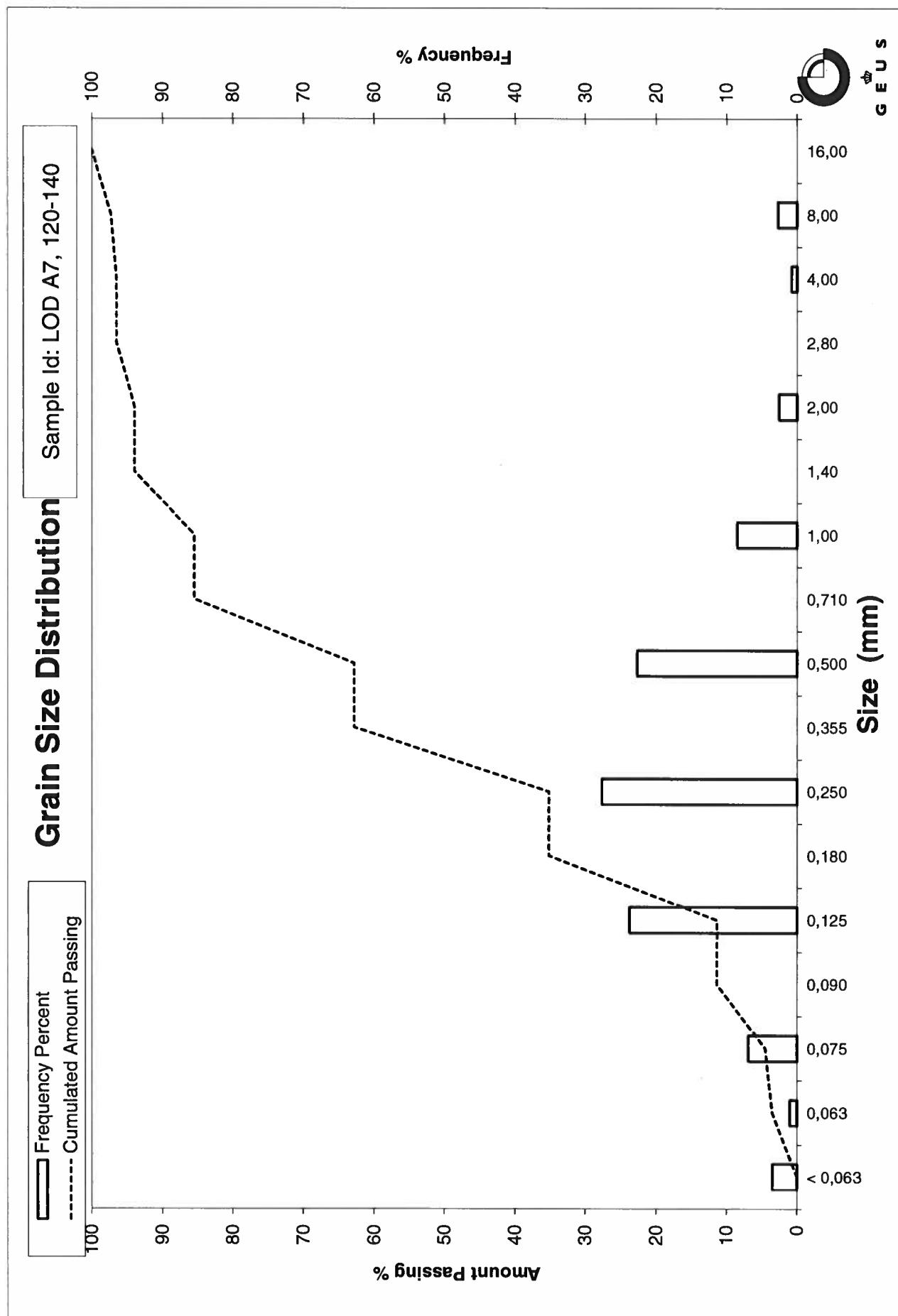
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD A7, 200-220

Lab. Id: 200177

Projekt Kystdirektoratet

Subject: 0

Date: august 2020

Executed: PS

Remarks:



G E U S

Total Weight 129,29 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,23	0,18	99,82
2,80	-1,49	0,00	0,00	99,82
2,00	-1,00	0,00	0,00	99,82
1,40	-0,49	0,00	0,00	99,82
1,00	0,00	0,30	0,23	99,59
0,710	0,49	0,00	0,00	99,59
0,500	1,00	0,90	0,70	98,89
0,355	1,49	0,00	0,00	98,89
0,250	2,00	19,81	15,32	83,57
0,180	2,47	0,00	0,00	83,57
0,125	3,00	74,71	57,78	25,79
0,090	3,47	0,00	0,00	25,79
0,075	3,74	21,04	16,27	9,51
0,063	3,99	2,50	1,93	7,58
< 0,063	> 3,99	9,80	7,58	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 7,58
Sand, fine	(0,063 mm - 0,200 mm): 75,99
Sand, medium	(0,2 mm - 0,6 mm): 15,65
Sand, coarse	(0,6 mm - 2 mm): 0,60
Gravel	(> 2 mm): 0,18
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,33	1,61
16%	84%	0,25	1,98
25%	75%	0,17	2,54
40%	60%	0,16	2,67
Median 50%	50%	0,15	2,76
75%	25%	0,09	3,49
84%	16%	0,08	3,63
90%	10%	0,08	3,73
95%	5%	-----	-----

Moments Statistics

Mean	2,79
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	2,09

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

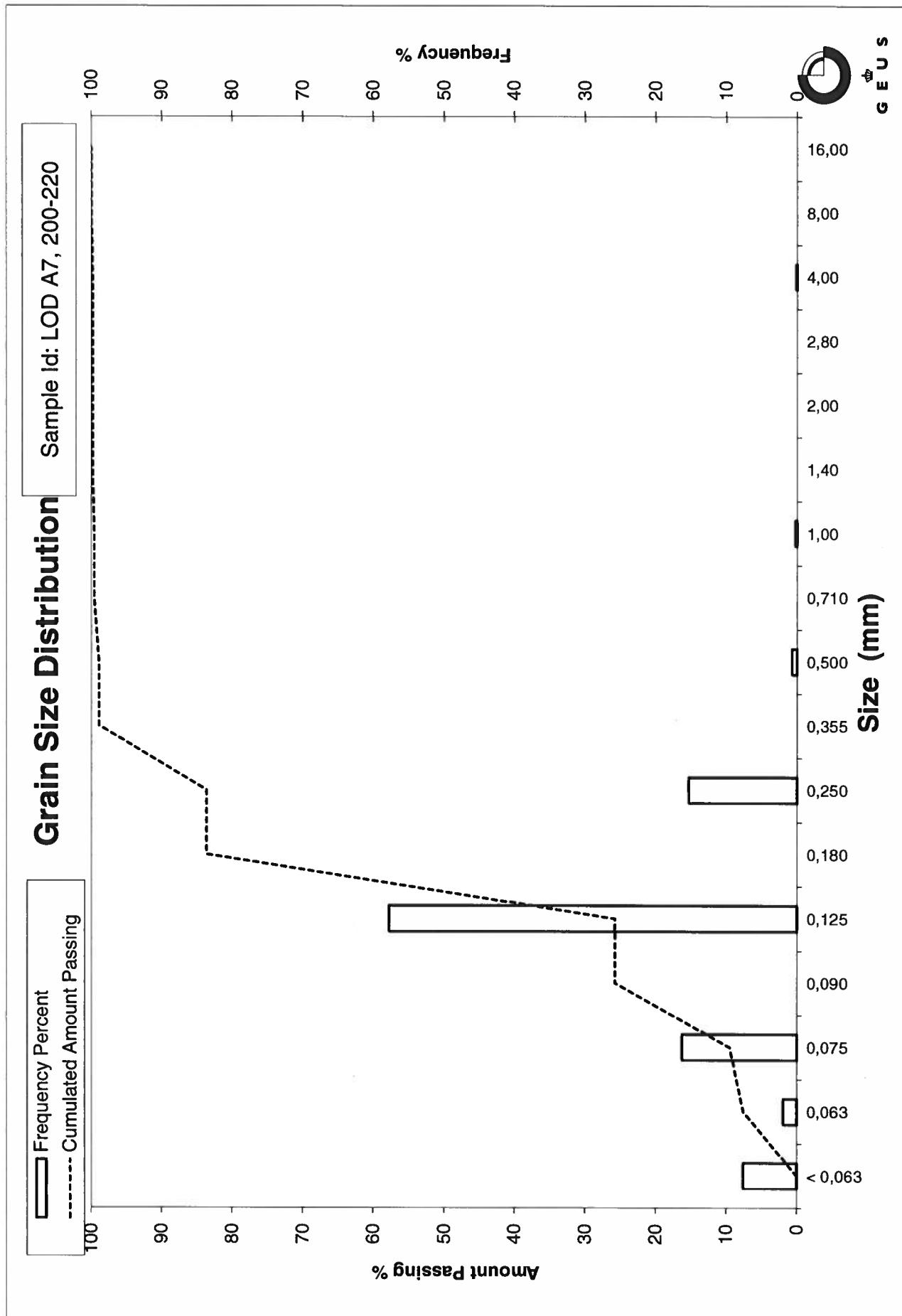
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dfg-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B1, 40-60
Lab. Id: 200212
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 108,46 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,18	0,17	99,83
1,40	-0,49	0,00	0,00	99,83
1,00	0,00	0,48	0,44	99,39
0,710	0,49	0,00	0,00	99,39
0,500	1,00	4,11	3,79	95,60
0,355	1,49	0,00	0,00	95,60
0,250	2,00	70,29	64,81	30,79
0,180	2,47	0,00	0,00	30,79
0,125	3,00	31,71	29,24	1,56
0,090	3,47	0,00	0,00	1,56
0,075	3,74	0,42	0,39	1,17
0,063	3,99	0,02	0,02	1,15
< 0,063	> 3,99	1,25	1,15	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,15
Sand, fine	(0,063 mm - 0,200 mm): 29,64
Sand, medium	(0,2 mm - 0,6 mm): 66,61
Sand, coarse	(0,6 mm - 2 mm): 2,43
Gravel	(> 2 mm): 0,17
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,35	1,50
16%	84%	0,34	1,57
25%	75%	0,32	1,64
40%	60%	0,30	1,75
Median 50%	50%	0,28	1,83
75%	25%	0,17	2,56
84%	16%	0,15	2,72
90%	10%	0,14	2,83
95%	5%	0,13	2,93

Moments Statistics

Mean	2,04
Sorting	0,50
Skewness	0,54
Kurtosis	0,63
Uniformity Coefficient	2,11

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

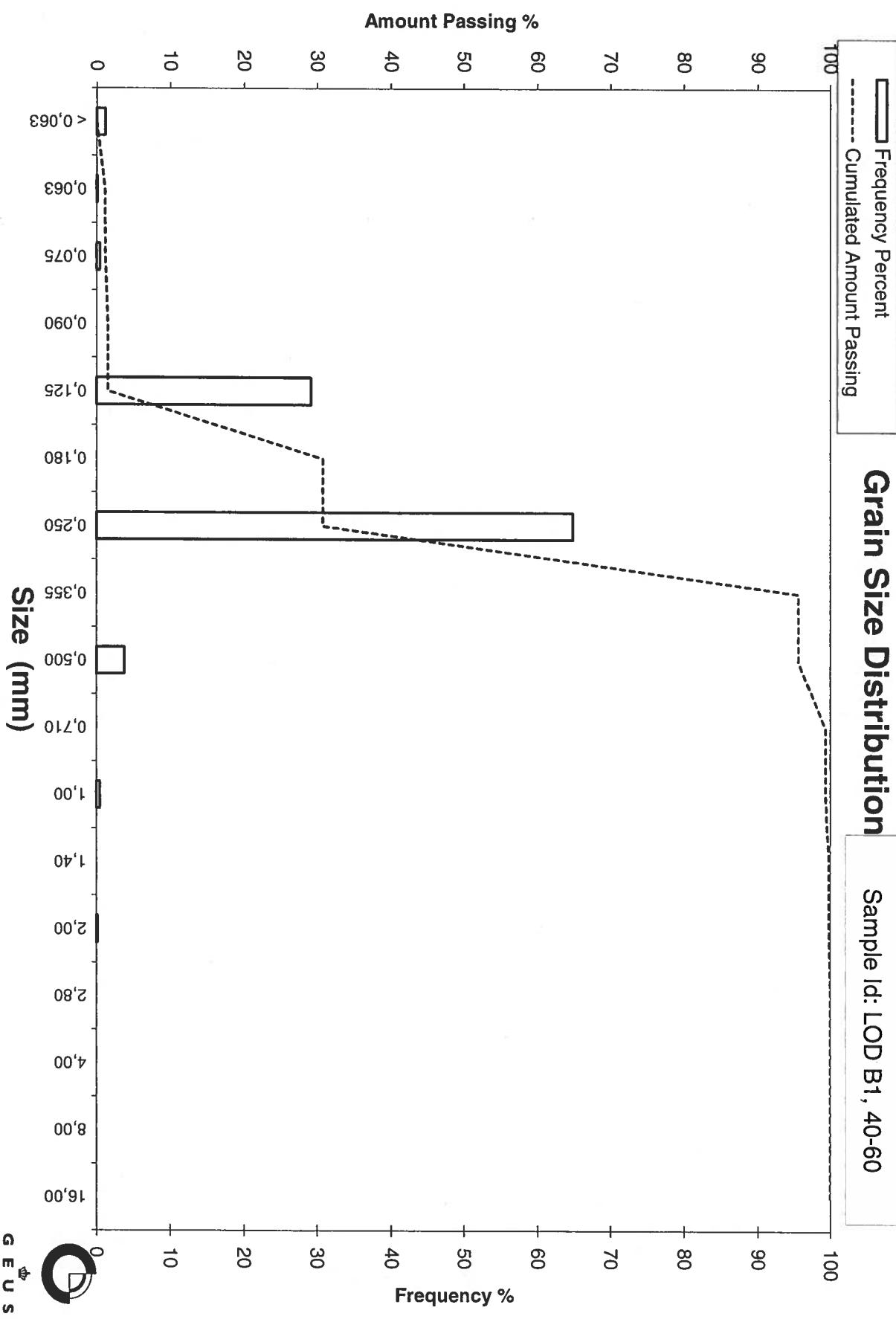
$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dfg-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Sample Id: LOD B1, 40-60



Grain Size Distribution

Geotechnical

Sample Id: LOD B1, 140-160
Lab. Id: 200213
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 109,32 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,04	0,04	99,96
1,40	-0,49	0,00	0,00	99,96
1,00	0,00	0,05	0,05	99,92
0,710	0,49	0,00	0,00	99,92
0,500	1,00	2,05	1,88	98,04
0,355	1,49	0,00	0,00	98,04
0,250	2,00	57,98	53,04	45,01
0,180	2,47	0,00	0,00	45,01
0,125	3,00	46,81	42,82	2,19
0,090	3,47	0,00	0,00	2,19
0,075	3,74	1,54	1,41	0,78
0,063	3,99	0,08	0,07	0,70
< 0,063	> 3,99	0,77	0,70	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,70
Sand, fine	(0,063 mm - 0,200 mm): 44,30
Sand, medium	(0,2 mm - 0,6 mm): 53,93
Sand, coarse	(0,6 mm - 2 mm): 1,03
Gravel	(> 2 mm): 0,04
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,35	1,52
16%	84%	0,33	1,61
25%	75%	0,31	1,69
40%	60%	0,28	1,84
Median 50%	50%	0,26	1,94
75%	25%	0,15	2,70
84%	16%	0,14	2,81
90%	10%	0,14	2,89
95%	5%	0,13	2,96

Moments Statistics

Mean	2,12
Sorting	0,52
Skewness	0,43
Kurtosis	0,59
Uniformity Coefficient	2,07

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6 \text{ (Folk and Ward 1957)}$$

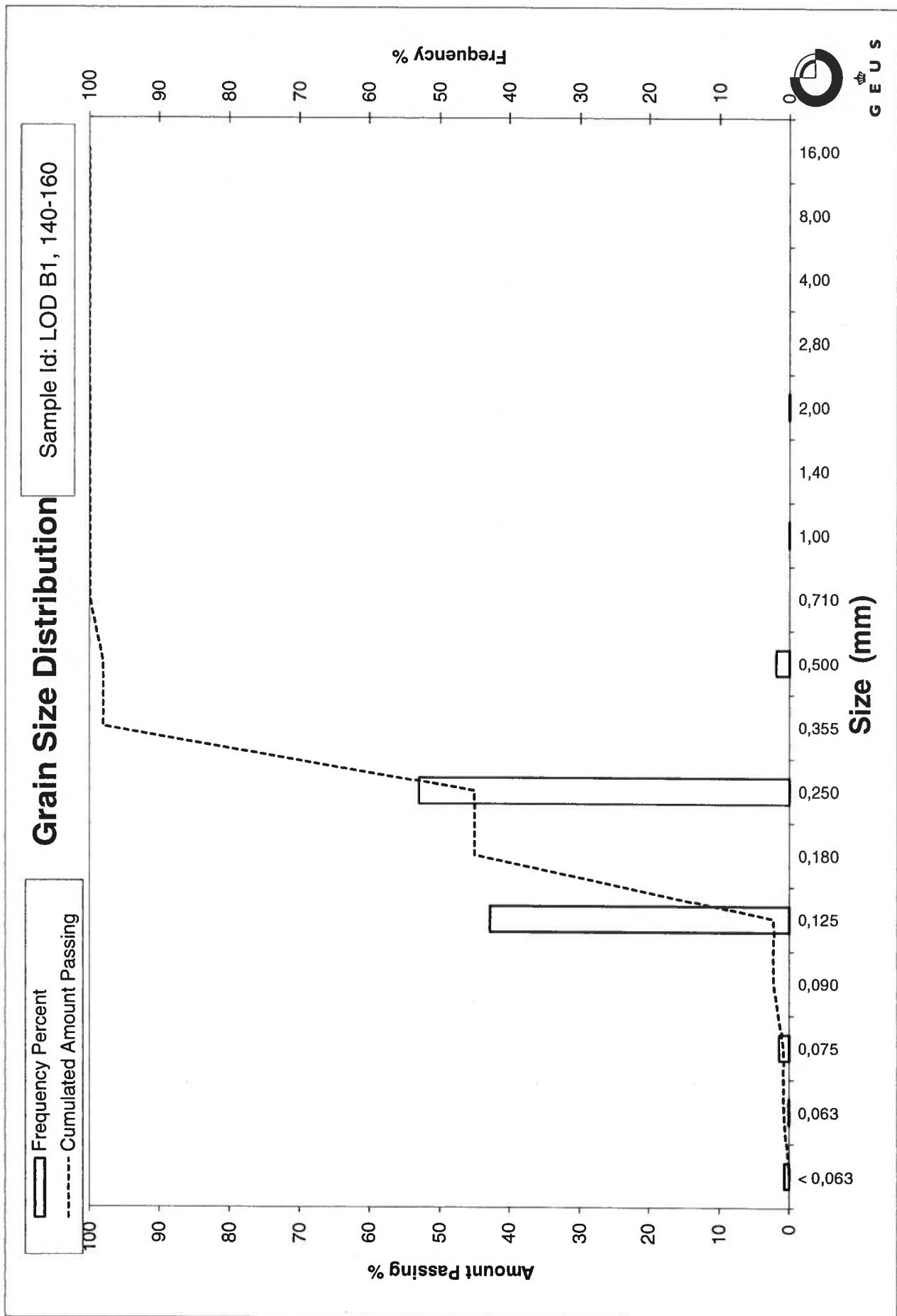
$$\text{Kurtosis } (\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B1, 240-260
Lab. Id: 200214
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 109,55 g

Size Fractions

Size mm	Size ϕ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,01	0,01	99,99
1,40	-0,49	0,00	0,00	99,99
1,00	0,00	0,43	0,39	99,60
0,710	0,49	0,00	0,00	99,60
0,500	1,00	6,04	5,51	94,08
0,355	1,49	0,00	0,00	94,08
0,250	2,00	67,62	61,73	32,36
0,180	2,47	0,00	0,00	32,36
0,125	3,00	33,51	30,59	1,77
0,090	3,47	0,00	0,00	1,77
0,075	3,74	1,15	1,05	0,72
0,063	3,99	0,10	0,09	0,63
< 0,063	> 3,99	0,69	0,63	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,63
Sand, fine	(0,063 mm - 0,200 mm): 31,73
Sand, medium	(0,2 mm - 0,6 mm): 64,35
Sand, coarse	(0,6 mm - 2 mm): 3,28
Gravel	(> 2 mm): 0,01
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	ϕ
Amount in sieve	Amount passing		
5%	95%	0,53	0,90
16%	84%	0,34	1,57
25%	75%	0,32	1,63
40%	60%	0,30	1,75
Median 50%	50%	0,28	1,84
75%	25%	0,17	2,58
84%	16%	0,15	2,73
90%	10%	0,14	2,84
95%	5%	0,13	2,93

Moments Statistics

Mean	2,04
Sorting	0,60
Skewness	0,31
Kurtosis	0,88
Uniformity Coefficient	2,12

The analysis is executed according to DS 405.9
extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

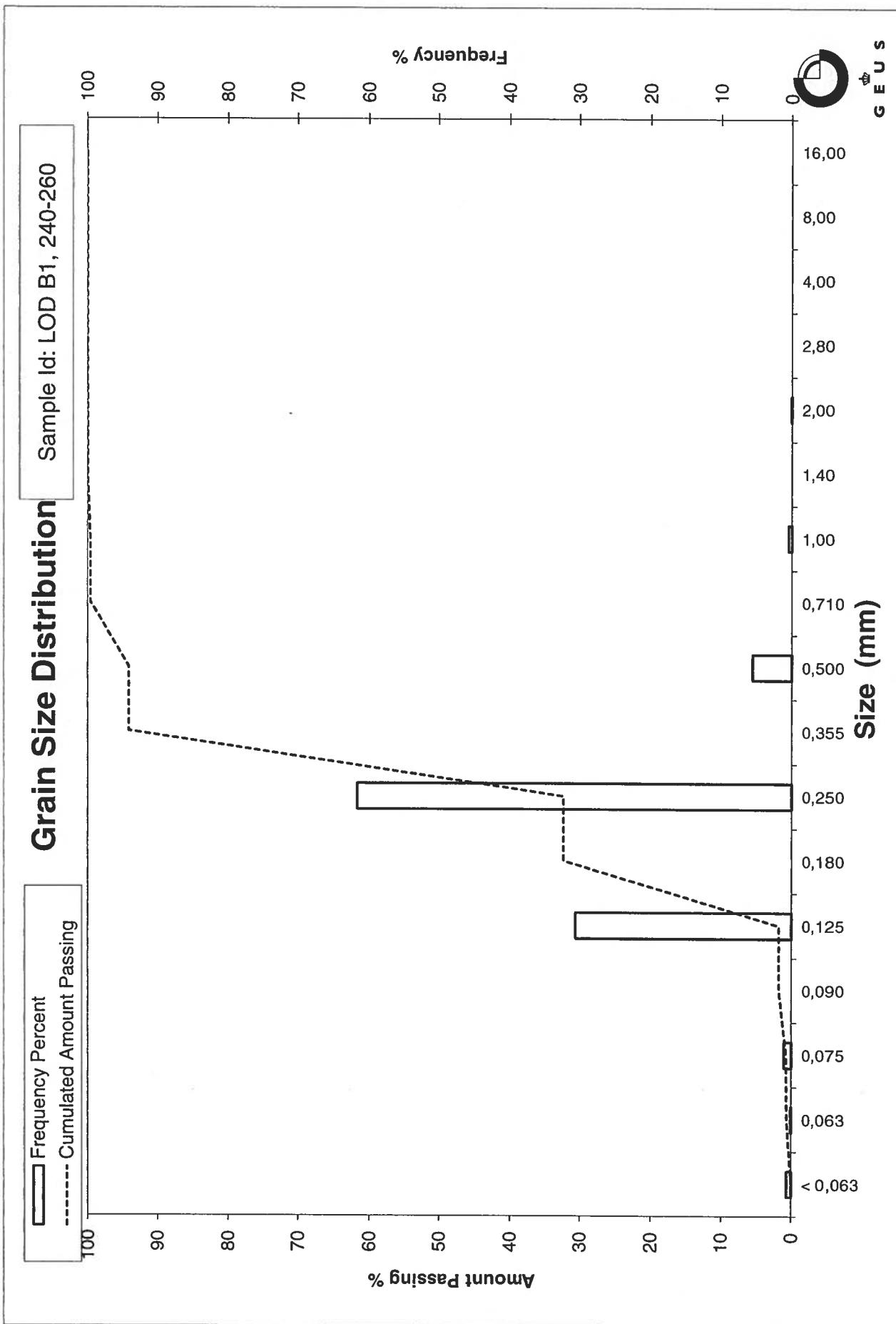
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on
"Amount in sieve". Uniformity coefficient is based on
"Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B1, 340-360
Lab. Id: 200215
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 106,1 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,69	1,59	98,41
4,00	-2,00	0,90	0,85	97,56
2,80	-1,49	0,00	0,00	97,56
2,00	-1,00	1,27	1,20	96,36
1,40	-0,49	0,00	0,00	96,36
1,00	0,00	3,48	3,28	93,08
0,710	0,49	0,00	0,00	93,08
0,500	1,00	15,18	14,31	78,77
0,355	1,49	0,00	0,00	78,77
0,250	2,00	52,26	49,26	29,52
0,180	2,47	0,00	0,00	29,52
0,125	3,00	29,93	28,21	1,31
0,090	3,47	0,00	0,00	1,31
0,075	3,74	0,58	0,55	0,76
0,063	3,99	0,04	0,04	0,73
< 0,063	> 3,99	0,77	0,73	0,00

Sieve Analysis

Gravel | Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,73
Sand, fine	(0,063 mm - 0,200 mm): 28,79
Sand, medium	(0,2 mm - 0,6 mm): 56,07
Sand, coarse	(0,6 mm - 2 mm): 10,77
Gravel	(> 2 mm): 3,64
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,23	-0,30
16%	84%	0,58	0,79
25%	75%	0,35	1,53
40%	60%	0,31	1,67
Median 50%	50%	0,29	1,77
75%	25%	0,17	2,55
84%	16%	0,15	2,70
90%	10%	0,14	2,82
95%	5%	0,13	2,92

Moments Statistics

Mean	1,75
Sorting	0,97
Skewness	-0,15
Kurtosis	1,30
Uniformity Coefficient	2,22

The analysis is executed according to DS 405.9
extended by sieves to the ½ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

$$\text{Mean } (\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6 \text{ (Folk and Ward 1957)}$$

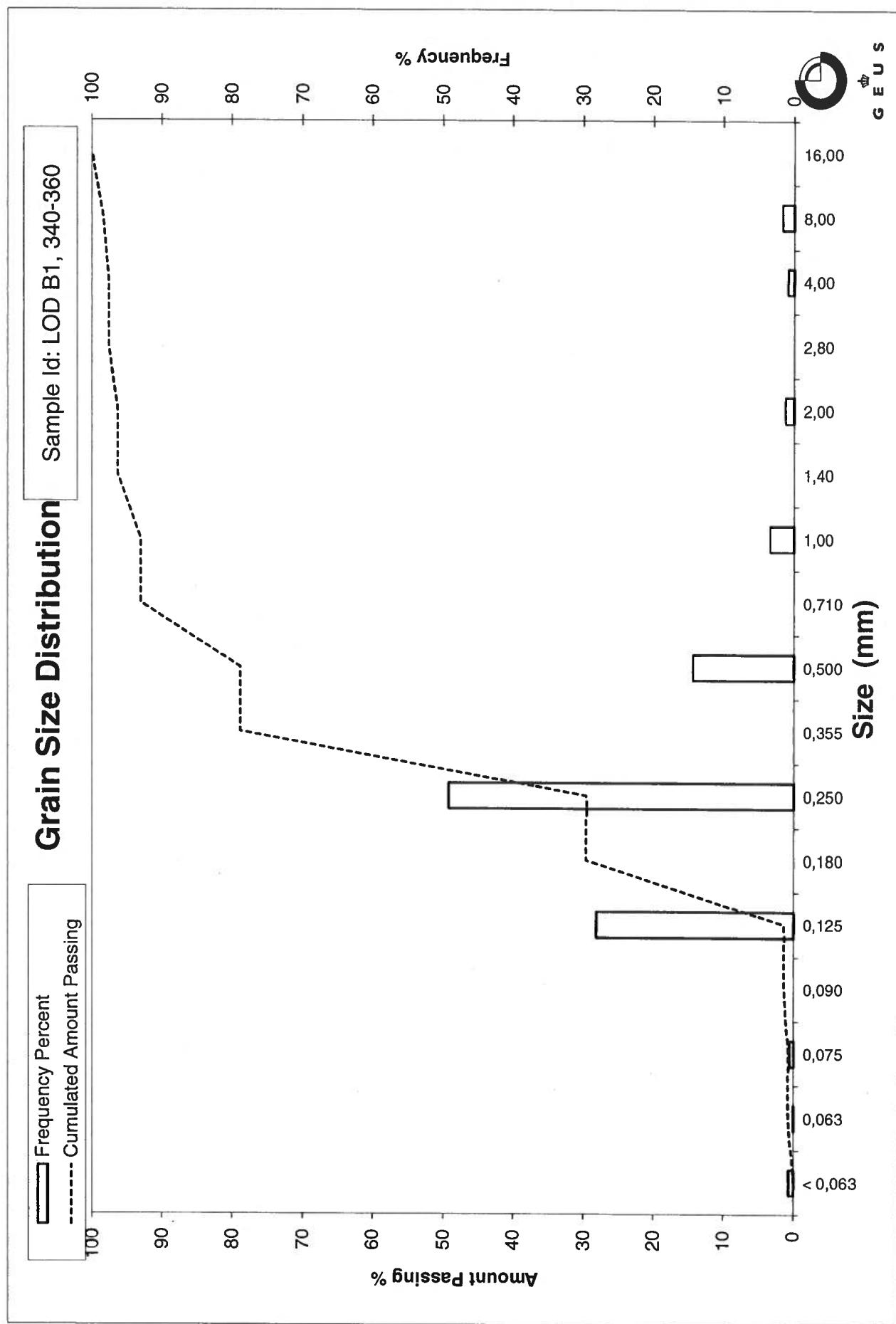
$$\text{Kurtosis } (\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B1, 440-460
Lab. Id: 200216
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 119,47 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,09	0,08	99,92
2,80	-1,49	0,00	0,00	99,92
2,00	-1,00	0,81	0,68	99,25
1,40	-0,49	0,00	0,00	99,25
1,00	0,00	3,02	2,53	96,72
0,710	0,49	0,00	0,00	96,72
0,500	1,00	17,40	14,56	82,15
0,355	1,49	0,00	0,00	82,15
0,250	2,00	67,74	56,70	25,45
0,180	2,47	0,00	0,00	25,45
0,125	3,00	28,13	23,55	1,91
0,090	3,47	0,00	0,00	1,91
0,075	3,74	1,28	1,07	0,84
0,063	3,99	0,05	0,04	0,80
< 0,063	> 3,99	0,95	0,80	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,80
Sand, fine	(0,063 mm - 0,200 mm): 24,66
Sand, medium	(0,2 mm - 0,6 mm): 63,64
Sand, coarse	(0,6 mm - 2 mm): 10,16
Gravel	(> 2 mm): 0,75
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,69	0,55
16%	84%	0,53	0,93
25%	75%	0,34	1,55
40%	60%	0,31	1,67
Median 50%	50%	0,30	1,76
75%	25%	0,18	2,48
84%	16%	0,16	2,66
90%	10%	0,14	2,80
95%	5%	0,13	2,92

Moments Statistics

Mean	1,78
Sorting	0,79
Skewness	0,01
Kurtosis	1,04
Uniformity Coefficient	2,18

The analysis is executed according to DS 405.9
extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

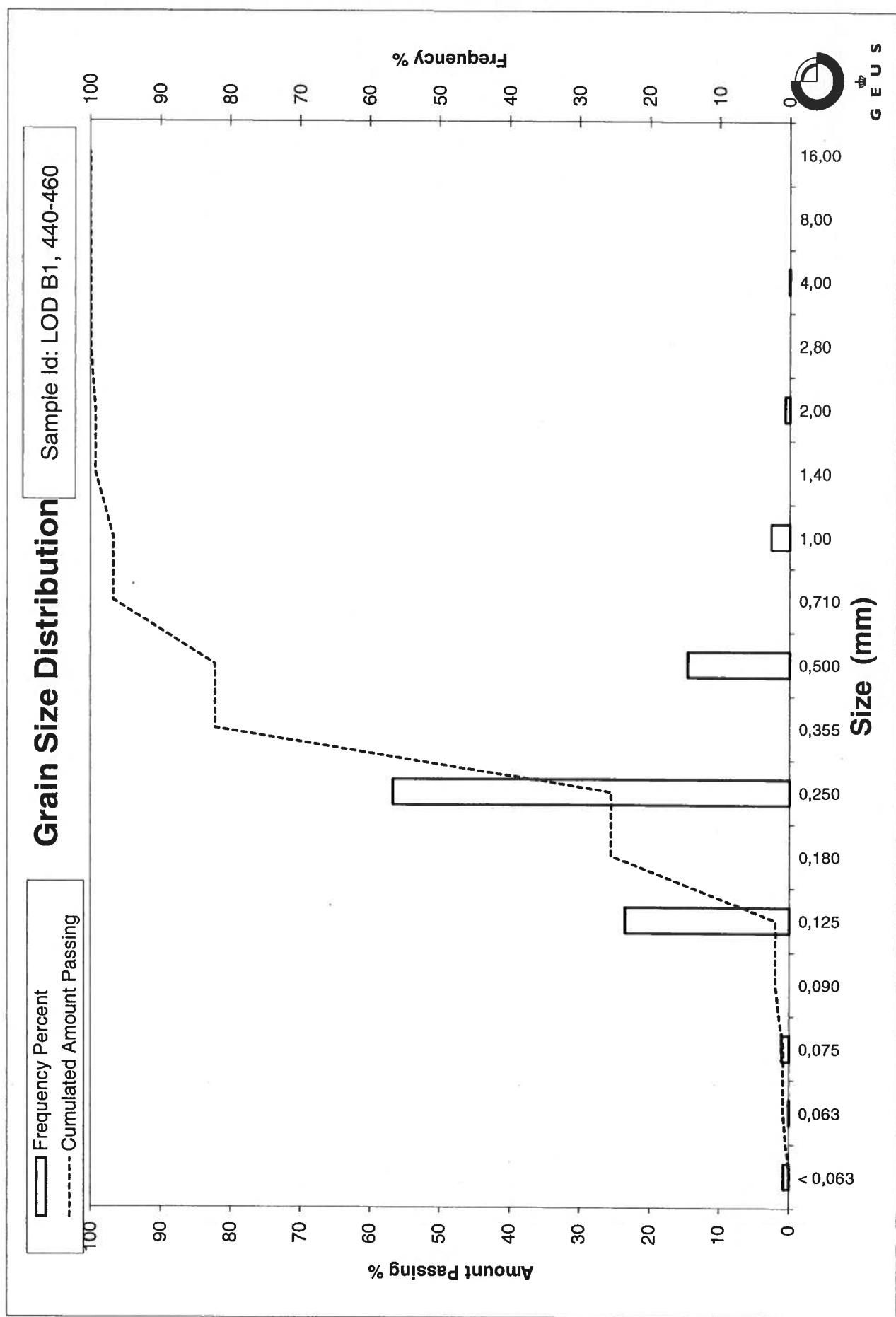
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dfg-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on
"Amount in sieve". Uniformity coefficient is based on
"Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B1, 540-560
Lab. Id: 200217
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 111,14 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,05	0,04	99,96
0,710	0,49	0,00	0,00	99,96
0,500	1,00	1,41	1,27	98,69
0,355	1,49	0,00	0,00	98,69
0,250	2,00	70,89	63,78	34,90
0,180	2,47	0,00	0,00	34,90
0,125	3,00	36,29	32,65	2,25
0,090	3,47	0,00	0,00	2,25
0,075	3,74	1,10	0,99	1,26
0,063	3,99	0,05	0,04	1,21
< 0,063	> 3,99	1,35	1,21	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,21
Sand, fine	(0,063 mm - 0,200 mm): 33,69
Sand, medium	(0,2 mm - 0,6 mm): 64,39
Sand, coarse	(0,6 mm - 2 mm): 0,71
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,35	1,52
16%	84%	0,33	1,60
25%	75%	0,32	1,66
40%	60%	0,29	1,78
Median 50%	50%	0,27	1,86
75%	25%	0,16	2,61
84%	16%	0,15	2,75
90%	10%	0,14	2,86
95%	5%	0,13	2,95

Moments Statistics

Mean	2,07
Sorting	0,51
Skewness	0,53
Kurtosis	0,61
Uniformity Coefficient	2,11

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

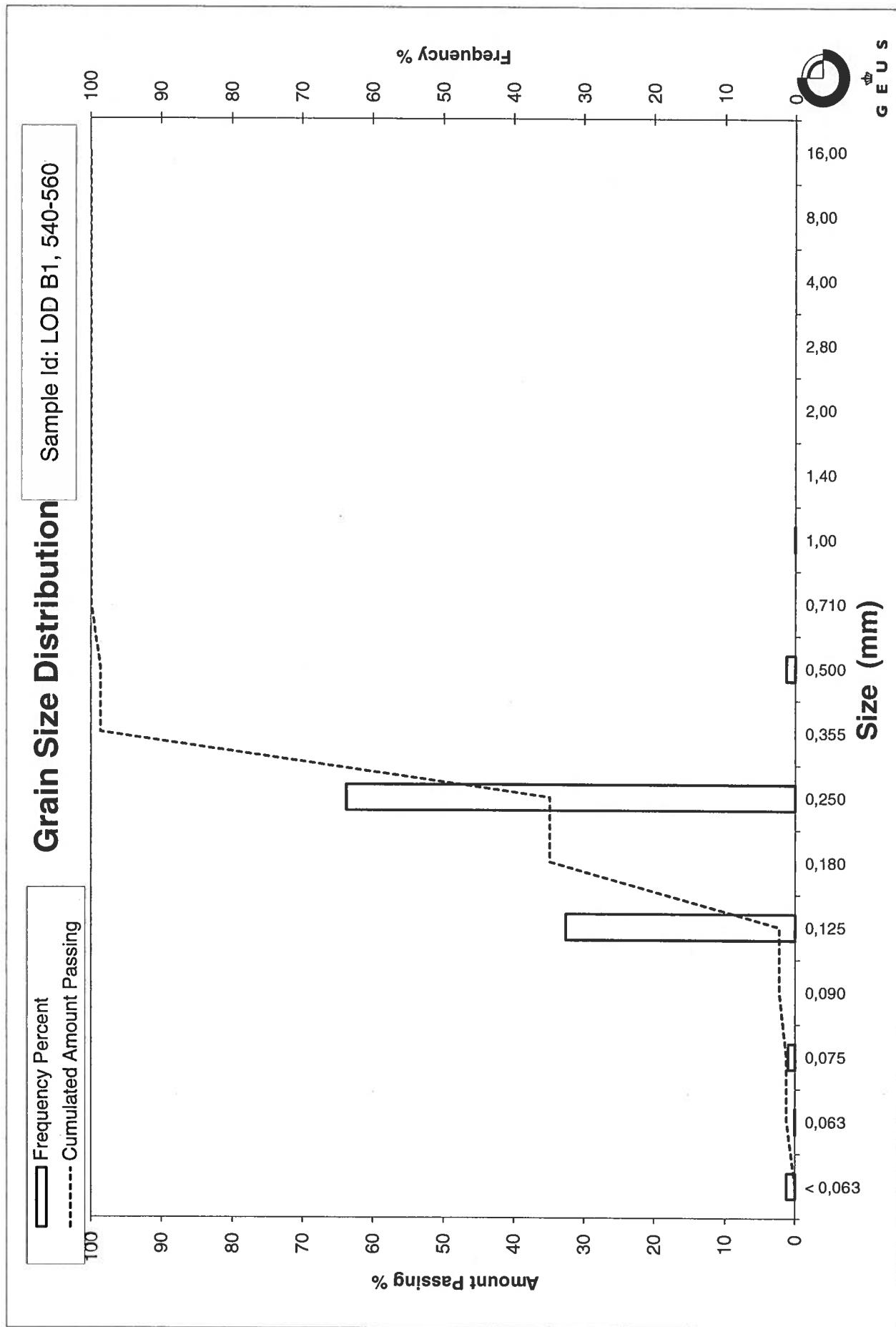
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dfg-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B2, 0-20
Lab. Id: 200178
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 131,07 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,24	0,18	99,82
1,40	-0,49	0,00	0,00	99,82
1,00	0,00	2,98	2,27	97,54
0,710	0,49	0,00	0,00	97,54
0,500	1,00	15,91	12,14	85,40
0,355	1,49	0,00	0,00	85,40
0,250	2,00	84,49	64,46	20,94
0,180	2,47	0,00	0,00	20,94
0,125	3,00	24,45	18,65	2,29
0,090	3,47	0,00	0,00	2,29
0,075	3,74	1,29	0,98	1,30
0,063	3,99	0,17	0,13	1,17
< 0,063	> 3,99	1,54	1,17	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,17
Sand, fine	(0,063 mm - 0,200 mm): 19,77
Sand, medium	(0,2 mm - 0,6 mm): 70,24
Sand, coarse	(0,6 mm - 2 mm): 8,63
Gravel	(> 2 mm): 0,18
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,67	0,59
16%	84%	0,35	1,50
25%	75%	0,34	1,56
40%	60%	0,31	1,67
Median 50%	50%	0,30	1,75
75%	25%	0,26	1,96
84%	16%	0,17	2,60
90%	10%	0,15	2,76
95%	5%	0,13	2,91

Moments Statistics

Mean	1,95
Sorting	0,63
Skewness	0,27
Kurtosis	2,40
Uniformity Coefficient	2,12

The analysis is executed according to DS 405.9
extended by sieves to the ½ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

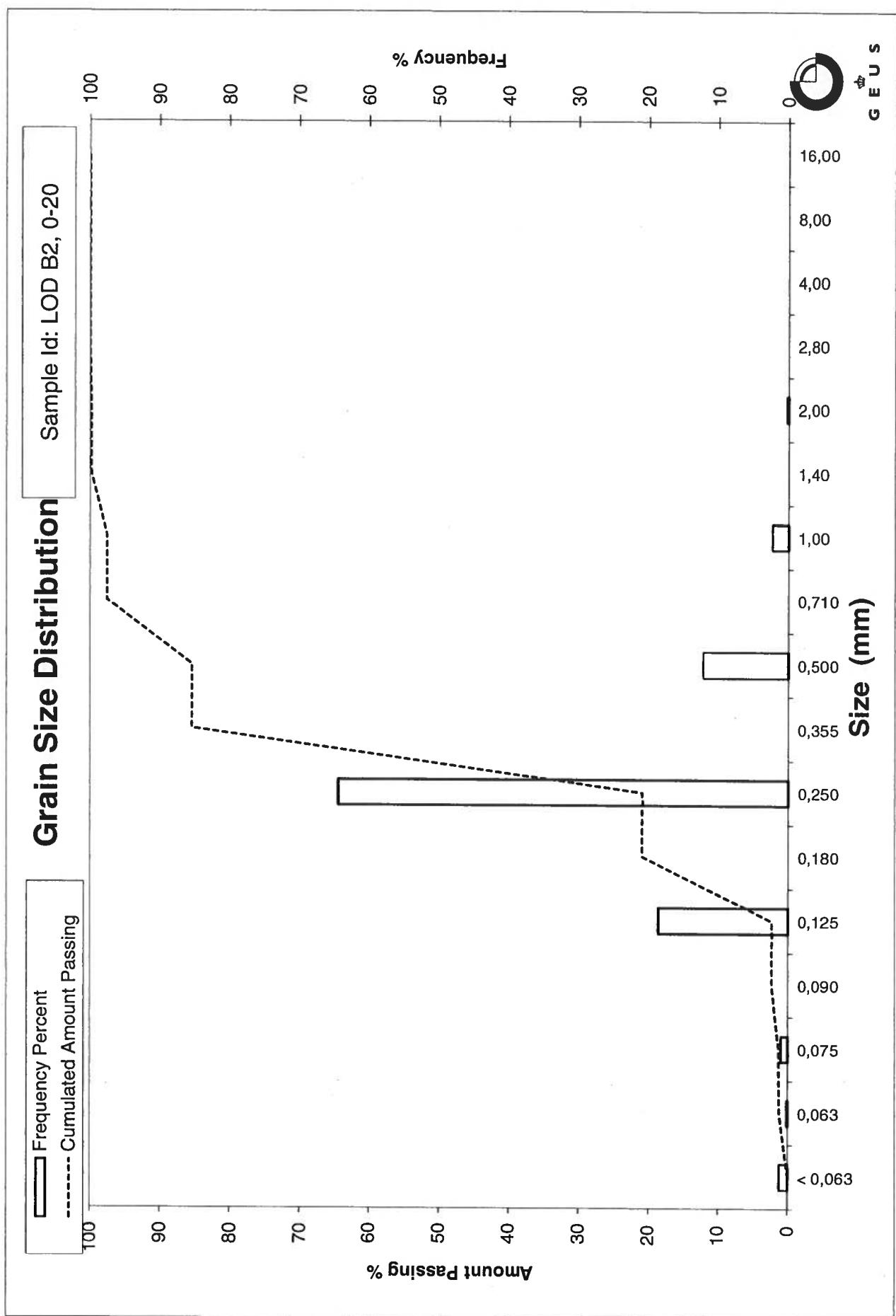
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B2, 100-120
Lab. Id: 200179
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 127,62 g

Size Fractions

Sieve Analysis
Gravel
Sand

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,09	0,07	99,93
2,80	-1,49	0,00	0,00	99,93
2,00	-1,00	0,43	0,34	99,59
1,40	-0,49	0,00	0,00	99,59
1,00	0,00	1,32	1,03	98,56
0,710	0,49	0,00	0,00	98,56
0,500	1,00	11,13	8,72	89,84
0,355	1,49	0,00	0,00	89,84
0,250	2,00	85,31	66,85	22,99
0,180	2,47	0,00	0,00	22,99
0,125	3,00	27,25	21,35	1,64
0,090	3,47	0,00	0,00	1,64
0,075	3,74	0,83	0,65	0,99
0,063	3,99	0,03	0,02	0,96
< 0,063	> 3,99	1,23	0,96	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,96
Sand, fine	(0,063 mm - 0,200 mm):	22,03
Sand, medium	(0,2 mm - 0,6 mm):	71,00
Sand, coarse	(0,6 mm - 2 mm):	5,60
Gravel	(> 2 mm):	0,41
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,62	0,68
16%	84%	0,35	1,53
25%	75%	0,33	1,59
40%	60%	0,31	1,70
Median 50%	50%	0,29	1,77
75%	25%	0,25	1,98
84%	16%	0,16	2,63
90%	10%	0,15	2,77
95%	5%	0,13	2,90

Moments Statistics

Mean	1,98
Sorting	0,61
Skewness	0,29
Kurtosis	2,34
Uniformity Coefficient	2,10

The analysis is executed according to DS 405.9
extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

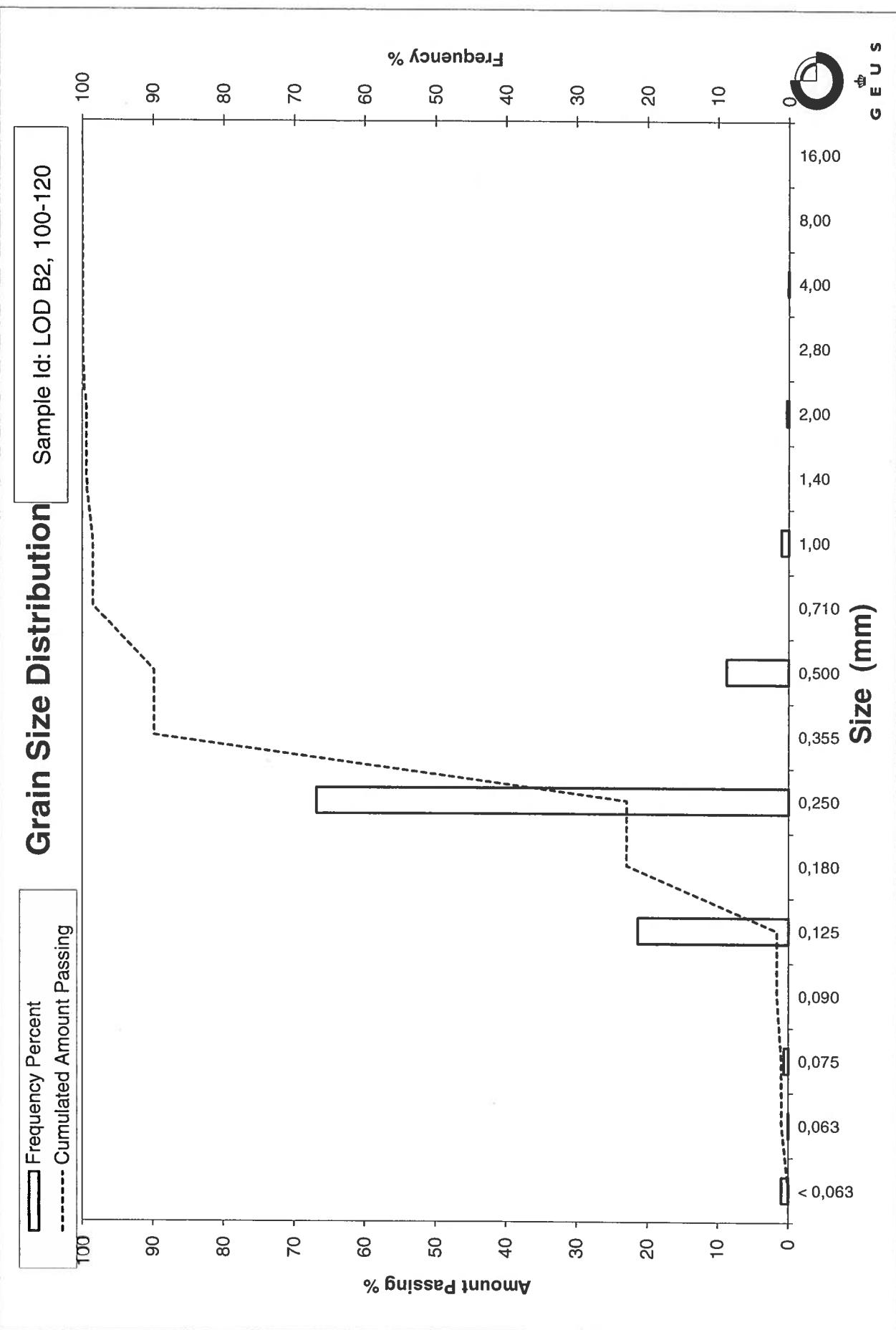
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient (d_{60} / d_{10}) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B2, 200-220
Lab. Id: 200180
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 126,82 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,25	0,20	99,80
1,40	-0,49	0,00	0,00	99,80
1,00	0,00	2,29	1,81	98,00
0,710	0,49	0,00	0,00	98,00
0,500	1,00	13,58	10,71	87,29
0,355	1,49	0,00	0,00	87,29
0,250	2,00	85,46	67,39	19,90
0,180	2,47	0,00	0,00	19,90
0,125	3,00	23,38	18,44	1,47
0,090	3,47	0,00	0,00	1,47
0,075	3,74	0,56	0,44	1,03
0,063	3,99	0,00	0,00	1,03
< 0,063	> 3,99	1,30	1,03	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,03
Sand, fine	(0,063 mm - 0,200 mm): 18,88
Sand, medium	(0,2 mm - 0,6 mm): 72,49
Sand, coarse	(0,6 mm - 2 mm): 7,41
Gravel	(> 2 mm): 0,20
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,65	0,62
16%	84%	0,35	1,52
25%	75%	0,34	1,57
40%	60%	0,31	1,68
Median 50%	50%	0,30	1,75
75%	25%	0,26	1,95
84%	16%	0,17	2,57
90%	10%	0,15	2,73
95%	5%	0,14	2,88

Moments Statistics

Mean	1,95
Sorting	0,61
Skewness	0,28
Kurtosis	2,44
Uniformity Coefficient	2,08

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

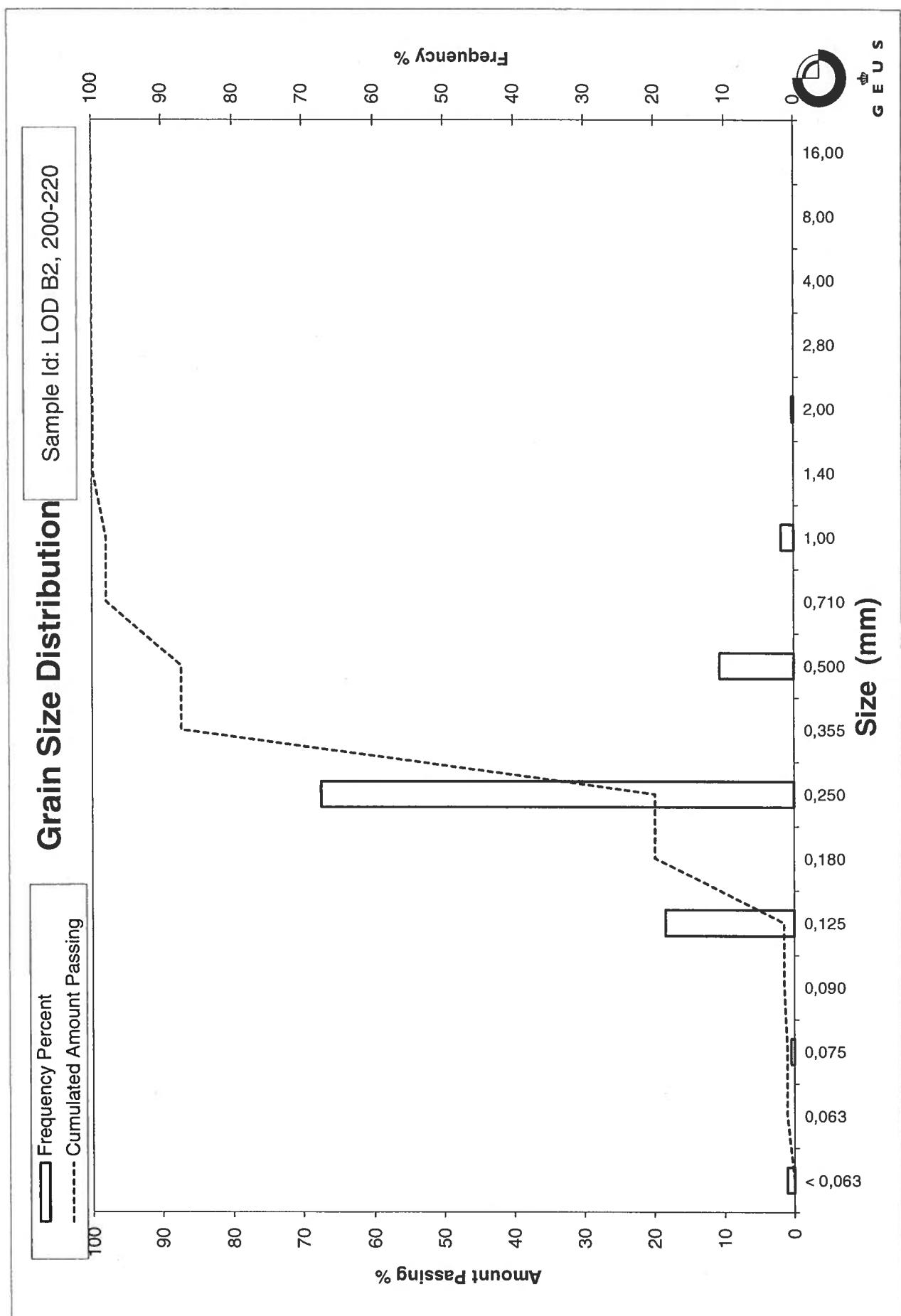
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B2, 300-320
Lab. Id: 200181
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 127,05 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,12	0,09	99,91
0,710	0,49	0,00	0,00	99,91
0,500	1,00	1,23	0,97	98,94
0,355	1,49	0,00	0,00	98,94
0,250	2,00	68,00	53,52	45,42
0,180	2,47	0,00	0,00	45,42
0,125	3,00	53,65	42,23	3,19
0,090	3,47	0,00	0,00	3,19
0,075	3,74	2,71	2,13	1,05
0,063	3,99	0,16	0,13	0,93
< 0,063	> 3,99	1,18	0,93	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,93
Sand, fine	(0,063 mm - 0,200 mm):	44,49
Sand, medium	(0,2 mm - 0,6 mm):	53,98
Sand, coarse	(0,6 mm - 2 mm):	0,60
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,35	1,53
16%	84%	0,33	1,62
25%	75%	0,31	1,70
40%	60%	0,28	1,84
Median 50%	50%	0,26	1,95
75%	25%	0,15	2,70
84%	16%	0,14	2,82
90%	10%	0,13	2,90
95%	5%	0,13	2,97

Moments Statistics

Mean	2,13
Sorting	0,52
Skewness	0,43
Kurtosis	0,59
Uniformity Coefficient	2,08

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

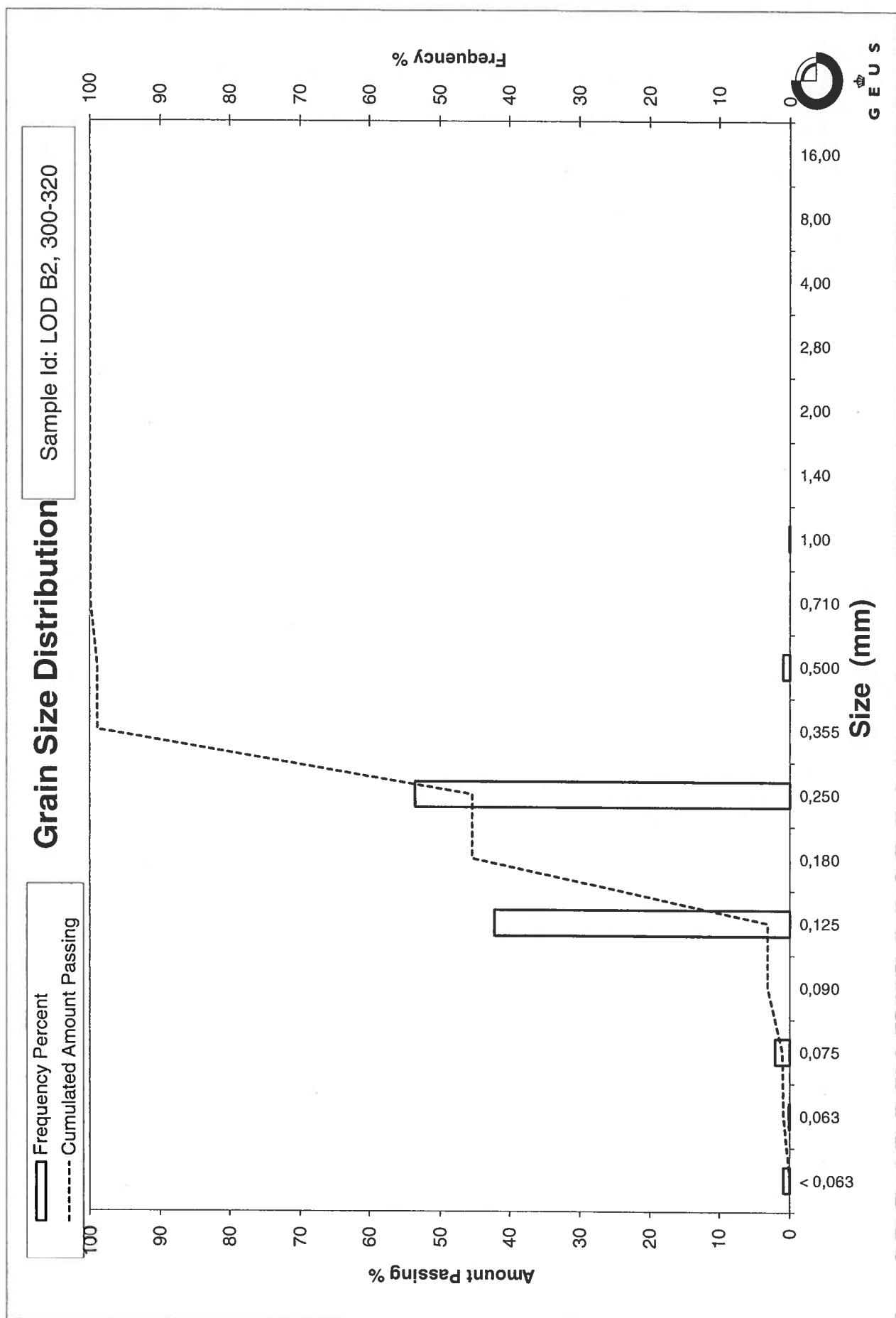
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($\phi 16\% + \phi 84\% - 2 * \phi 50\% / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\% / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient (d_{60} / d_{10}) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B2, 400-420
Lab. Id: 200182
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >2mm består af skaller



Total Weight 129,57 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,03	0,02	99,98
1,40	-0,49	0,00	0,00	99,98
1,00	0,00	0,75	0,58	99,40
0,710	0,49	0,00	0,00	99,40
0,500	1,00	4,34	3,35	96,05
0,355	1,49	0,00	0,00	96,05
0,250	2,00	58,96	45,50	50,54
0,180	2,47	0,00	0,00	50,54
0,125	3,00	58,27	44,97	5,57
0,090	3,47	0,00	0,00	5,57
0,075	3,74	4,56	3,52	2,05
0,063	3,99	0,28	0,22	1,84
< 0,063	> 3,99	2,38	1,84	0,00

Sieve Analysis

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,84
Sand, fine	(0,063 mm - 0,200 mm):	48,71
Sand, medium	(0,2 mm - 0,6 mm):	47,10
Sand, coarse	(0,6 mm - 2 mm):	2,33
Gravel	(> 2 mm):	0,02
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,35	1,50
16%	84%	0,33	1,61
25%	75%	0,31	1,71
40%	60%	0,27	1,88
Median 50%	50%	0,18	2,48
75%	25%	0,15	2,75
84%	16%	0,14	2,86
90%	10%	0,13	2,94
95%	5%	0,09	3,51

Moments Statistics

Mean	2,32
Sorting	0,62
Skewness	-0,18
Kurtosis	0,79
Uniformity Coefficient	2,08

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\%$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%}-\phi_{16\%}$) / 4 + ($\phi_{95\%}-\phi_{5\%}$) / 6.6 (Folk and Ward 1957)

Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

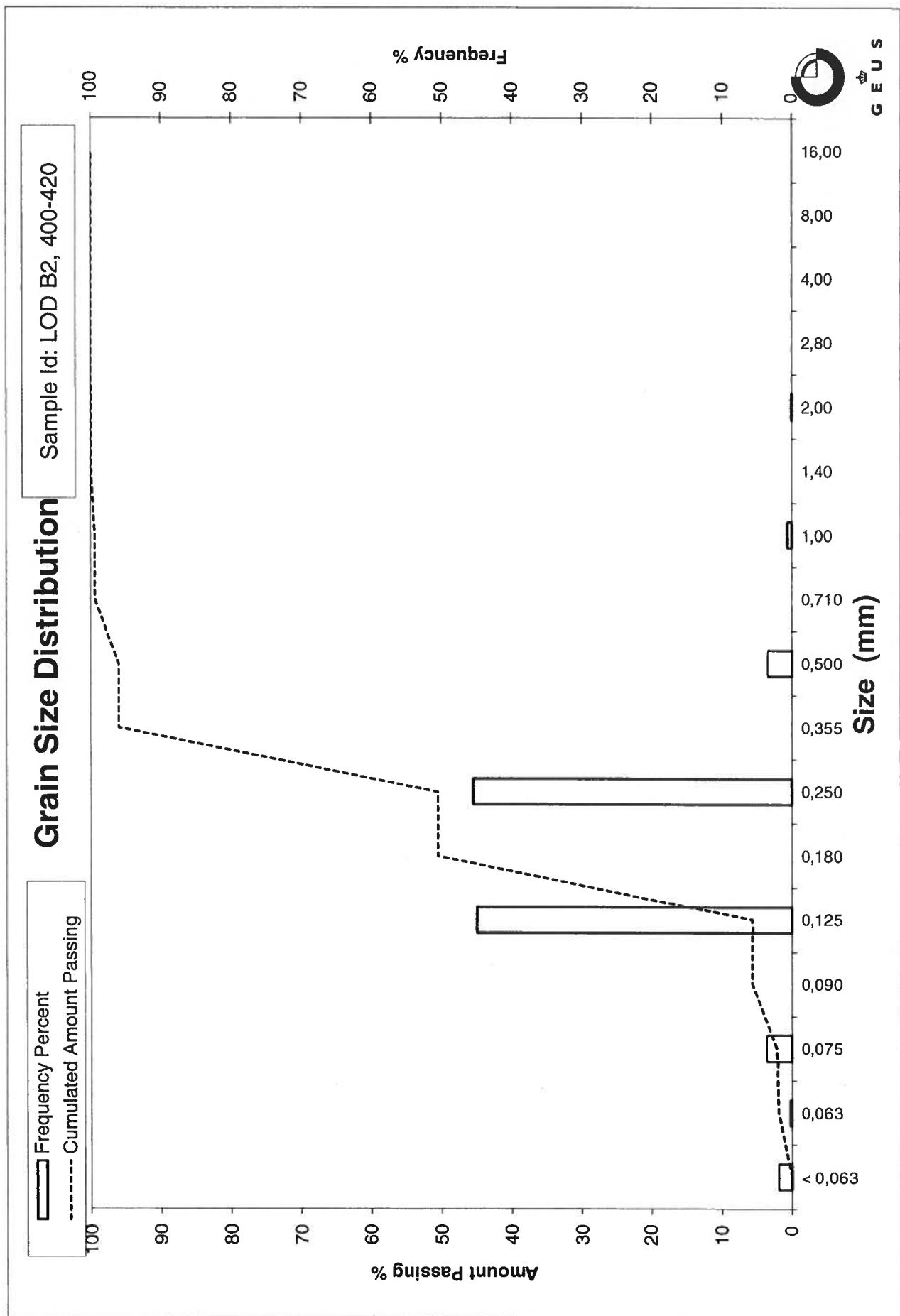
Skewness ($\phi16\% + \phi84\% - 2*\phi50\%$) / ($2*(\phi84\% - \phi16\%)$) + ($\phi5\% + \phi95\% - 2*\phi50\%$) / ($2*(\phi95\% - \phi5\%)$) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dof-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

**Size Classes and Percentiles
are found by linear interpolation**

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Grain Size Distribution

Geotechnical

Sample Id: LOD B2, 480-500
Lab. Id: 200183
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 132,44 g

Size Fractions

Size mm	Size ϕ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,73	0,55	99,45
1,40	-0,49	0,00	0,00	99,45
1,00	0,00	4,00	3,02	96,43
0,710	0,49	0,00	0,00	96,43
0,500	1,00	18,64	14,07	82,35
0,355	1,49	0,00	0,00	82,35
0,250	2,00	74,07	55,93	26,43
0,180	2,47	0,00	0,00	26,43
0,125	3,00	32,28	24,37	2,05
0,090	3,47	0,00	0,00	2,05
0,075	3,74	1,01	0,76	1,29
0,063	3,99	0,08	0,06	1,23
< 0,063	> 3,99	1,63	1,23	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,23
Sand, fine	(0,063 mm - 0,200 mm):	25,20
Sand, medium	(0,2 mm - 0,6 mm):	62,63
Sand, coarse	(0,6 mm - 2 mm):	10,39
Gravel	(> 2 mm):	0,55
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	ϕ
Amount in sieve	Amount passing		
5%	95%	0,69	0,54
16%	84%	0,52	0,93
25%	75%	0,34	1,55
40%	60%	0,31	1,68
Median 50%	50%	0,29	1,76
75%	25%	0,18	2,50
84%	16%	0,16	2,68
90%	10%	0,14	2,81
95%	5%	0,13	2,93

Moments Statistics

Mean	1,79
Sorting	0,80
Skewness	0,01
Kurtosis	1,03
Uniformity Coefficient	2,19

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

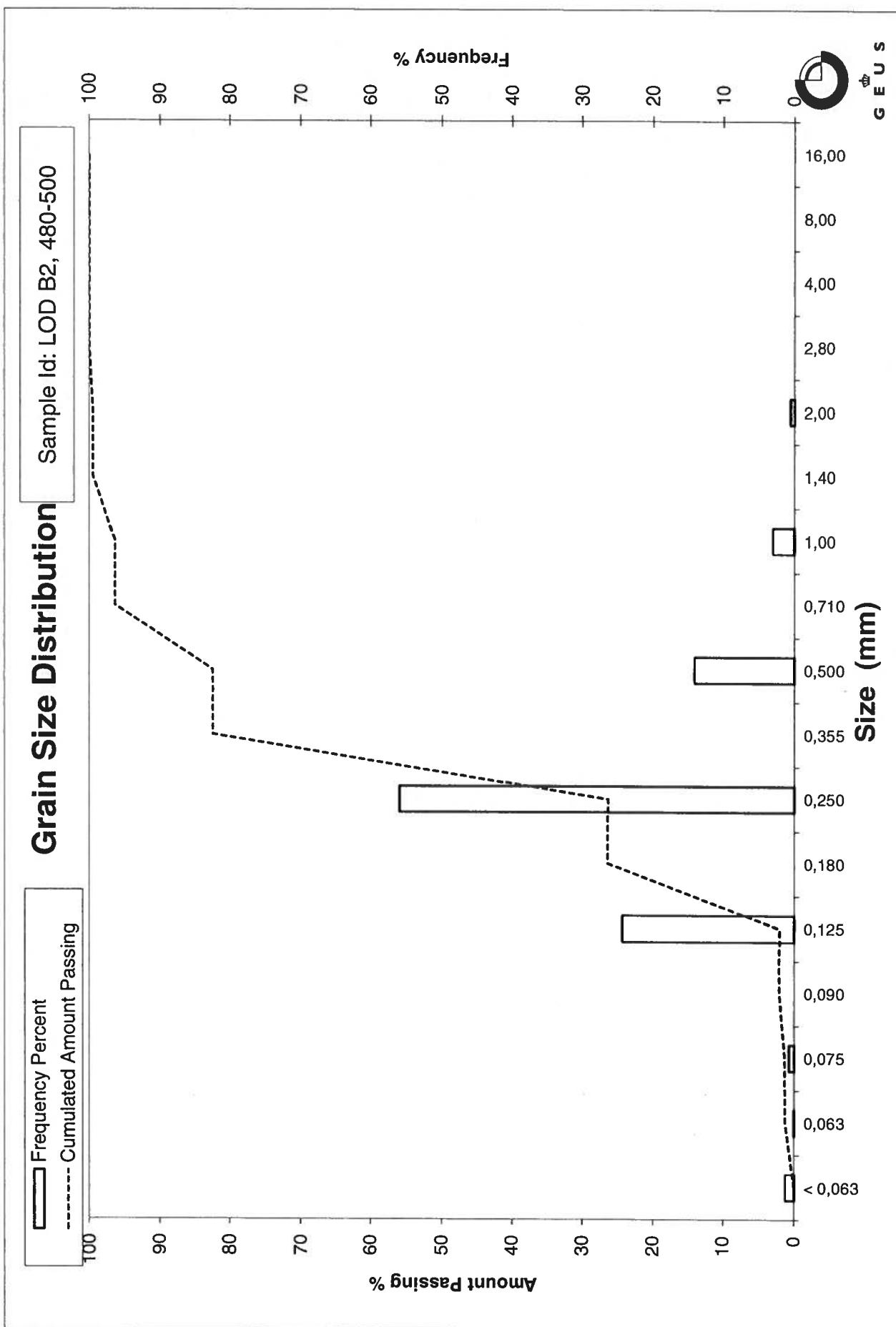
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B3, 20-40
Lab. Id: 200218
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 263,3 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	8,23	3,13	96,87
8,00	-3,00	9,28	3,52	93,35
4,00	-2,00	5,84	2,22	91,13
2,80	-1,49	0,00	0,00	91,13
2,00	-1,00	12,19	4,63	86,50
1,40	-0,49	0,00	0,00	86,50
1,00	0,00	14,94	5,67	80,83
0,710	0,49	0,00	0,00	80,83
0,500	1,00	53,18	20,20	60,63
0,355	1,49	0,00	0,00	60,63
0,250	2,00	129,72	49,27	11,36
0,180	2,47	0,00	0,00	11,36
0,125	3,00	28,00	10,64	0,73
0,090	3,47	0,00	0,00	0,73
0,075	3,74	0,41	0,16	0,57
0,063	3,99	0,00	0,00	0,57
< 0,063	> 3,99	1,51	0,57	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,57
Sand, fine	(0,063 mm - 0,200 mm): 10,79
Sand, medium	(0,2 mm - 0,6 mm): 58,88
Sand, coarse	(0,6 mm - 2 mm): 16,25
Gravel	(> 2 mm): 13,50
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	11,75	-3,55
16%	84%	1,22	-0,29
25%	75%	0,65	0,62
40%	60%	0,35	1,50
Median 50%	50%	0,33	1,59
75%	25%	0,28	1,84
84%	16%	0,26	1,94
90%	10%	0,17	2,53
95%	5%	0,15	2,77

Moments Statistics

Mean	1,08
Sorting	1,52
Skewness	-0,66
Kurtosis	2,13
Uniformity Coefficient	2,04

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

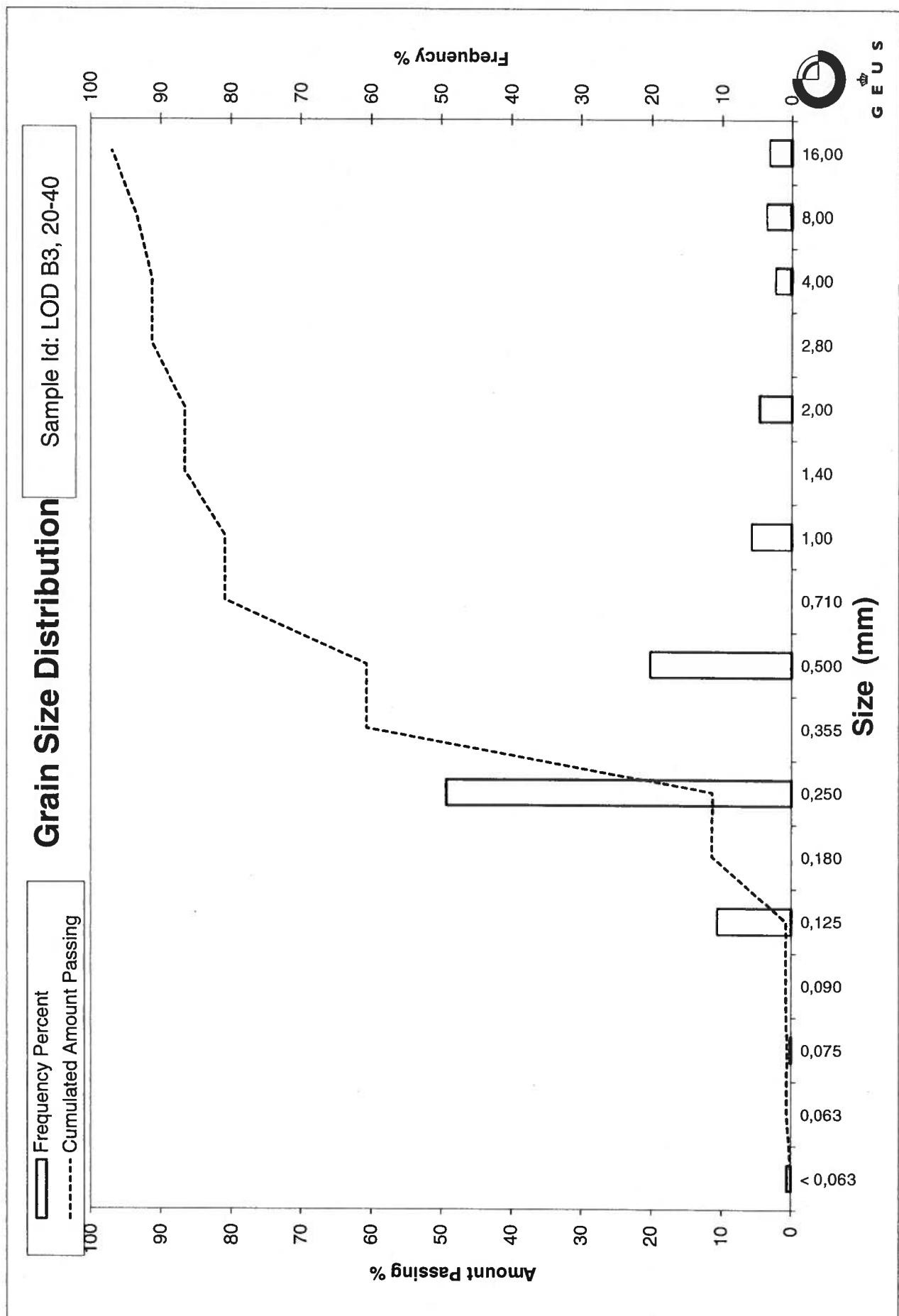
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgr-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B3, 120-140
Lab. Id: 200219
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 104,49 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,07	0,07	99,93
0,710	0,49	0,00	0,00	99,93
0,500	1,00	0,21	0,20	99,73
0,355	1,49	0,00	0,00	99,73
0,250	2,00	48,42	46,34	53,39
0,180	2,47	0,00	0,00	53,39
0,125	3,00	52,60	50,34	3,05
0,090	3,47	0,00	0,00	3,05
0,075	3,74	2,15	2,06	1,00
0,063	3,99	0,17	0,16	0,83
< 0,063	> 3,99	0,87	0,83	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,83
Sand, fine	(0,063 mm - 0,200 mm):	52,56
Sand, medium	(0,2 mm - 0,6 mm):	46,44
Sand, coarse	(0,6 mm - 2 mm):	0,17
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,34	1,54
16%	84%	0,32	1,65
25%	75%	0,30	1,74
40%	60%	0,26	1,92
Median 50%	50%	0,18	2,50
75%	25%	0,15	2,75
84%	16%	0,14	2,85
90%	10%	0,13	2,91
95%	5%	0,13	2,98

Moments Statistics

Mean	2,33
Sorting	0,52
Skewness	-0,39
Kurtosis	0,59
Uniformity Coefficient	2,00

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

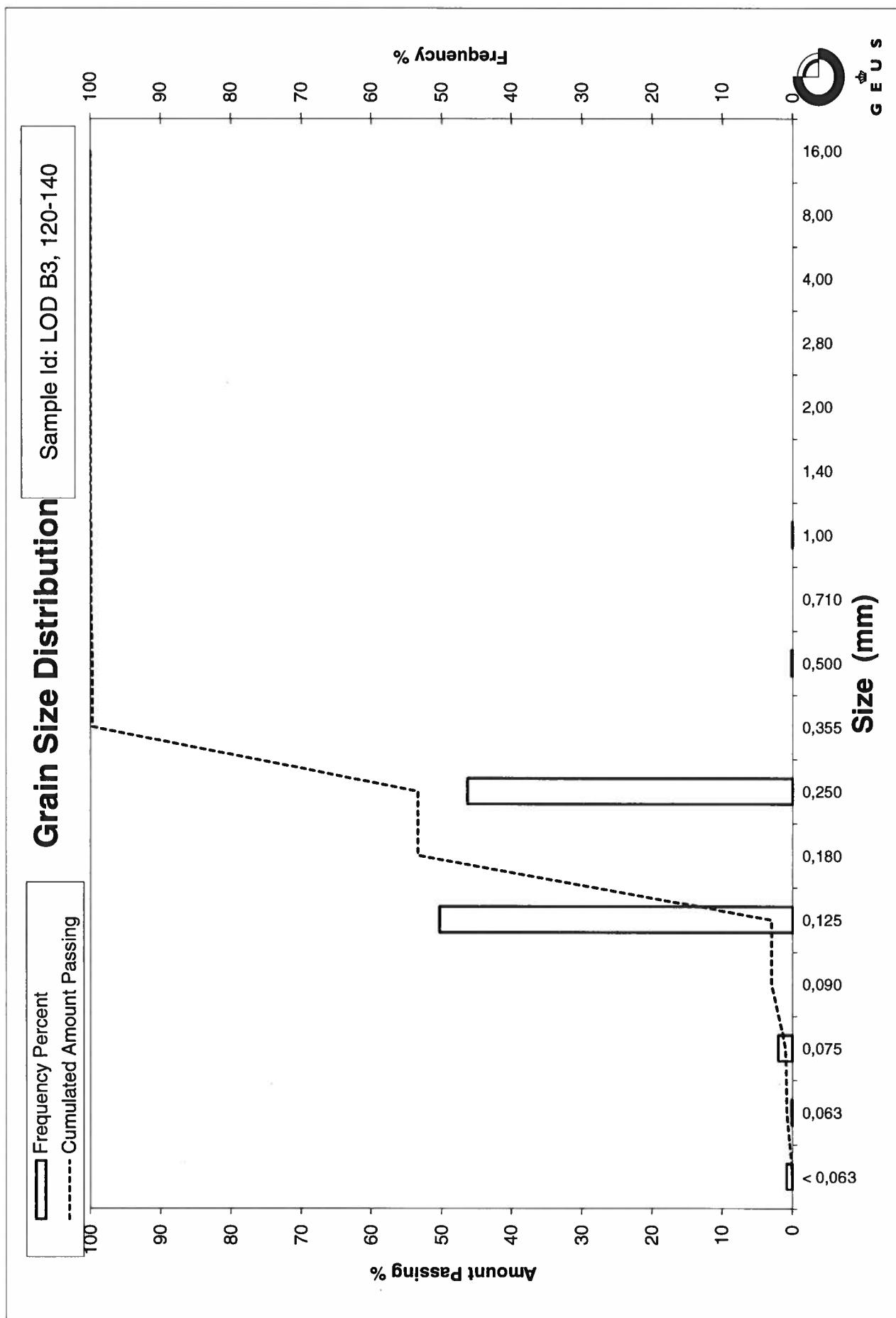
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B3, 220-240
Lab. Id: 200220
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 103,08 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,08	0,08	99,92
2,80	-1,49	0,00	0,00	99,92
2,00	-1,00	0,00	0,00	99,92
1,40	-0,49	0,00	0,00	99,92
1,00	0,00	0,26	0,25	99,67
0,710	0,49	0,00	0,00	99,67
0,500	1,00	2,76	2,68	96,99
0,355	1,49	0,00	0,00	96,99
0,250	2,00	57,41	55,69	41,30
0,180	2,47	0,00	0,00	41,30
0,125	3,00	38,90	37,74	3,56
0,090	3,47	0,00	0,00	3,56
0,075	3,74	2,30	2,23	1,33
0,063	3,99	0,23	0,22	1,11
< 0,063	> 3,99	1,14	1,11	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %	
Silt and clay	(< 0,063 mm):	1,11
Sand, fine	(0,063 mm - 0,200 mm):	40,19
Sand, medium	(0,2 mm - 0,6 mm):	56,97
Sand, coarse	(0,6 mm - 2 mm):	1,65
Gravel	(> 2 mm):	0,08
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,35	1,51
16%	84%	0,33	1,60
25%	75%	0,31	1,67
40%	60%	0,29	1,81
Median 50%	50%	0,27	1,91
75%	25%	0,16	2,68
84%	16%	0,14	2,80
90%	10%	0,13	2,90
95%	5%	0,13	2,98

Moments Statistics

Mean	2,10
Sorting	0,52
Skewness	0,47
Kurtosis	0,60
Uniformity Coefficient	2,12

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

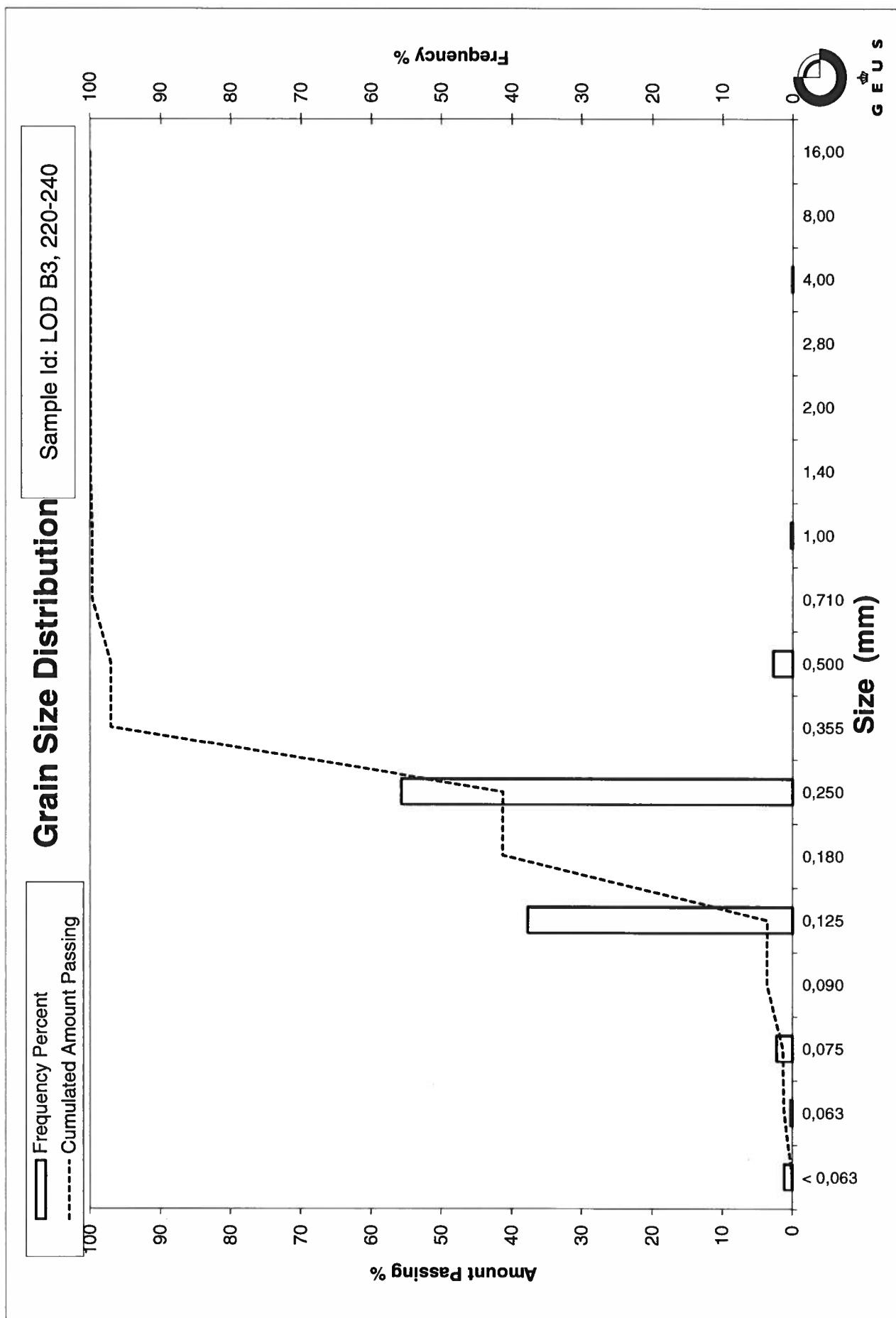
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B3, 320-340
Lab. Id: 200221
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 107,9 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,15	0,14	99,86
2,80	-1,49	0,00	0,00	99,86
2,00	-1,00	0,22	0,20	99,66
1,40	-0,49	0,00	0,00	99,66
1,00	0,00	2,80	2,59	97,06
0,710	0,49	0,00	0,00	97,06
0,500	1,00	11,83	10,96	86,10
0,355	1,49	0,00	0,00	86,10
0,250	2,00	68,30	63,30	22,80
0,180	2,47	0,00	0,00	22,80
0,125	3,00	23,00	21,32	1,48
0,090	3,47	0,00	0,00	1,48
0,075	3,74	0,56	0,52	0,96
0,063	3,99	0,02	0,02	0,95
< 0,063	> 3,99	1,02	0,95	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,95
Sand, fine	(0,063 mm - 0,200 mm):	21,85
Sand, medium	(0,2 mm - 0,6 mm):	68,52
Sand, coarse	(0,6 mm - 2 mm):	8,34
Gravel	(> 2 mm):	0,34
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,67	0,58
16%	84%	0,35	1,51
25%	75%	0,34	1,57
40%	60%	0,31	1,68
Median 50%	50%	0,30	1,76
75%	25%	0,25	1,98
84%	16%	0,16	2,62
90%	10%	0,15	2,77
95%	5%	0,13	2,90

Moments Statistics

Mean	1,96
Sorting	0,63
Skewness	0,26
Kurtosis	2,33
Uniformity Coefficient	2,12

The analysis is executed according to DS 405.9
extended by sieves to the ½ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

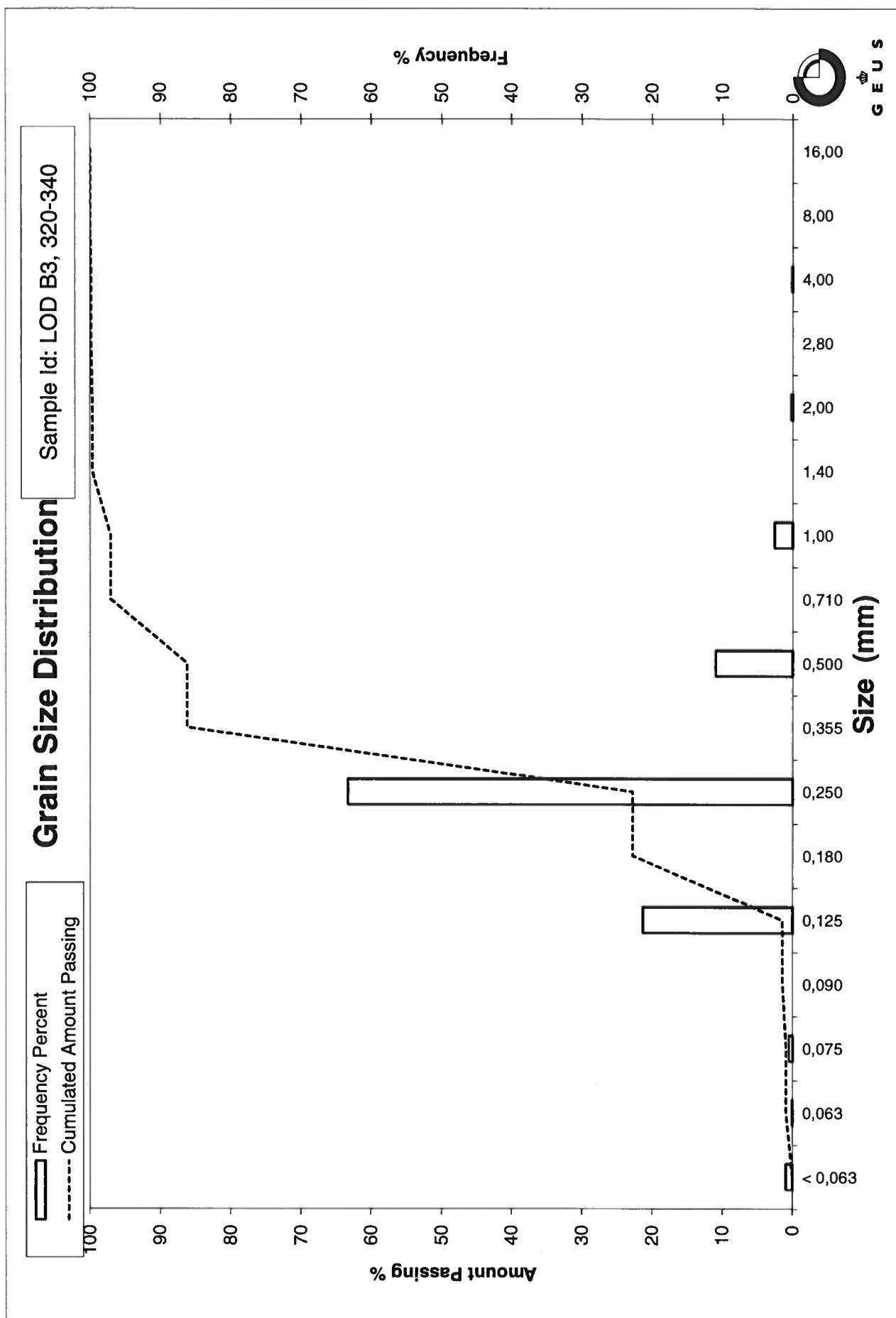
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (DGF-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on
"Amount in sieve". Uniformity coefficient is based on
"Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B3, 400-420
Lab. Id: 200222
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 104,97 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,13	0,12	99,88
2,80	-1,49	0,00	0,00	99,88
2,00	-1,00	1,39	1,32	98,55
1,40	-0,49	0,00	0,00	98,55
1,00	0,00	5,74	5,47	93,08
0,710	0,49	0,00	0,00	93,08
0,500	1,00	17,29	16,47	76,61
0,355	1,49	0,00	0,00	76,61
0,250	2,00	50,65	48,25	28,36
0,180	2,47	0,00	0,00	28,36
0,125	3,00	27,17	25,88	2,48
0,090	3,47	0,00	0,00	2,48
0,075	3,74	1,20	1,14	1,33
0,063	3,99	0,06	0,06	1,28
< 0,063	> 3,99	1,34	1,28	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,28
Sand, fine	(0,063 mm - 0,200 mm): 27,08
Sand, medium	(0,2 mm - 0,6 mm): 56,10
Sand, coarse	(0,6 mm - 2 mm): 14,10
Gravel	(> 2 mm): 1,45
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,14	-0,19
16%	84%	0,59	0,75
25%	75%	0,35	1,51
40%	60%	0,32	1,65
Median 50%	50%	0,30	1,75
75%	25%	0,17	2,53
84%	16%	0,15	2,70
90%	10%	0,14	2,83
95%	5%	0,13	2,94

Moments Statistics

Mean	1,73
Sorting	0,96
Skewness	-0,13
Kurtosis	1,25
Uniformity Coefficient	2,26

The analysis is executed according to DS 405.9
extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

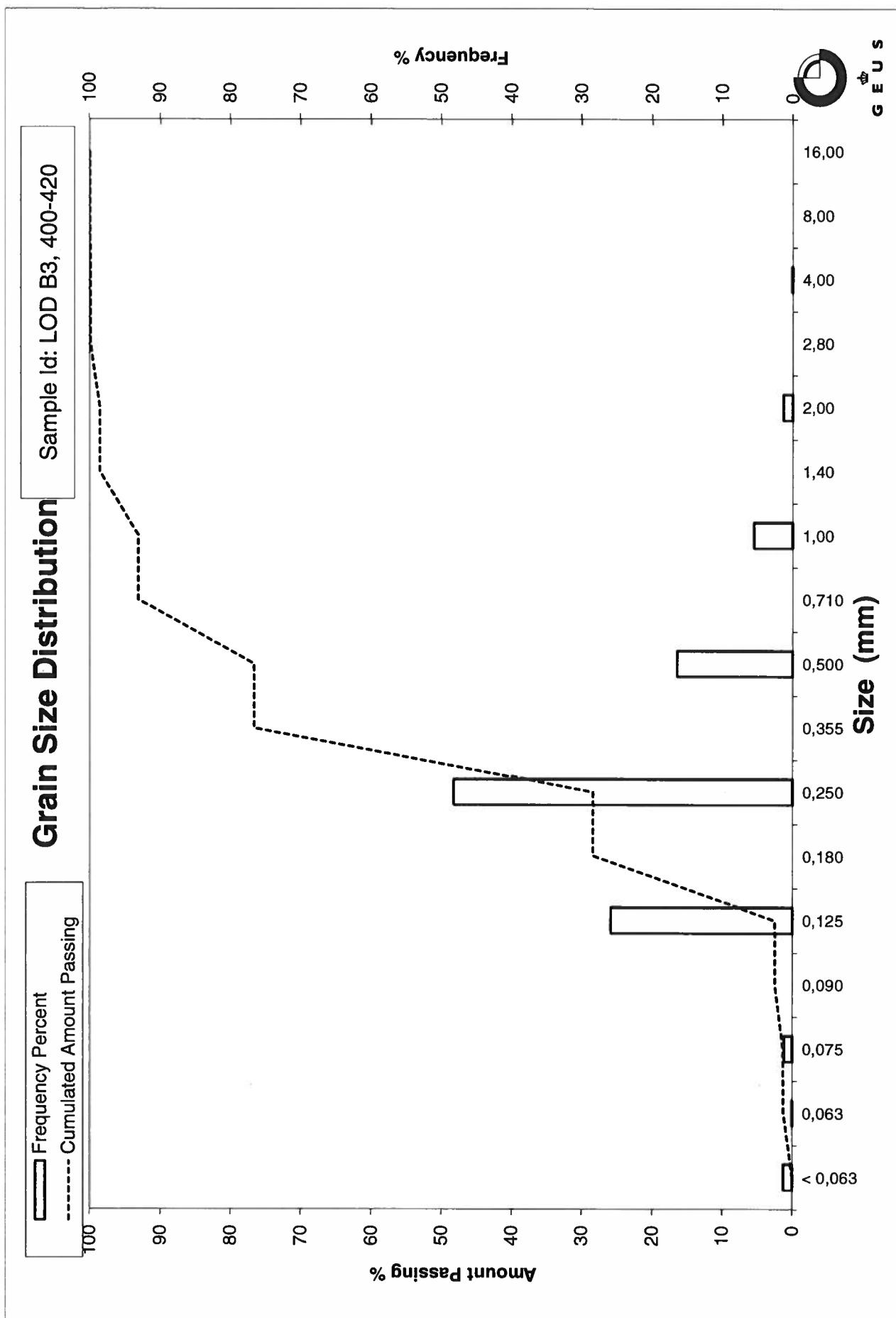
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on
"Amount in sieve". Uniformity coefficient is based on
"Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B3, 455-470
Lab. Id: 200223
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 97,33 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,68	0,70	99,30
2,80	-1,49	0,00	0,00	99,30
2,00	-1,00	0,33	0,34	98,96
1,40	-0,49	0,00	0,00	98,96
1,00	0,00	0,51	0,52	98,44
0,710	0,49	0,00	0,00	98,44
0,500	1,00	0,89	0,91	97,52
0,355	1,49	0,00	0,00	97,52
0,250	2,00	5,73	5,89	91,64
0,180	2,47	0,00	0,00	91,64
0,125	3,00	79,50	81,68	9,96
0,090	3,47	0,00	0,00	9,96
0,075	3,74	7,44	7,64	2,31
0,063	3,99	0,24	0,25	2,07
< 0,063	> 3,99	2,01	2,07	0,00

Gravel

Sand

Sieve Analysis

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 2,07
Sand, fine	(0,063 mm - 0,200 mm): 89,57
Sand, medium	(0,2 mm - 0,6 mm): 6,32
Sand, coarse	(0,6 mm - 2 mm): 1,00
Gravel	(> 2 mm): 1,04
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,31	1,69
16%	84%	0,17	2,52
25%	75%	0,17	2,57
40%	60%	0,16	2,66
Median 50%	50%	0,15	2,72
75%	25%	0,14	2,89
84%	16%	0,13	2,95
90%	10%	0,13	3,00
95%	5%	0,08	3,64

Moments Statistics

Mean	2,73
Sorting	0,40
Skewness	0,01
Kurtosis	2,49
Uniformity Coefficient	1,27

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

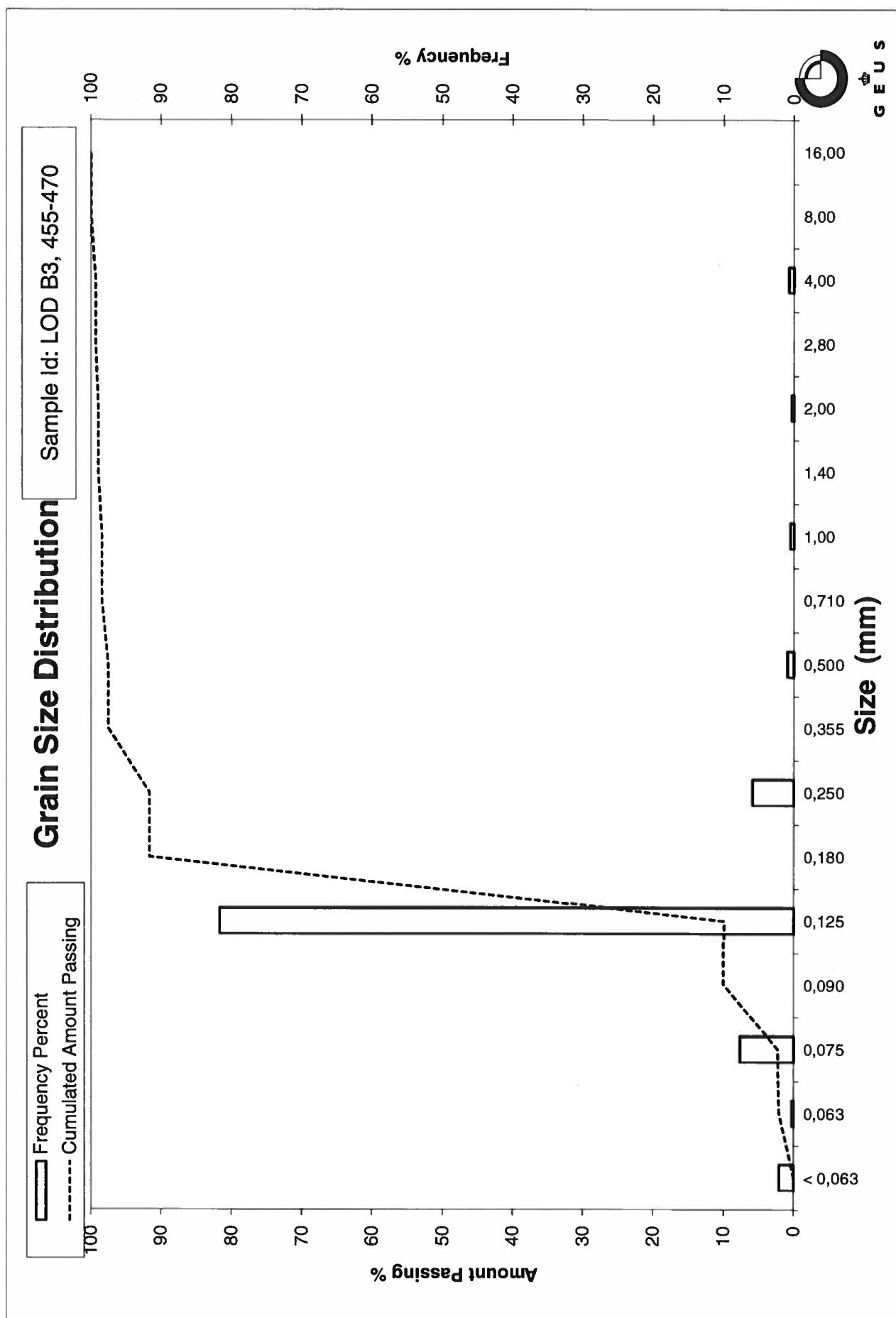
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgr-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B4, 20-40
Lab. Id: 200224
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >8mm heraf 0,67g skaller



Total Weight 281,74 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	18,26	6,48	93,52
4,00	-2,00	40,88	14,51	79,01
2,80	-1,49	0,00	0,00	79,01
2,00	-1,00	45,87	16,28	62,73
1,40	-0,49	0,00	0,00	62,73
1,00	0,00	31,71	11,25	51,47
0,710	0,49	0,00	0,00	51,47
0,500	1,00	47,82	16,97	34,50
0,355	1,49	0,00	0,00	34,50
0,250	2,00	84,87	30,12	4,38
0,180	2,47	0,00	0,00	4,38
0,125	3,00	9,82	3,49	0,89
0,090	3,47	0,00	0,00	0,89
0,075	3,74	0,89	0,31	0,58
0,063	3,99	0,00	0,00	0,58
< 0,063	> 3,99	1,62	0,58	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,58
Sand, fine	(0,063 mm - 0,200 mm): 3,80
Sand, medium	(0,2 mm - 0,6 mm): 38,21
Sand, coarse	(0,6 mm - 2 mm): 20,15
Gravel	(> 2 mm): 37,27
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	9,83	-3,30
16%	84%	5,38	-2,43
25%	75%	2,60	-1,38
40%	60%	1,30	-0,38
Median 50%	50%	0,69	0,53
75%	25%	0,32	1,64
84%	16%	0,29	1,78
90%	10%	0,27	1,89
95%	5%	0,25	1,99

Moments Statistics

Mean	-0,04
Sorting	1,85
Skewness	-0,43
Kurtosis	0,72
Uniformity Coefficient	4,83

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

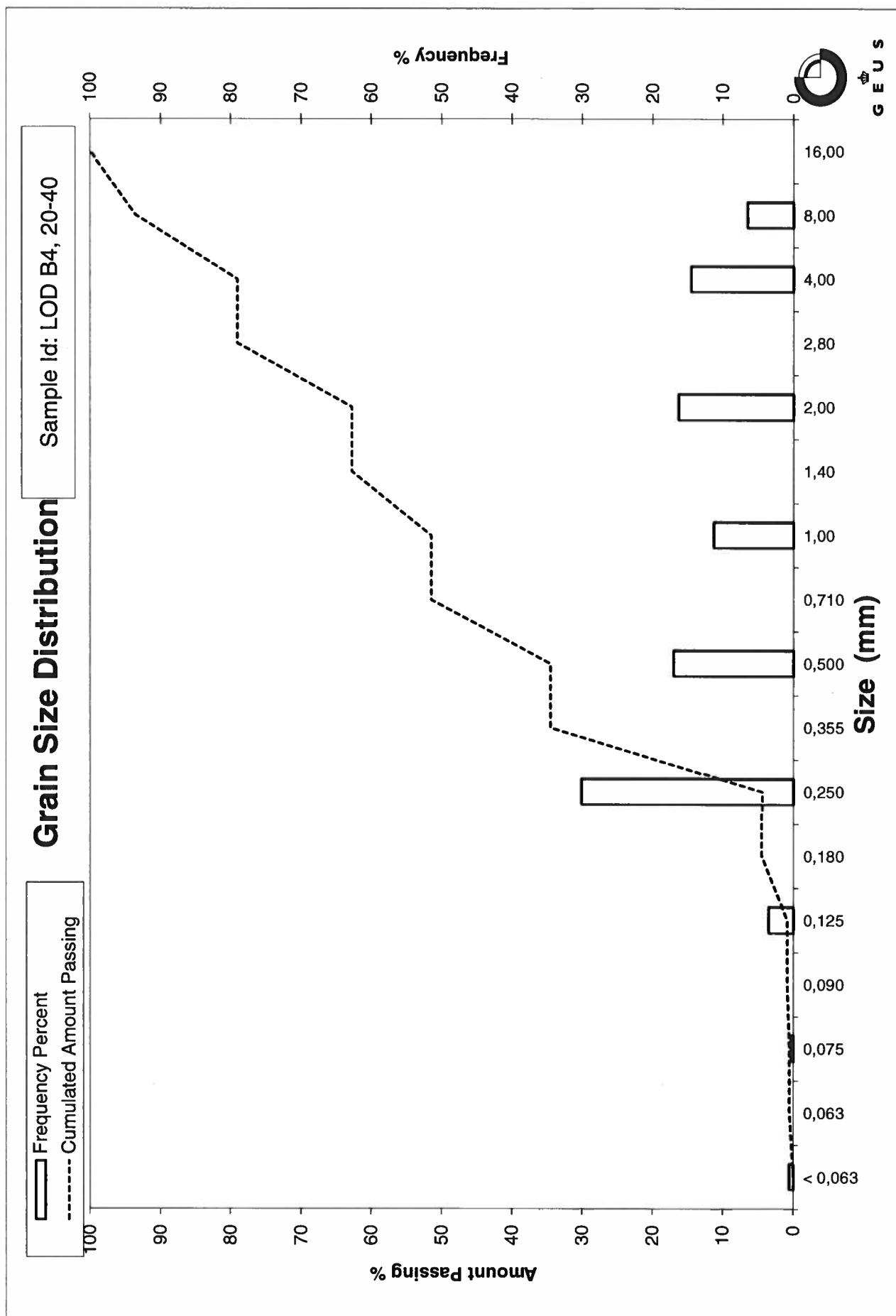
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B4, 100-120
Lab. Id: 200225
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >8mm heraf 0,64g skaller



Total Weight 291,74 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	8,29	2,84	97,16
4,00	-2,00	17,80	6,10	91,06
2,80	-1,49	0,00	0,00	91,06
2,00	-1,00	24,38	8,36	82,70
1,40	-0,49	0,00	0,00	82,70
1,00	0,00	21,39	7,33	75,37
0,710	0,49	0,00	0,00	75,37
0,500	1,00	48,00	16,45	58,92
0,355	1,49	0,00	0,00	58,92
0,250	2,00	153,95	52,77	6,15
0,180	2,47	0,00	0,00	6,15
0,125	3,00	15,46	5,30	0,85
0,090	3,47	0,00	0,00	0,85
0,075	3,74	1,01	0,35	0,50
0,063	3,99	0,00	0,00	0,50
< 0,063	> 3,99	1,46	0,50	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,50
Sand, fine	(0,063 mm - 0,200 mm): 5,65
Sand, medium	(0,2 mm - 0,6 mm): 60,60
Sand, coarse	(0,6 mm - 2 mm): 15,95
Gravel	(> 2 mm): 17,30
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	6,58	-2,72
16%	84%	2,12	-1,09
25%	75%	0,71	0,50
40%	60%	0,51	0,96
Median 50%	50%	0,34	1,57
75%	25%	0,29	1,80
84%	16%	0,27	1,89
90%	10%	0,26	1,96
95%	5%	0,17	2,57

Moments Statistics

Mean	0,79
Sorting	1,55
Skewness	-0,70
Kurtosis	1,68
Uniformity Coefficient	1,99

The analysis is executed according to DS 405.9
extended by sieves to the ½ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

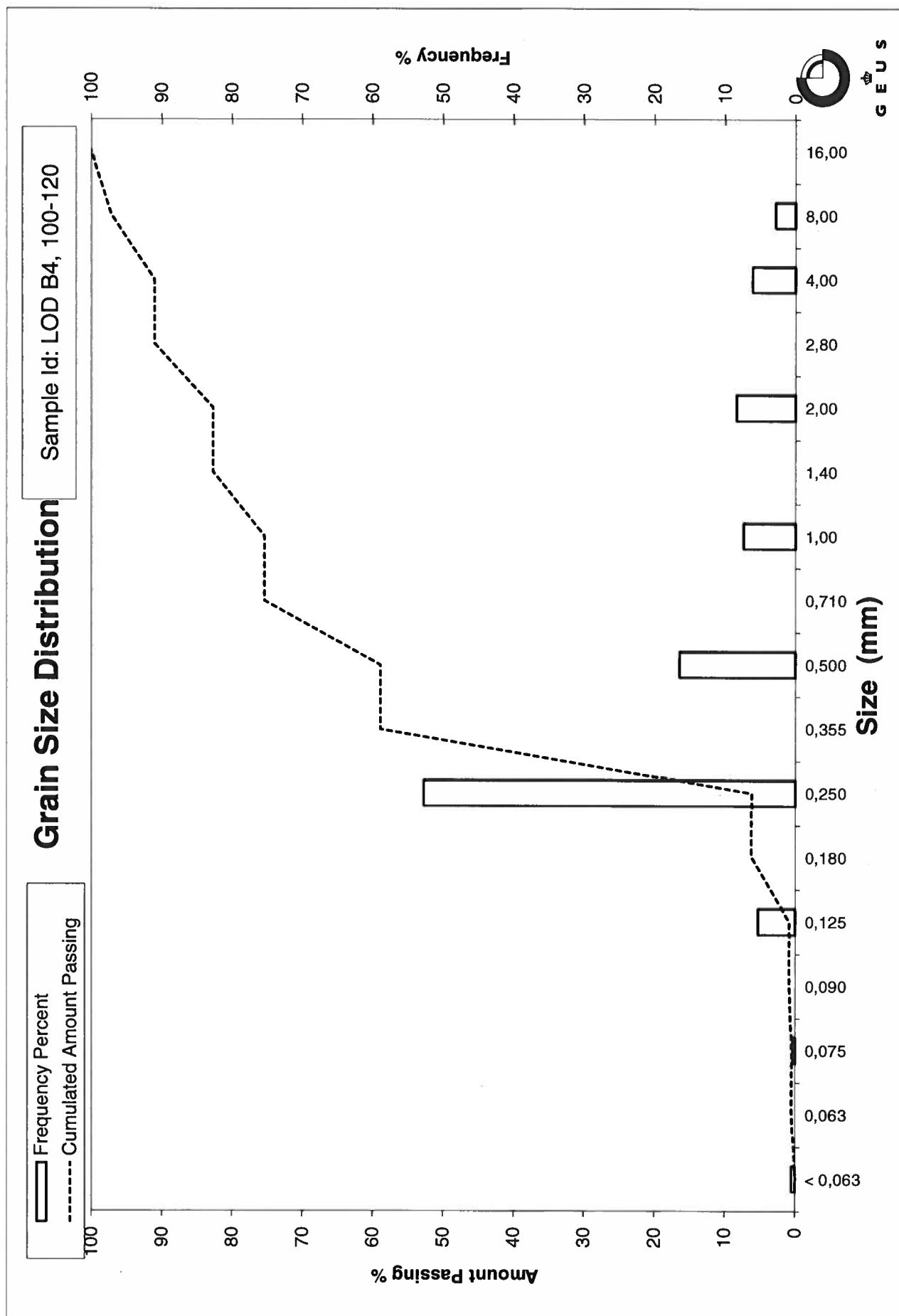
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d60\% / d10\%) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B4, 200-220
Lab. Id: 200226
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 277,24 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	5,65	2,04	97,96
4,00	-2,00	11,63	4,20	93,77
2,80	-1,49	0,00	0,00	93,77
2,00	-1,00	19,54	7,05	86,72
1,40	-0,49	0,00	0,00	86,72
1,00	0,00	20,43	7,37	79,35
0,710	0,49	0,00	0,00	79,35
0,500	1,00	47,69	17,20	62,15
0,355	1,49	0,00	0,00	62,15
0,250	2,00	146,90	52,99	9,16
0,180	2,47	0,00	0,00	9,16
0,125	3,00	22,45	8,10	1,06
0,090	3,47	0,00	0,00	1,06
0,075	3,74	0,84	0,30	0,76
0,063	3,99	0,05	0,02	0,74
< 0,063	> 3,99	2,05	0,74	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,74
Sand, fine	(0,063 mm - 0,200 mm):	8,42
Sand, medium	(0,2 mm - 0,6 mm):	61,18
Sand, coarse	(0,6 mm - 2 mm):	16,38
Gravel	(> 2 mm):	13,28
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	5,18	-2,37
16%	84%	1,25	-0,32
25%	75%	0,66	0,61
40%	60%	0,35	1,51
Median 50%	50%	0,33	1,60
75%	25%	0,28	1,83
84%	16%	0,26	1,92
90%	10%	0,25	1,99
95%	5%	0,15	2,72

Moments Statistics

Mean	1,06
Sorting	1,33
Skewness	-0,63
Kurtosis	1,71
Uniformity Coefficient	1,39

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

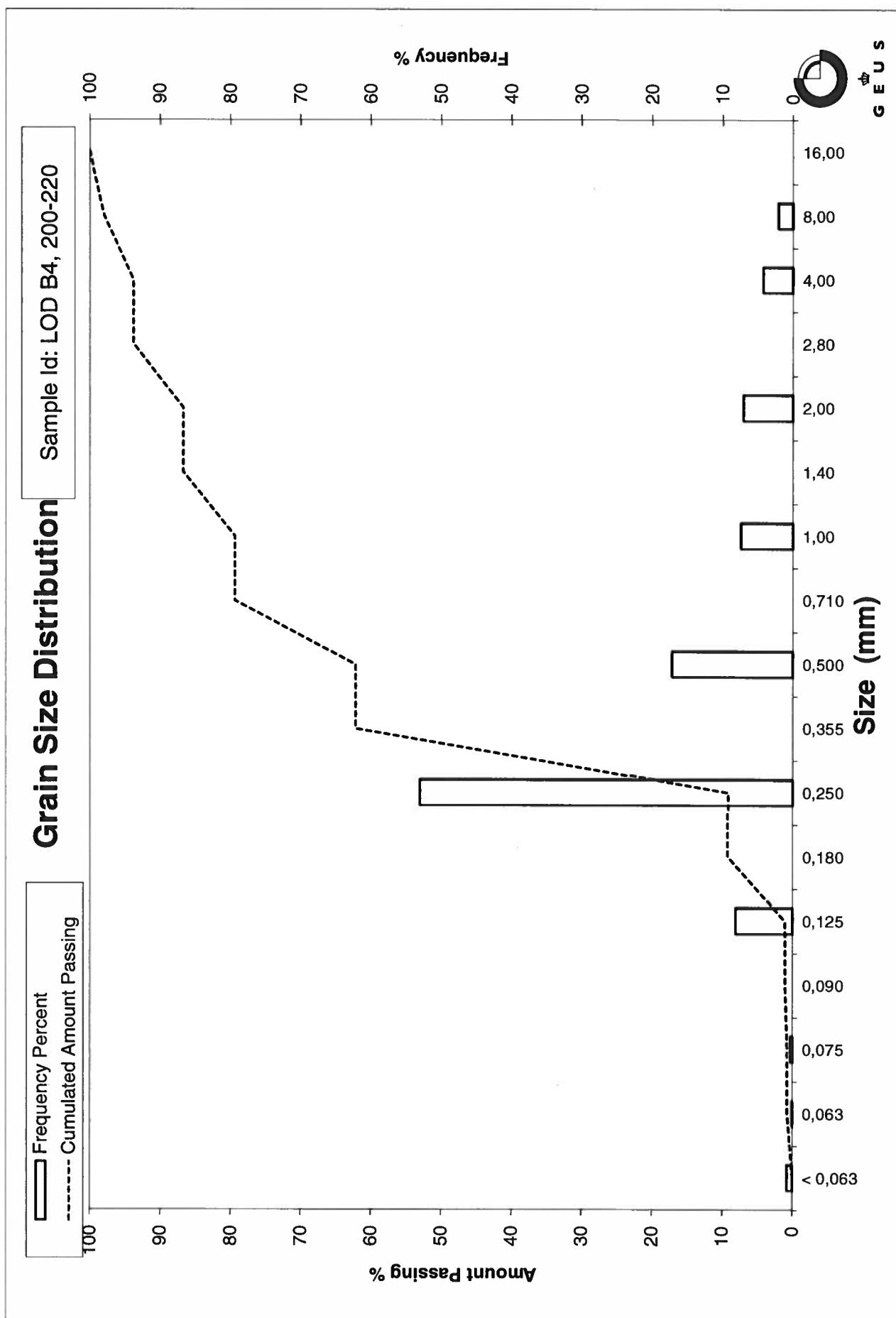
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient (d_{60} / d_{10}) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B4, 320-340
Lab. Id: 200227
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 271,53 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	4,92	1,81	98,19
4,00	-2,00	11,92	4,39	93,80
2,80	-1,49	0,00	0,00	93,80
2,00	-1,00	21,30	7,84	85,95
1,40	-0,49	0,00	0,00	85,95
1,00	0,00	23,39	8,61	77,34
0,710	0,49	0,00	0,00	77,34
0,500	1,00	45,21	16,65	60,69
0,355	1,49	0,00	0,00	60,69
0,250	2,00	137,13	50,50	10,18
0,180	2,47	0,00	0,00	10,18
0,125	3,00	23,13	8,52	1,67
0,090	3,47	0,00	0,00	1,67
0,075	3,74	2,17	0,80	0,87
0,063	3,99	0,13	0,05	0,82
< 0,063	> 3,99	2,22	0,82	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,82
Sand, fine	(0,063 mm - 0,200 mm): 9,37
Sand, medium	(0,2 mm - 0,6 mm): 58,43
Sand, coarse	(0,6 mm - 2 mm): 17,34
Gravel	(> 2 mm): 14,05
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	5,09	-2,35
16%	84%	1,31	-0,39
25%	75%	0,68	0,56
40%	60%	0,35	1,50
Median 50%	50%	0,33	1,59
75%	25%	0,28	1,83
84%	16%	0,26	1,93
90%	10%	0,18	2,48
95%	5%	0,15	2,77

Moments Statistics

Mean	1,04
Sorting	1,36
Skewness	-0,62
Kurtosis	1,64
Uniformity Coefficient	1,98

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

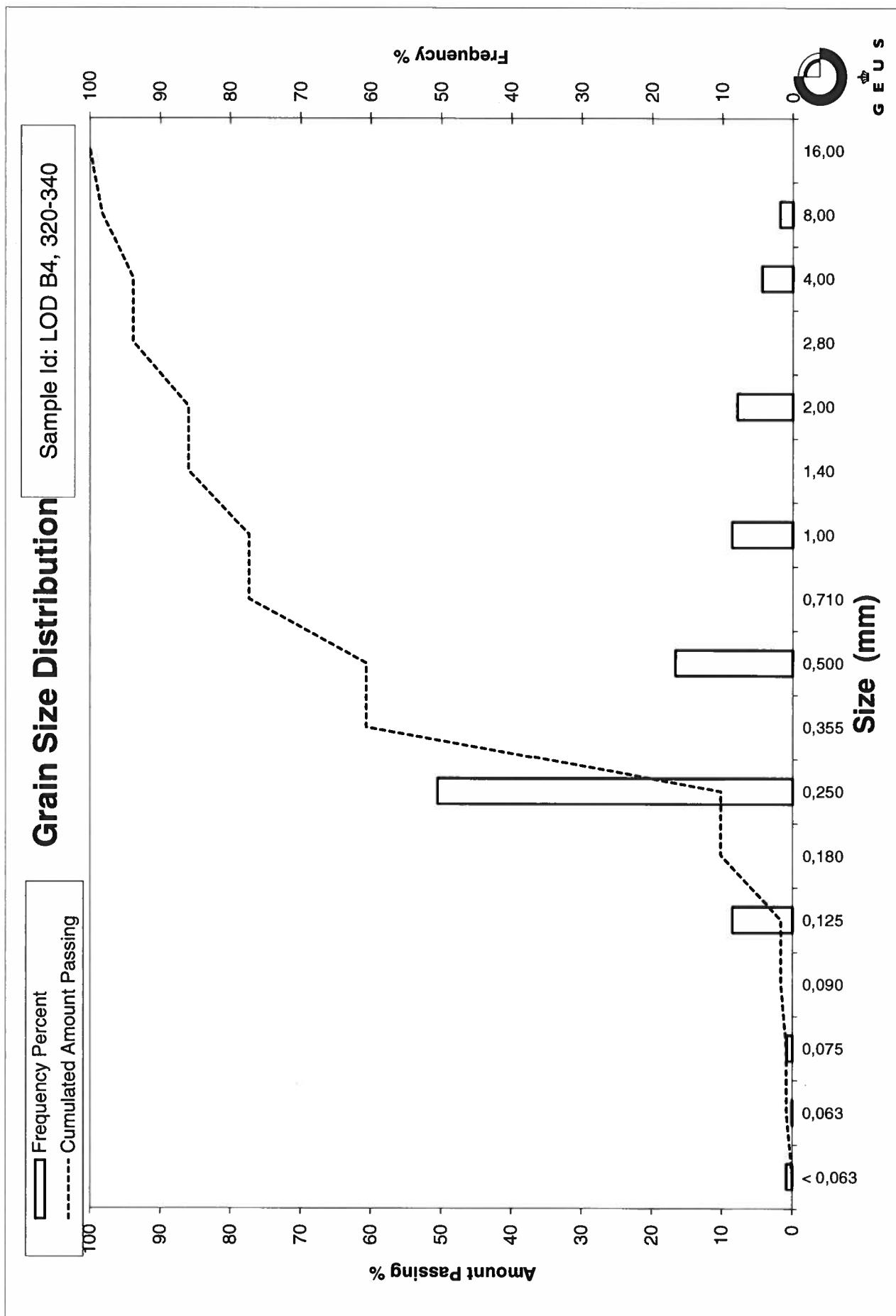
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (DGF-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B4, 400-420
Lab. Id: 200228
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >8mm heraf 0,58g skaller



Total Weight 259,21 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	5,52	2,13	97,87
4,00	-2,00	6,03	2,33	95,54
2,80	-1,49	0,00	0,00	95,54
2,00	-1,00	21,11	8,14	87,40
1,40	-0,49	0,00	0,00	87,40
1,00	0,00	25,02	9,65	77,75
0,710	0,49	0,00	0,00	77,75
0,500	1,00	45,22	17,45	60,30
0,355	1,49	0,00	0,00	60,30
0,250	2,00	131,35	50,67	9,63
0,180	2,47	0,00	0,00	9,63
0,125	3,00	21,74	8,39	1,24
0,090	3,47	0,00	0,00	1,24
0,075	3,74	0,93	0,36	0,88
0,063	3,99	0,07	0,03	0,85
< 0,063	> 3,99	2,21	0,85	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,85
Sand, fine	(0,063 mm - 0,200 mm): 8,77
Sand, medium	(0,2 mm - 0,6 mm): 58,98
Sand, coarse	(0,6 mm - 2 mm): 18,79
Gravel	(> 2 mm): 12,60
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	2,75	-1,46
16%	84%	1,26	-0,33
25%	75%	0,68	0,56
40%	60%	0,35	1,50
Median 50%	50%	0,33	1,58
75%	25%	0,28	1,83
84%	16%	0,26	1,93
90%	10%	0,25	2,00
95%	5%	0,15	2,74

Moments Statistics

Mean	1,06
Sorting	1,20
Skewness	-0,57
Kurtosis	1,36
Uniformity Coefficient	1,41

The analysis is executed according to DS 405.9
extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

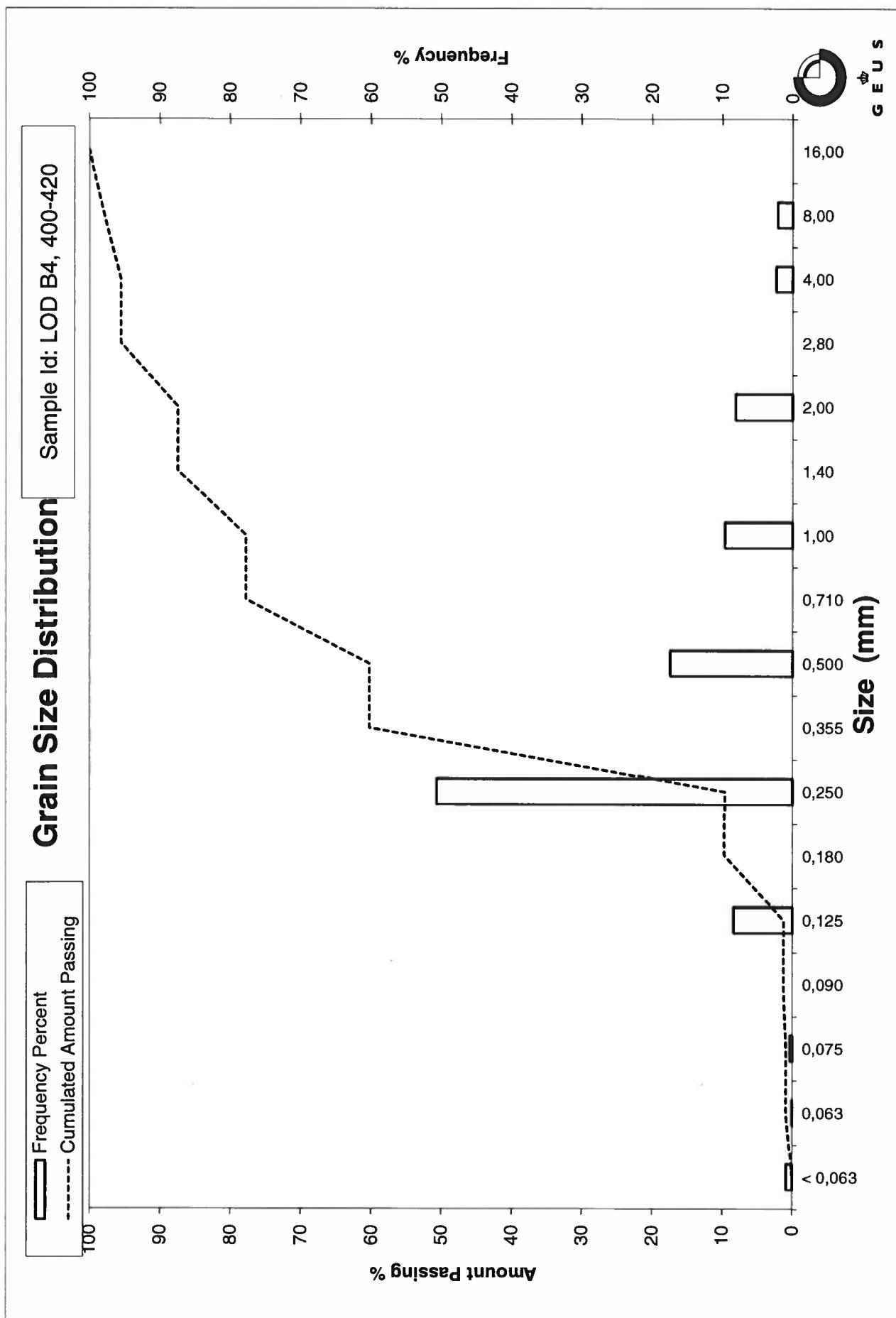
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d60\% / d10\%) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B4, 500-520
Lab. Id: 200229
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >4mm heraf 0,18g skaller



Total Weight 245,82 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	7,56	3,08	96,92
2,80	-1,49	0,00	0,00	96,92
2,00	-1,00	16,33	6,64	90,28
1,40	-0,49	0,00	0,00	90,28
1,00	0,00	22,91	9,32	80,96
0,710	0,49	0,00	0,00	80,96
0,500	1,00	52,69	21,43	59,53
0,355	1,49	0,00	0,00	59,53
0,250	2,00	122,01	49,63	9,89
0,180	2,47	0,00	0,00	9,89
0,125	3,00	21,07	8,57	1,32
0,090	3,47	0,00	0,00	1,32
0,075	3,74	0,98	0,40	0,92
0,063	3,99	0,09	0,04	0,88
< 0,063	> 3,99	2,17	0,88	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,88
Sand, fine	(0,063 mm - 0,200 mm): 9,01
Sand, medium	(0,2 mm - 0,6 mm): 59,84
Sand, coarse	(0,6 mm - 2 mm): 20,55
Gravel	(> 2 mm): 9,72
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	2,57	-1,36
16%	84%	1,13	-0,18
25%	75%	0,65	0,62
40%	60%	0,50	0,99
Median 50%	50%	0,33	1,58
75%	25%	0,28	1,83
84%	16%	0,26	1,93
90%	10%	0,25	2,00
95%	5%	0,15	2,75

Moments Statistics

Mean	1,11
Sorting	1,15
Skewness	-0,55
Kurtosis	1,39
Uniformity Coefficient	2,02

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

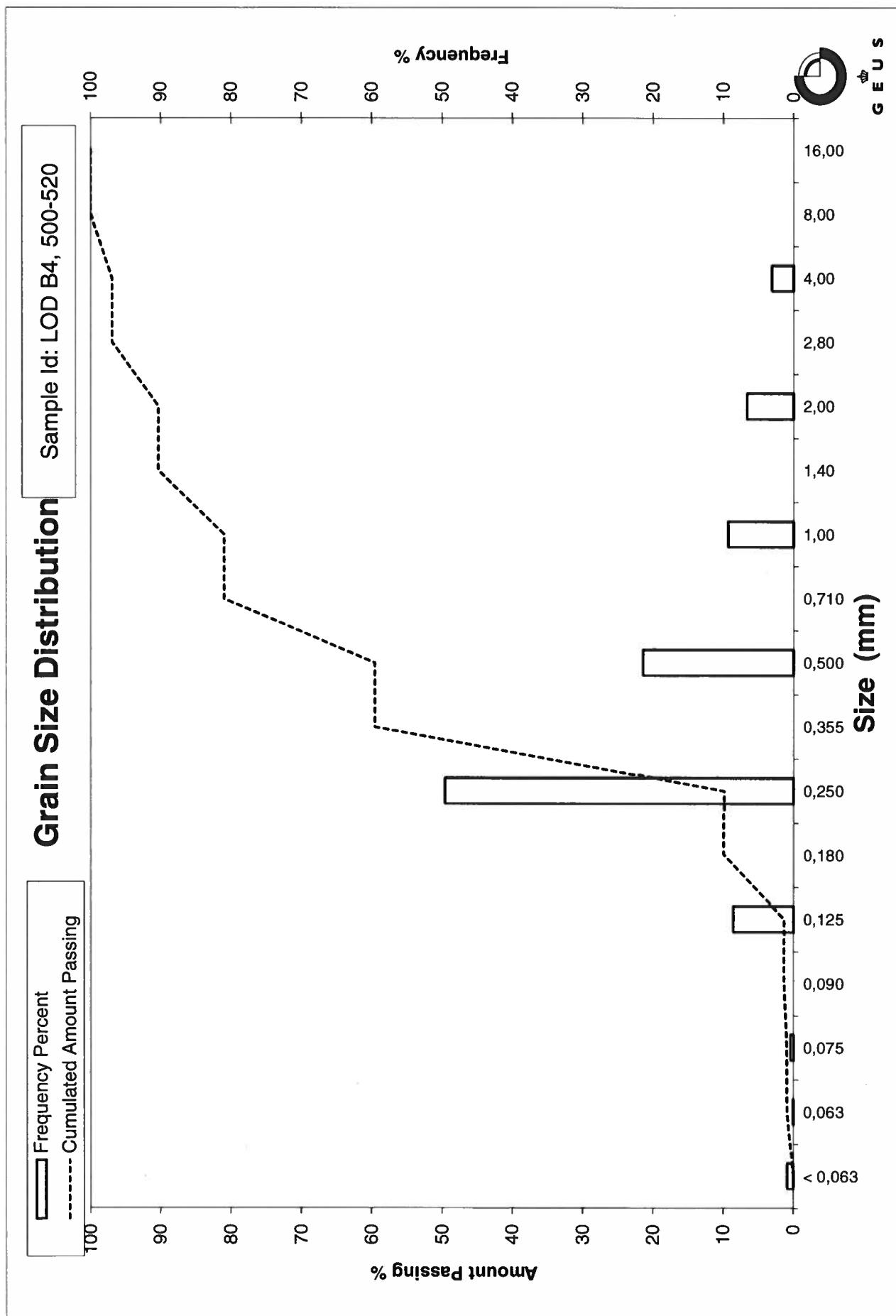
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($\phi 16\% + \phi 84\% - 2 * \phi 50\% / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\% / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient (d_{60} / d_{10}) (DGF-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B5, 40-60
Lab. Id: 200184
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >32mm (36,55g) indgår i >16mm



Total Weight 990,05 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	36,55	3,69	96,31
8,00	-3,00	72,94	7,37	88,94
4,00	-2,00	78,59	7,94	81,00
2,80	-1,49	0,00	0,00	81,00
2,00	-1,00	83,74	8,46	72,55
1,40	-0,49	0,00	0,00	72,55
1,00	0,00	91,75	9,27	63,28
0,710	0,49	0,00	0,00	63,28
0,500	1,00	154,69	15,62	47,65
0,355	1,49	0,00	0,00	47,65
0,250	2,00	425,88	43,02	4,64
0,180	2,47	0,00	0,00	4,64
0,125	3,00	36,62	3,70	0,94
0,090	3,47	0,00	0,00	0,94
0,075	3,74	2,02	0,20	0,73
0,063	3,99	0,00	0,00	0,73
< 0,063	> 3,99	7,27	0,73	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,73
Sand, fine	(0,063 mm - 0,200 mm): 3,90
Sand, medium	(0,2 mm - 0,6 mm): 50,46
Sand, coarse	(0,6 mm - 2 mm): 17,45
Gravel	(> 2 mm): 27,45
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	14,58	-3,87
16%	84%	5,51	-2,46
25%	75%	2,23	-1,16
40%	60%	0,67	0,59
Median 50%	50%	0,53	0,91
75%	25%	0,30	1,74
84%	16%	0,28	1,85
90%	10%	0,26	1,93
95%	5%	0,25	1,99

Moments Statistics

Mean	0,10
Sorting	1,97
Skewness	-0,60
Kurtosis	0,83
Uniformity Coefficient	2,53

The analysis is executed according to DS 405.9
extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

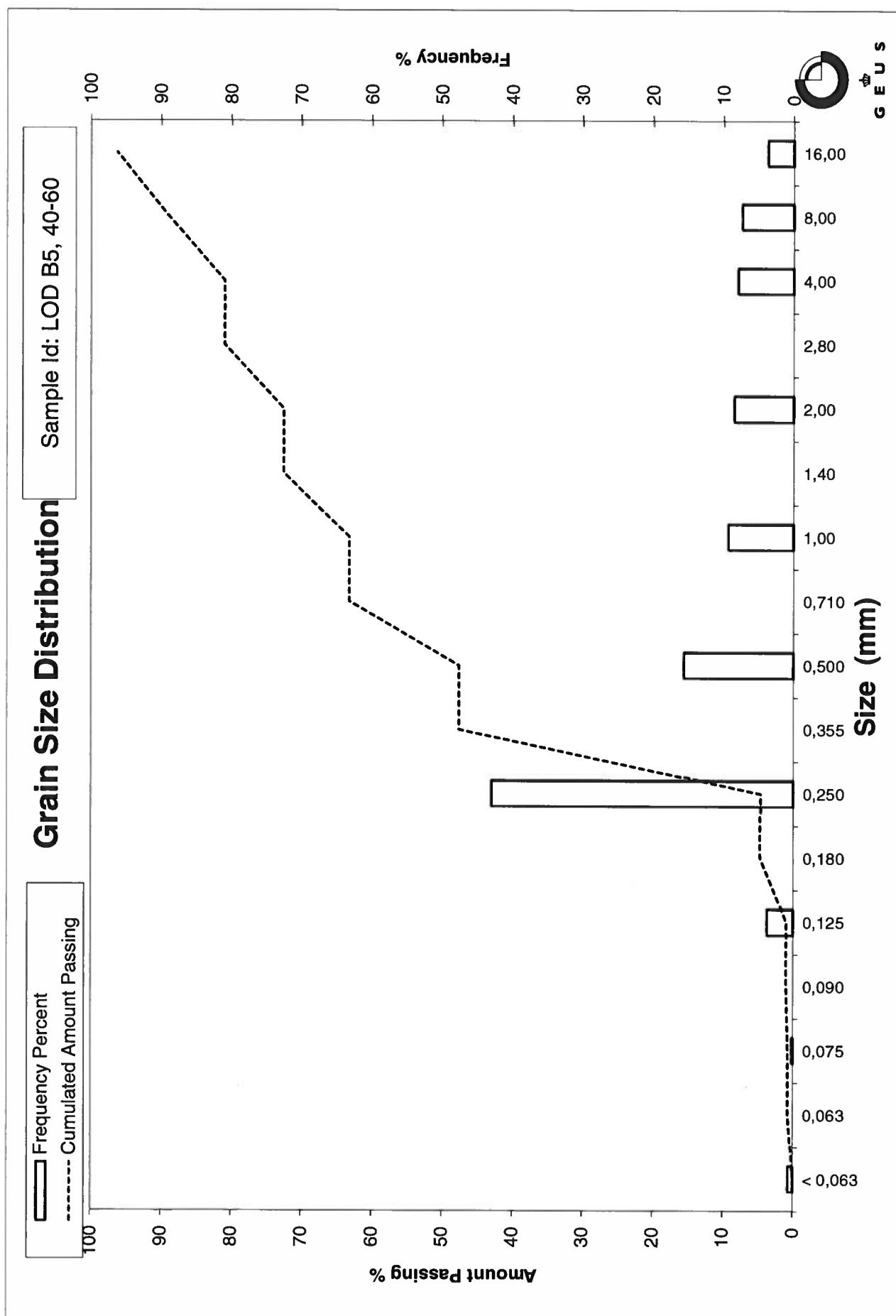
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($\phi 16\% + \phi 84\% - 2 * \phi 50\% / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\% / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient (d_{60} / d_{10}) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on
"Amount in sieve". Uniformity coefficient is based on
"Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B5, 140-160
Lab. Id: 200185
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >4mm heraf 0,31g skaller



Total Weight 221,46 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	7,45	3,36	96,64
4,00	-2,00	5,14	2,32	94,32
2,80	-1,49	0,00	0,00	94,32
2,00	-1,00	9,79	4,42	89,89
1,40	-0,49	0,00	0,00	89,89
1,00	0,00	16,68	7,53	82,36
0,710	0,49	0,00	0,00	82,36
0,500	1,00	30,98	13,99	68,37
0,355	1,49	0,00	0,00	68,37
0,250	2,00	134,20	60,60	7,78
0,180	2,47	0,00	0,00	7,78
0,125	3,00	15,44	6,97	0,80
0,090	3,47	0,00	0,00	0,80
0,075	3,74	0,80	0,36	0,44
0,063	3,99	0,05	0,02	0,42
< 0,063	> 3,99	0,93	0,42	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,42
Sand, fine	(0,063 mm - 0,200 mm): 7,36
Sand, medium	(0,2 mm - 0,6 mm): 67,26
Sand, coarse	(0,6 mm - 2 mm): 14,86
Gravel	(> 2 mm): 10,11
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	5,18	-2,37
16%	84%	1,09	-0,12
25%	75%	0,60	0,74
40%	60%	0,34	1,55
Median 50%	50%	0,32	1,63
75%	25%	0,28	1,84
84%	16%	0,26	1,92
90%	10%	0,25	1,98
95%	5%	0,16	2,66

Moments Statistics

Mean	1,14
Sorting	1,27
Skewness	-0,65
Kurtosis	1,88
Uniformity Coefficient	1,34

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

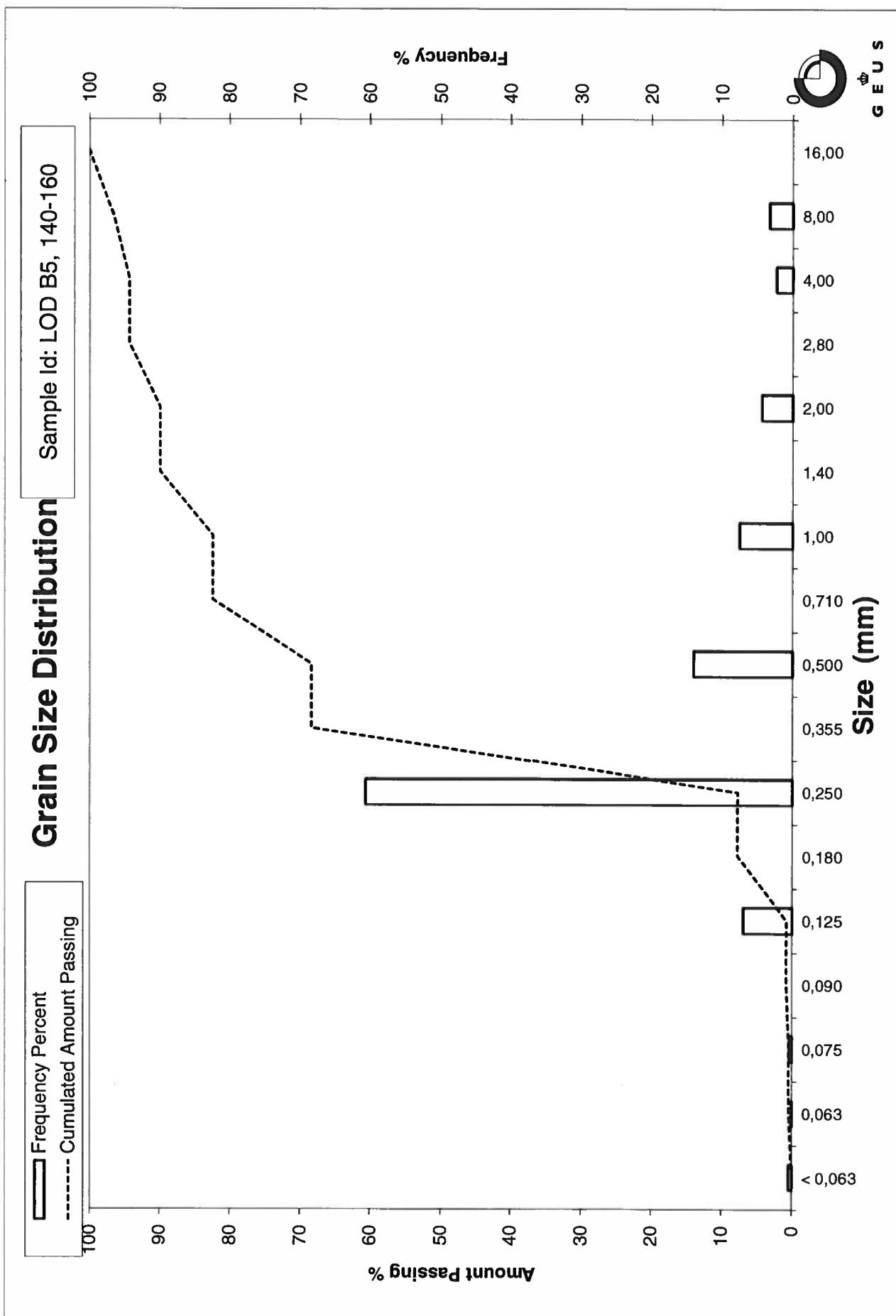
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient (d_{60} / d_{10}) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B5, 240-260
Lab. Id: 200186
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 124,47 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,96	0,77	99,23
1,40	-0,49	0,00	0,00	99,23
1,00	0,00	3,28	2,64	96,59
0,710	0,49	0,00	0,00	96,59
0,500	1,00	17,77	14,28	82,32
0,355	1,49	0,00	0,00	82,32
0,250	2,00	90,04	72,34	9,98
0,180	2,47	0,00	0,00	9,98
0,125	3,00	10,71	8,60	1,37
0,090	3,47	0,00	0,00	1,37
0,075	3,74	0,47	0,38	1,00
0,063	3,99	0,00	0,00	1,00
< 0,063	> 3,99	1,24	1,00	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,00
Sand, fine	(0,063 mm - 0,200 mm): 8,98
Sand, medium	(0,2 mm - 0,6 mm): 79,14
Sand, coarse	(0,6 mm - 2 mm): 10,11
Gravel	(> 2 mm): 0,77
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,69	0,54
16%	84%	0,52	0,93
25%	75%	0,34	1,54
40%	60%	0,32	1,63
Median 50%	50%	0,31	1,70
75%	25%	0,27	1,88
84%	16%	0,26	1,95
90%	10%	0,25	2,00
95%	5%	0,15	2,75

Moments Statistics

Mean	1,53
Sorting	0,59
Skewness	-0,28
Kurtosis	2,66
Uniformity Coefficient	1,29

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

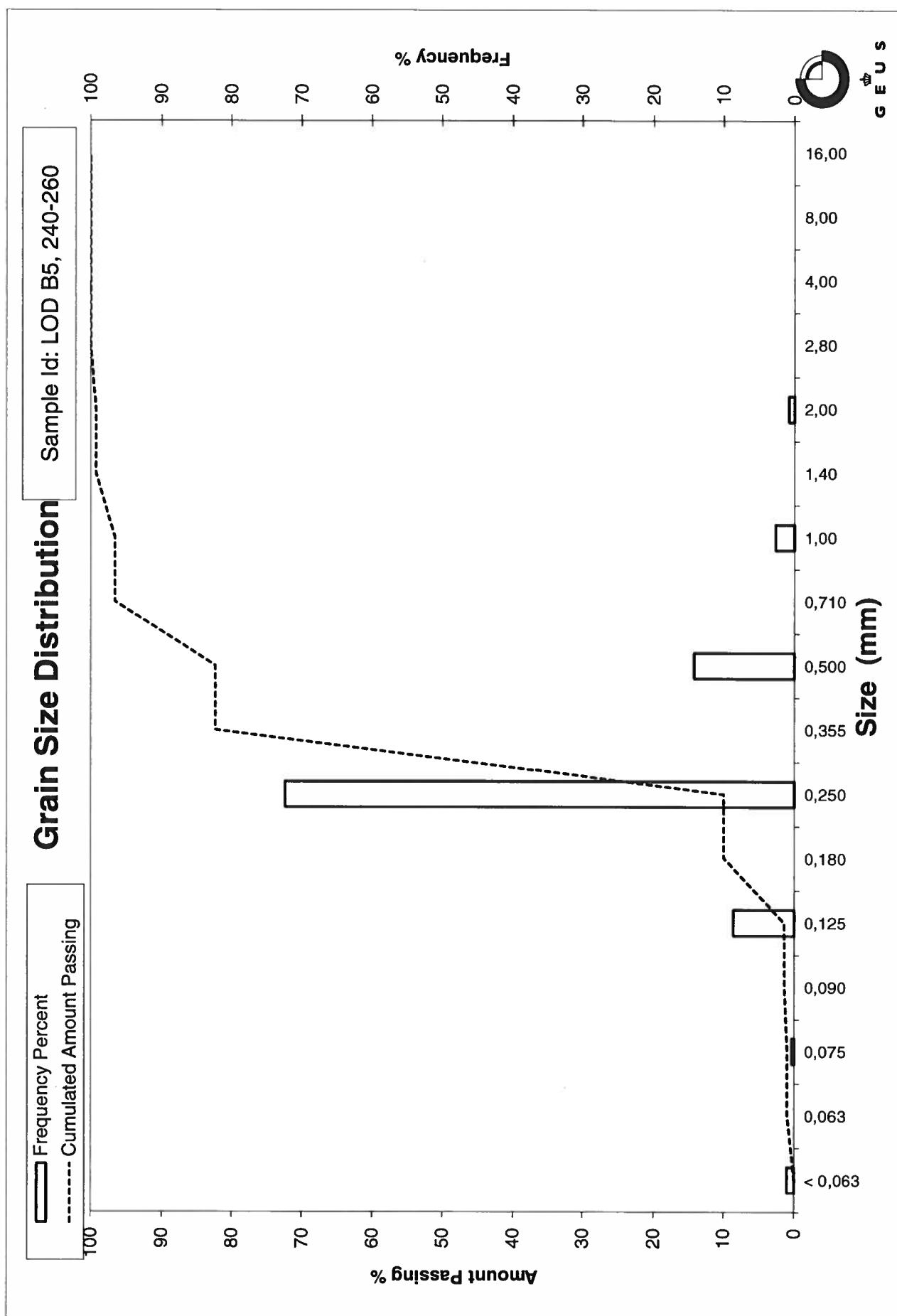
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B5, 340-360
Lab. Id: 200187
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 131,34 g

Size Fractions

Sieve Analysis

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,24	0,18	99,82
2,80	-1,49	0,00	0,00	99,82
2,00	-1,00	0,64	0,49	99,33
1,40	-0,49	0,00	0,00	99,33
1,00	0,00	3,01	2,29	97,04
0,710	0,49	0,00	0,00	97,04
0,500	1,00	17,44	13,28	83,76
0,355	1,49	0,00	0,00	83,76
0,250	2,00	94,28	71,78	11,98
0,180	2,47	0,00	0,00	11,98
0,125	3,00	13,87	10,56	1,42
0,090	3,47	0,00	0,00	1,42
0,075	3,74	0,75	0,57	0,85
0,063	3,99	0,05	0,04	0,81
< 0,063	> 3,99	1,06	0,81	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,81
Sand, fine	(0,063 mm - 0,200 mm):	11,17
Sand, medium	(0,2 mm - 0,6 mm):	78,11
Sand, coarse	(0,6 mm - 2 mm):	9,25
Gravel	(> 2 mm):	0,67
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,68	0,56
16%	84%	0,50	0,99
25%	75%	0,34	1,55
40%	60%	0,32	1,64
Median 50%	50%	0,31	1,71
75%	25%	0,27	1,89
84%	16%	0,26	1,97
90%	10%	0,17	2,56
95%	5%	0,14	2,80

Moments Statistics

Mean	1,56
Sorting	0,58
Skewness	-0,25
Kurtosis	2,64
Uniformity Coefficient	1,89

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\%$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%}-\phi_{16\%}$) / 4 + ($\phi_{95\%}-\phi_{5\%}$) / 6.6 (Folk and Ward 1957)

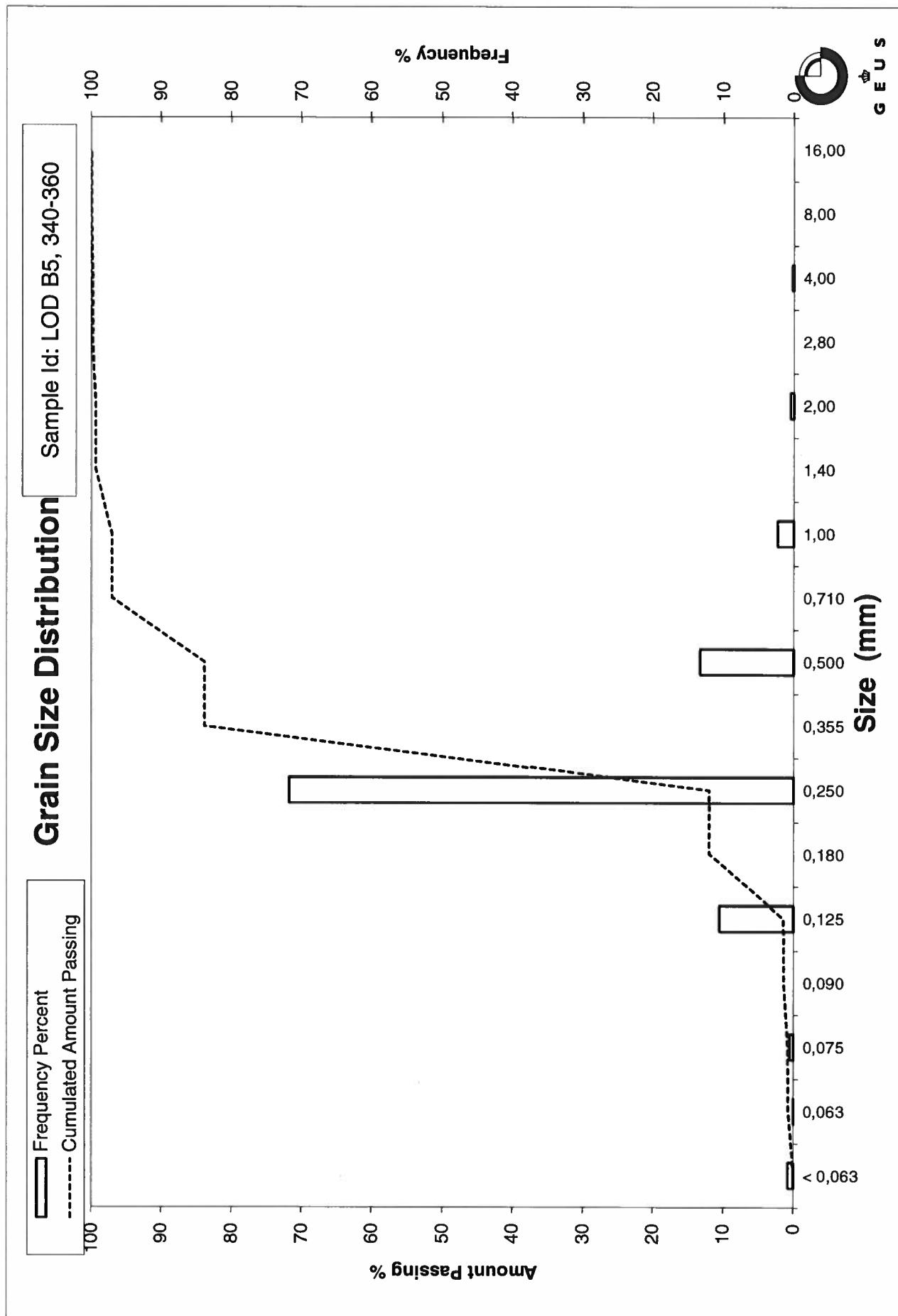
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2.44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($(\bar{x} - \mu)/(\sigma^2)$) (\bar{x} , μ , σ^2) (Folk and Ward 1957).

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dof-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B6, 40-60
Lab. Id: 200188
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >4mm heraf 0,34g skaller



Total Weight 350,68 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	20,03	5,71	94,29
4,00	-2,00	27,71	7,90	86,39
2,80	-1,49	0,00	0,00	86,39
2,00	-1,00	31,80	9,07	77,32
1,40	-0,49	0,00	0,00	77,32
1,00	0,00	40,91	11,67	65,65
0,710	0,49	0,00	0,00	65,65
0,500	1,00	56,14	16,01	49,64
0,355	1,49	0,00	0,00	49,64
0,250	2,00	147,16	41,96	7,68
0,180	2,47	0,00	0,00	7,68
0,125	3,00	23,01	6,56	1,12
0,090	3,47	0,00	0,00	1,12
0,075	3,74	1,30	0,37	0,75
0,063	3,99	0,21	0,06	0,69
< 0,063	> 3,99	2,41	0,69	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,69
Sand, fine	(0,063 mm - 0,200 mm): 6,99
Sand, medium	(0,2 mm - 0,6 mm): 49,59
Sand, coarse	(0,6 mm - 2 mm): 20,05
Gravel	(> 2 mm): 22,68
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	9,00	-3,17
16%	84%	2,59	-1,37
25%	75%	1,32	-0,40
40%	60%	0,64	0,65
Median 50%	50%	0,50	0,99
75%	25%	0,29	1,77
84%	16%	0,27	1,88
90%	10%	0,26	1,97
95%	5%	0,16	2,67

Moments Statistics

Mean	0,50
Sorting	1,70
Skewness	-0,44
Kurtosis	1,10
Uniformity Coefficient	2,49

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

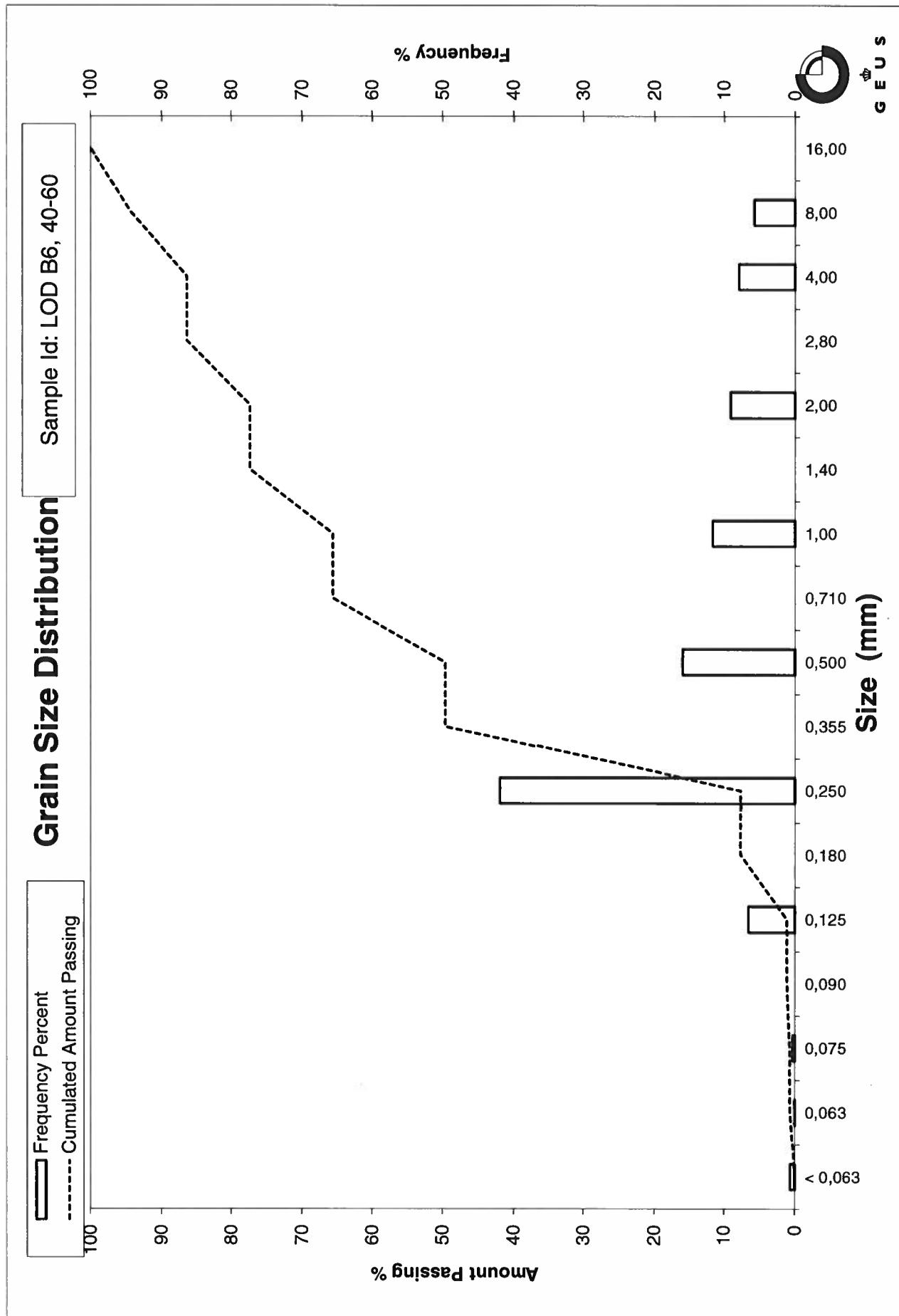
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B6, 140-160
Lab. Id: 200189
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks: >8mm består af skaller



Total Weight 137,73 g

Size Fractions

Sieve Analysis	
Gravel	
Sand	

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,13	1,55	98,45
4,00	-2,00	0,66	0,48	97,97
2,80	-1,49	0,00	0,00	97,97
2,00	-1,00	0,65	0,47	97,50
1,40	-0,49	0,00	0,00	97,50
1,00	0,00	7,43	5,39	92,11
0,710	0,49	0,00	0,00	92,11
0,500	1,00	19,43	14,11	78,00
0,355	1,49	0,00	0,00	78,00
0,250	2,00	90,00	65,35	12,66
0,180	2,47	0,00	0,00	12,66
0,125	3,00	15,83	11,49	1,16
0,090	3,47	0,00	0,00	1,16
0,075	3,74	0,42	0,30	0,86
0,063	3,99	0,00	0,00	0,86
< 0,063	> 3,99	1,18	0,86	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,86
Sand, fine	(0,063 mm - 0,200 mm): 11,80
Sand, medium	(0,2 mm - 0,6 mm): 72,06
Sand, coarse	(0,6 mm - 2 mm): 12,78
Gravel	(> 2 mm): 2,50
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,21	-0,28
16%	84%	0,59	0,76
25%	75%	0,35	1,51
40%	60%	0,33	1,62
Median 50%	50%	0,31	1,69
75%	25%	0,27	1,89
84%	16%	0,26	1,97
90%	10%	0,17	2,58
95%	5%	0,14	2,80

Moments Statistics

Mean	1,47
Sorting	0,77
Skewness	-0,41
Kurtosis	3,36
Uniformity Coefficient	1,95

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

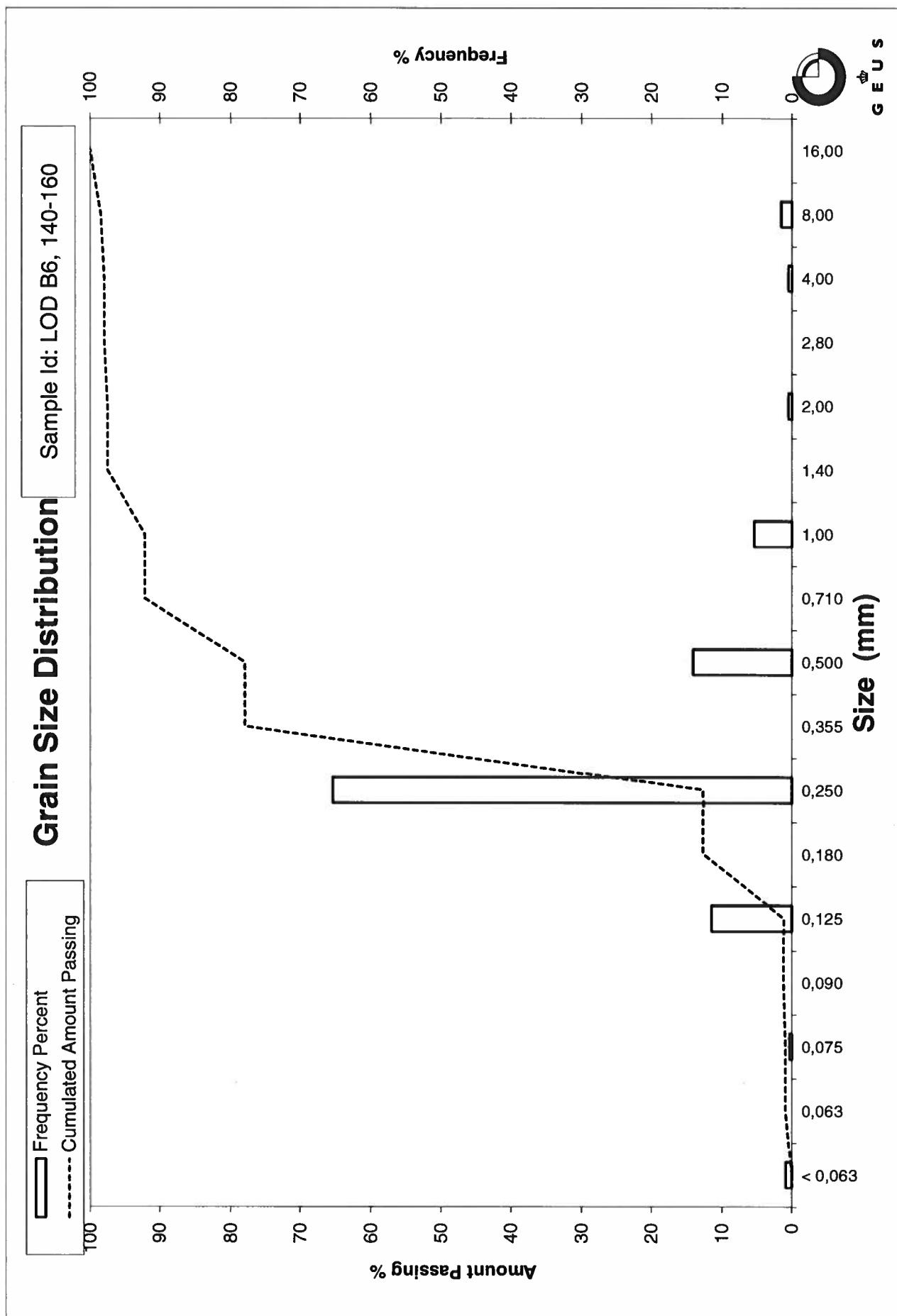
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B6, 240-260
Lab. Id: 200190
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 128,53 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	1,54	1,20	98,80
1,40	-0,49	0,00	0,00	98,80
1,00	0,00	6,26	4,87	93,93
0,710	0,49	0,00	0,00	93,93
0,500	1,00	14,66	11,41	82,53
0,355	1,49	0,00	0,00	82,53
0,250	2,00	82,98	64,56	17,96
0,180	2,47	0,00	0,00	17,96
0,125	3,00	21,05	16,38	1,59
0,090	3,47	0,00	0,00	1,59
0,075	3,74	0,66	0,51	1,07
0,063	3,99	0,10	0,08	1,00
< 0,063	> 3,99	1,28	1,00	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,00
Sand, fine	(0,063 mm - 0,200 mm): 16,97
Sand, medium	(0,2 mm - 0,6 mm): 69,99
Sand, coarse	(0,6 mm - 2 mm): 10,84
Gravel	(> 2 mm): 1,20
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	1,09	-0,12
16%	84%	0,53	0,92
25%	75%	0,34	1,54
40%	60%	0,32	1,65
Median 50%	50%	0,30	1,73
75%	25%	0,26	1,94
84%	16%	0,17	2,53
90%	10%	0,15	2,71
95%	5%	0,14	2,87

Moments Statistics

Mean	1,73
Sorting	0,85
Skewness	-0,12
Kurtosis	3,14
Uniformity Coefficient	2,08

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

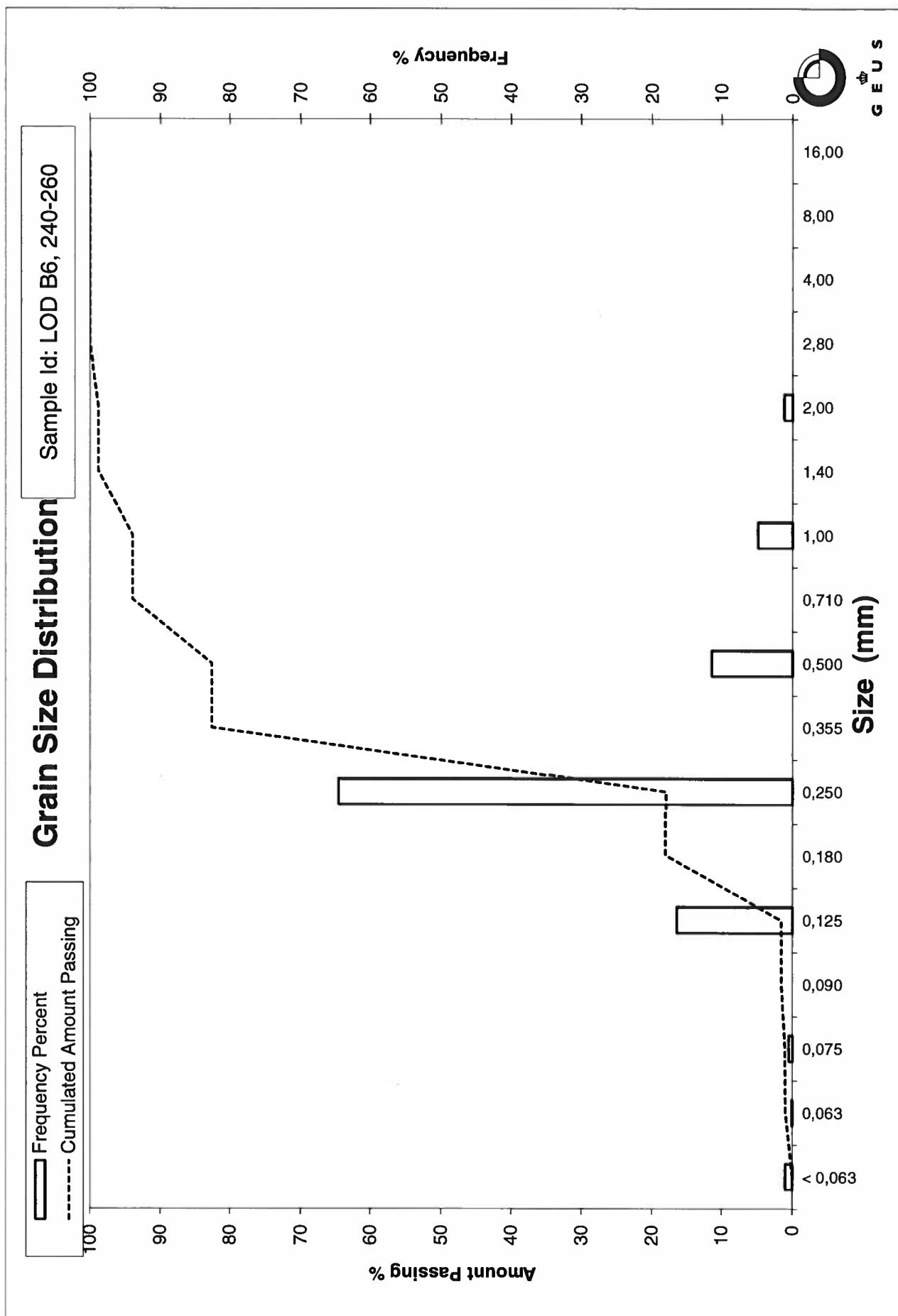
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d60\% / d10\%) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B6, 340-360
Lab. Id: 200191
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 124,46 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,22	0,18	99,82
2,80	-1,49	0,00	0,00	99,82
2,00	-1,00	0,57	0,46	99,37
1,40	-0,49	0,00	0,00	99,37
1,00	0,00	4,25	3,41	95,95
0,710	0,49	0,00	0,00	95,95
0,500	1,00	9,83	7,90	88,05
0,355	1,49	0,00	0,00	88,05
0,250	2,00	75,30	60,50	27,55
0,180	2,47	0,00	0,00	27,55
0,125	3,00	32,25	25,91	1,64
0,090	3,47	0,00	0,00	1,64
0,075	3,74	1,06	0,85	0,79
0,063	3,99	0,06	0,05	0,74
< 0,063	> 3,99	0,92	0,74	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,74
Sand, fine	(0,063 mm - 0,200 mm): 26,81
Sand, medium	(0,2 mm - 0,6 mm): 64,26
Sand, coarse	(0,6 mm - 2 mm): 7,55
Gravel	(> 2 mm): 0,63
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,68	0,55
16%	84%	0,35	1,52
25%	75%	0,33	1,59
40%	60%	0,31	1,71
Median 50%	50%	0,29	1,79
75%	25%	0,17	2,52
84%	16%	0,16	2,69
90%	10%	0,14	2,81
95%	5%	0,13	2,92

Moments Statistics

Mean	2,00
Sorting	0,65
Skewness	0,24
Kurtosis	1,05
Uniformity Coefficient	2,15

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

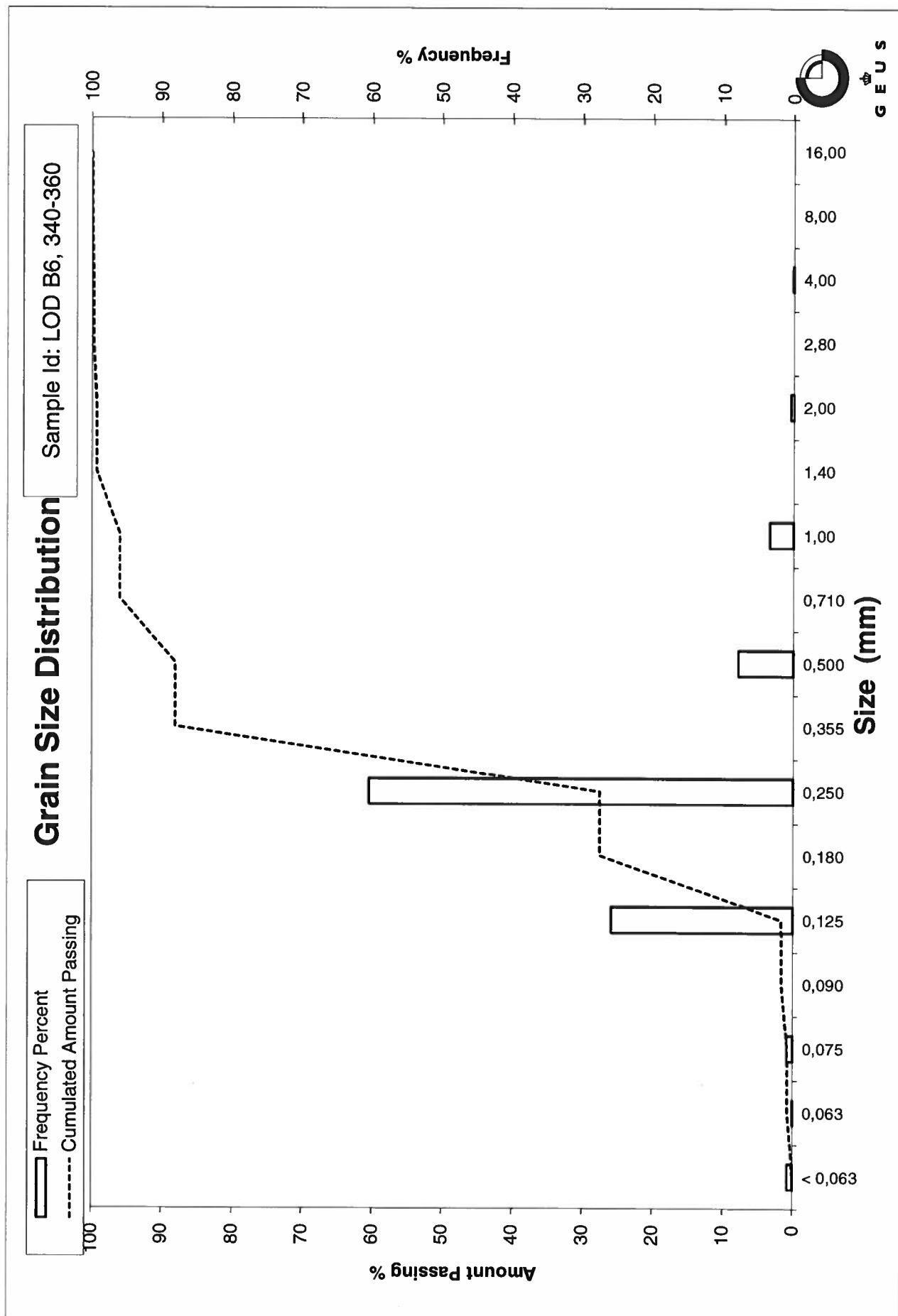
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B6, 440-460
Lab. Id: 200192
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 113,87 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,05	0,04	99,96
1,40	-0,49	0,00	0,00	99,96
1,00	0,00	1,07	0,94	99,02
0,710	0,49	0,00	0,00	99,02
0,500	1,00	5,41	4,75	94,27
0,355	1,49	0,00	0,00	94,27
0,250	2,00	63,93	56,14	38,12
0,180	2,47	0,00	0,00	38,12
0,125	3,00	37,63	33,05	5,08
0,090	3,47	0,00	0,00	5,08
0,075	3,74	4,21	3,70	1,38
0,063	3,99	0,38	0,33	1,05
< 0,063	> 3,99	1,19	1,05	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,05
Sand, fine	(0,063 mm - 0,200 mm): 37,08
Sand, medium	(0,2 mm - 0,6 mm): 58,41
Sand, coarse	(0,6 mm - 2 mm): 3,43
Gravel	(> 2 mm): 0,04
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,53	0,91
16%	84%	0,34	1,57
25%	75%	0,32	1,65
40%	60%	0,29	1,78
Median 50%	50%	0,27	1,88
75%	25%	0,16	2,66
84%	16%	0,14	2,80
90%	10%	0,13	2,91
95%	5%	0,09	3,48

Moments Statistics

Mean	2,09
Sorting	0,70
Skewness	0,38
Kurtosis	1,04
Uniformity Coefficient	2,18

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

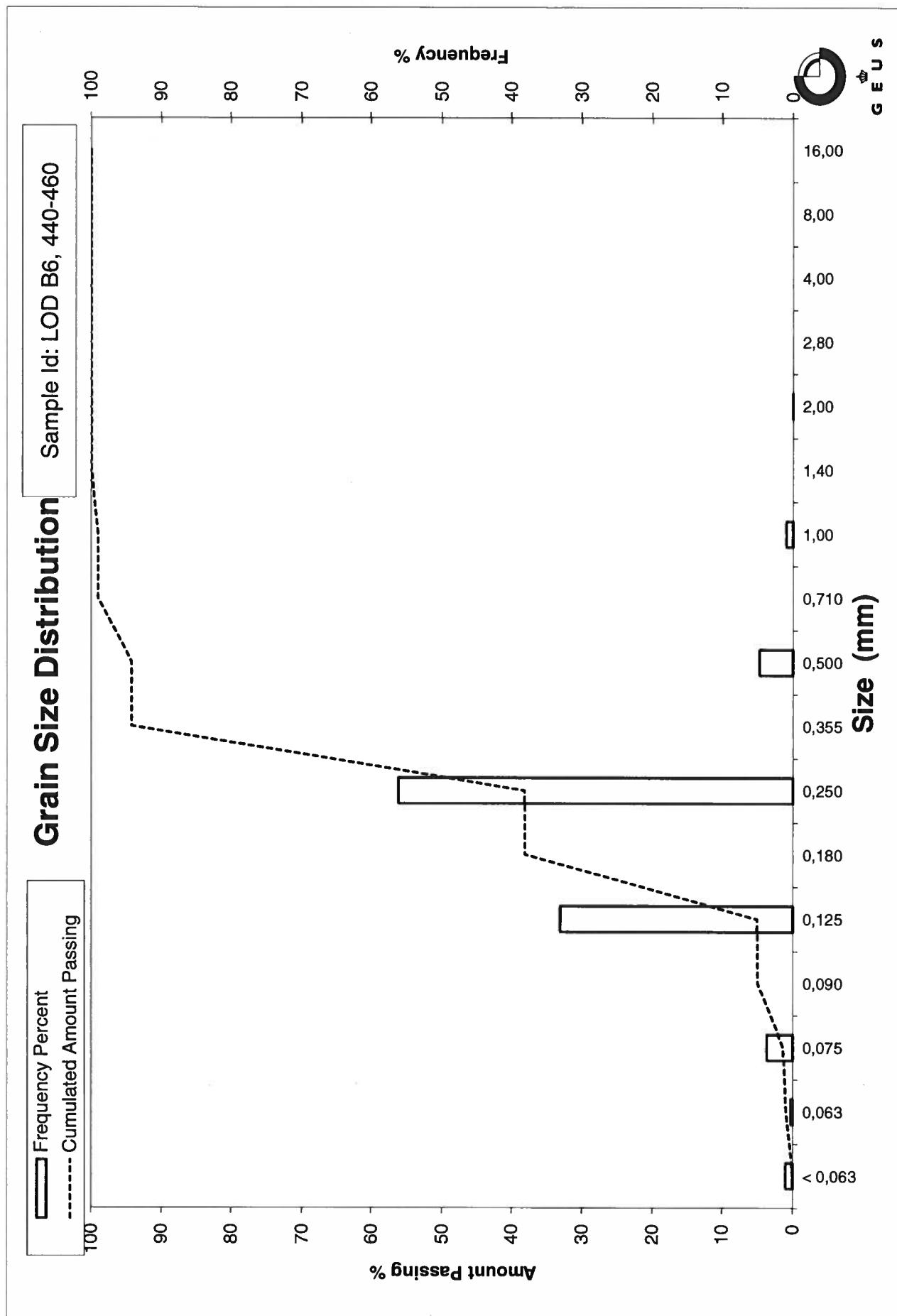
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B6, 540-560
Lab. Id: 200193
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 117,58 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,58	0,49	99,51
1,40	-0,49	0,00	0,00	99,51
1,00	0,00	4,98	4,24	95,27
0,710	0,49	0,00	0,00	95,27
0,500	1,00	12,45	10,59	84,68
0,355	1,49	0,00	0,00	84,68
0,250	2,00	67,90	57,75	26,93
0,180	2,47	0,00	0,00	26,93
0,125	3,00	28,38	24,14	2,80
0,090	3,47	0,00	0,00	2,80
0,075	3,74	2,02	1,72	1,08
0,063	3,99	0,17	0,14	0,94
< 0,063	> 3,99	1,10	0,94	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %	
Silt and clay	(< 0,063 mm):	0,94
Sand, fine	(0,063 mm - 0,200 mm):	26,00
Sand, medium	(0,2 mm - 0,6 mm):	62,79
Sand, coarse	(0,6 mm - 2 mm):	9,78
Gravel	(> 2 mm):	0,49
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,70	0,51
16%	84%	0,35	1,50
25%	75%	0,34	1,57
40%	60%	0,31	1,69
Median 50%	50%	0,29	1,78
75%	25%	0,18	2,51
84%	16%	0,16	2,69
90%	10%	0,14	2,82
95%	5%	0,13	2,94

Moments Statistics

Mean	1,99
Sorting	0,67
Skewness	0,25
Kurtosis	1,06
Uniformity Coefficient	2,19

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

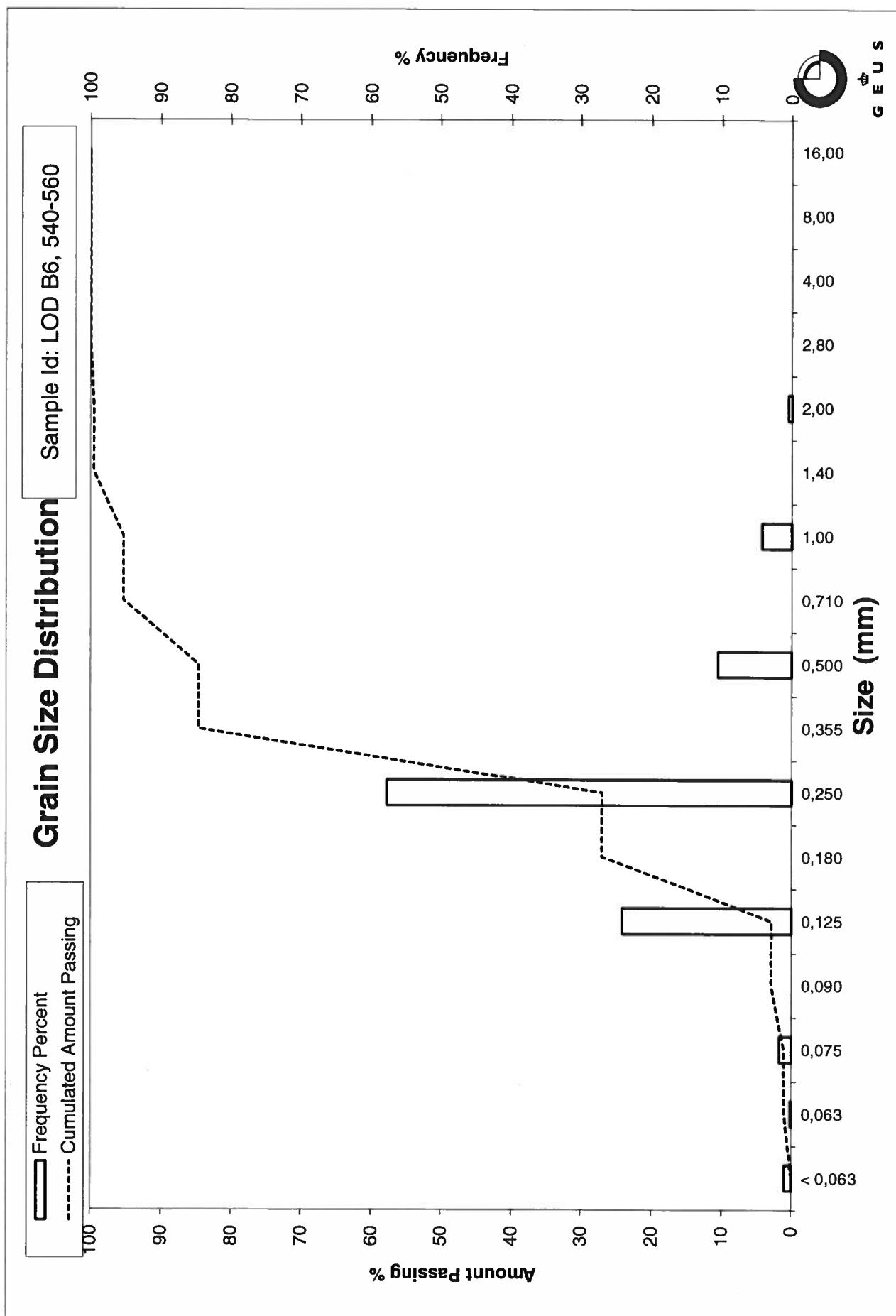
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B7, 10-30
Lab. Id: 200194
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 122,92 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,98	0,80	99,20
2,80	-1,49	0,00	0,00	99,20
2,00	-1,00	2,71	2,20	97,00
1,40	-0,49	0,00	0,00	97,00
1,00	0,00	7,10	5,78	91,22
0,710	0,49	0,00	0,00	91,22
0,500	1,00	19,24	15,65	75,57
0,355	1,49	0,00	0,00	75,57
0,250	2,00	70,74	57,55	18,02
0,180	2,47	0,00	0,00	18,02
0,125	3,00	20,82	16,94	1,08
0,090	3,47	0,00	0,00	1,08
0,075	3,74	0,41	0,33	0,75
0,063	3,99	0,01	0,01	0,74
< 0,063	> 3,99	0,91	0,74	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,74
Sand, fine	(0,063 mm - 0,200 mm): 17,28
Sand, medium	(0,2 mm - 0,6 mm): 65,00
Sand, coarse	(0,6 mm - 2 mm): 13,98
Gravel	(> 2 mm): 3,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,26	-0,34
16%	84%	0,61	0,71
25%	75%	0,35	1,50
40%	60%	0,33	1,61
Median 50%	50%	0,31	1,70
75%	25%	0,26	1,93
84%	16%	0,17	2,53
90%	10%	0,15	2,70
95%	5%	0,14	2,86

Moments Statistics

Mean	1,64
Sorting	0,94
Skewness	-0,18
Kurtosis	3,05
Uniformity Coefficient	2,12

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

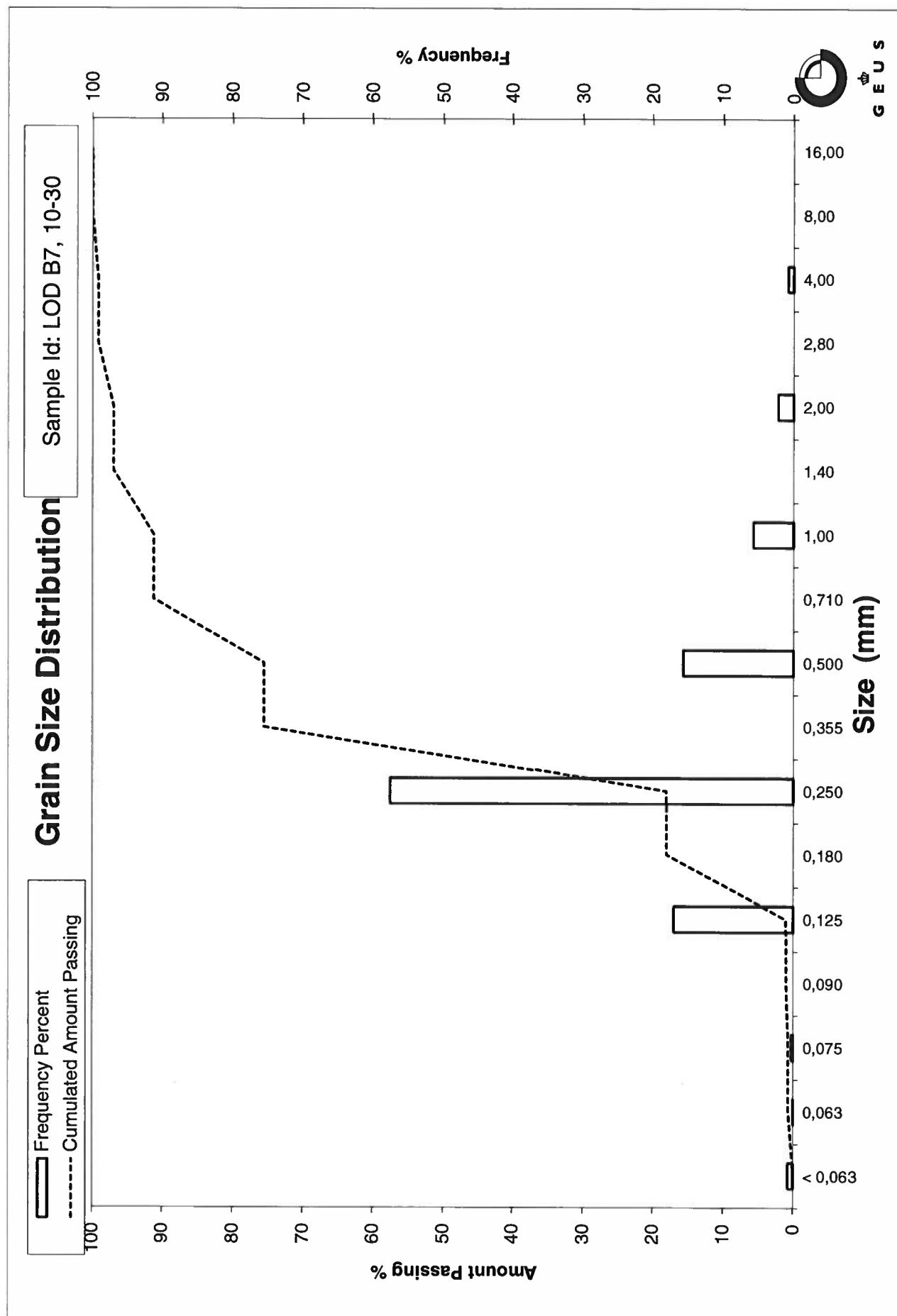
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B7, 110-130
Lab. Id: 200195
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 288,7 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	7,54	2,61	97,39
4,00	-2,00	10,49	3,63	93,75
2,80	-1,49	0,00	0,00	93,75
2,00	-1,00	12,71	4,40	89,35
1,40	-0,49	0,00	0,00	89,35
1,00	0,00	20,76	7,19	82,16
0,710	0,49	0,00	0,00	82,16
0,500	1,00	36,06	12,49	69,67
0,355	1,49	0,00	0,00	69,67
0,250	2,00	153,38	53,13	16,54
0,180	2,47	0,00	0,00	16,54
0,125	3,00	43,91	15,21	1,33
0,090	3,47	0,00	0,00	1,33
0,075	3,74	1,33	0,46	0,87
0,063	3,99	0,06	0,02	0,85
< 0,063	> 3,99	2,46	0,85	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,85
Sand, fine	(0,063 mm - 0,200 mm):	15,69
Sand, medium	(0,2 mm - 0,6 mm):	59,08
Sand, coarse	(0,6 mm - 2 mm):	13,73
Gravel	(> 2 mm):	10,65
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	5,37	-2,43
16%	84%	1,10	-0,14
25%	75%	0,59	0,76
40%	60%	0,34	1,57
Median 50%	50%	0,32	1,66
75%	25%	0,27	1,91
84%	16%	0,18	2,49
90%	10%	0,16	2,68
95%	5%	0,14	2,85

Moments Statistics

Mean	1,34
Sorting	1,46
Skewness	-0,46
Kurtosis	1,89
Uniformity Coefficient	2,15

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

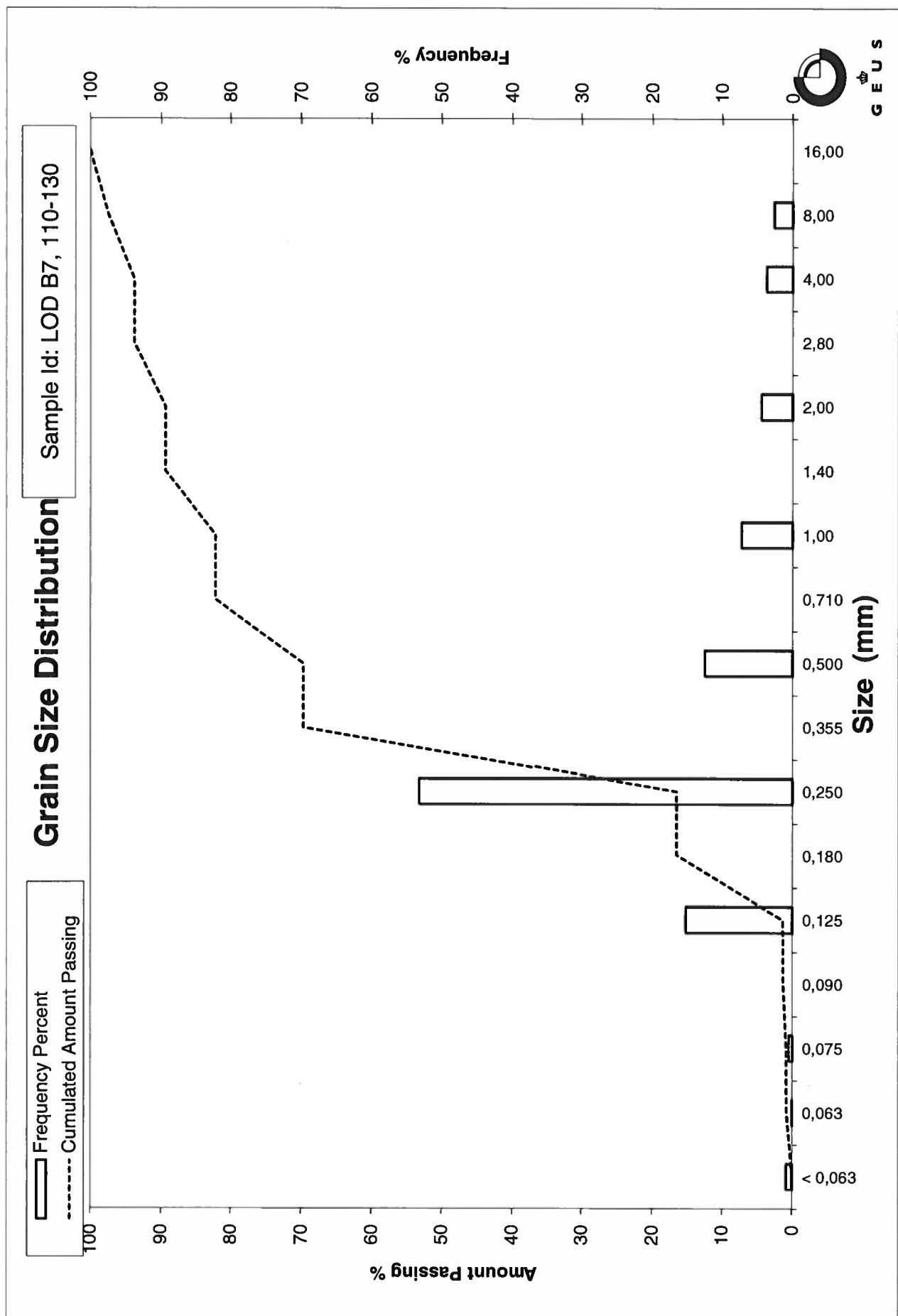
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B7, 210-230
Lab. Id: 200196
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 114,07 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,14	0,12	99,88
1,40	-0,49	0,00	0,00	99,88
1,00	0,00	0,25	0,22	99,66
0,710	0,49	0,00	0,00	99,66
0,500	1,00	2,59	2,27	97,39
0,355	1,49	0,00	0,00	97,39
0,250	2,00	45,28	39,69	57,69
0,180	2,47	0,00	0,00	57,69
0,125	3,00	59,30	51,99	5,71
0,090	3,47	0,00	0,00	5,71
0,075	3,74	4,69	4,11	1,60
0,063	3,99	0,25	0,22	1,38
< 0,063	> 3,99	1,57	1,38	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,38
Sand, fine	(0,063 mm - 0,200 mm): 56,32
Sand, medium	(0,2 mm - 0,6 mm): 40,78
Sand, coarse	(0,6 mm - 2 mm): 1,41
Gravel	(> 2 mm): 0,12
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,35	1,52
16%	84%	0,32	1,65
25%	75%	0,30	1,76
40%	60%	0,26	1,97
Median 50%	50%	0,17	2,54
75%	25%	0,15	2,78
84%	16%	0,14	2,88
90%	10%	0,13	2,95
95%	5%	0,09	3,52

Moments Statistics

Mean	2,36
Sorting	0,61
Skewness	-0,24
Kurtosis	0,80
Uniformity Coefficient	1,98

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

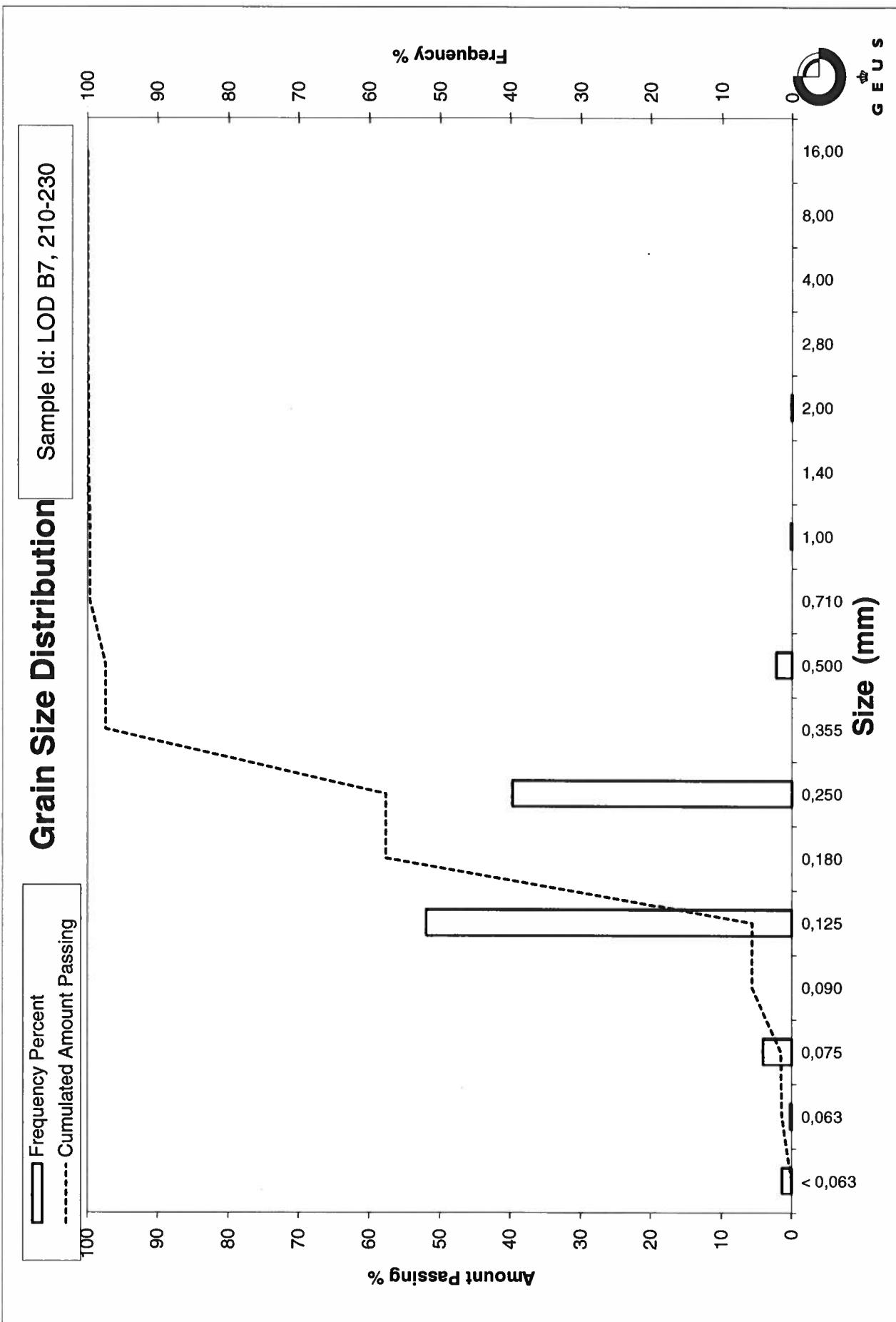
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B7, 310-330
Lab. Id: 200197
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 113,04 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,15	0,13	99,87
2,80	-1,49	0,00	0,00	99,87
2,00	-1,00	0,49	0,43	99,43
1,40	-0,49	0,00	0,00	99,43
1,00	0,00	0,58	0,51	98,92
0,710	0,49	0,00	0,00	98,92
0,500	1,00	2,76	2,44	96,48
0,355	1,49	0,00	0,00	96,48
0,250	2,00	32,33	28,60	67,88
0,180	2,47	0,00	0,00	67,88
0,125	3,00	70,52	62,38	5,49
0,090	3,47	0,00	0,00	5,49
0,075	3,74	3,88	3,43	2,06
0,063	3,99	0,22	0,19	1,87
< 0,063	> 3,99	2,11	1,87	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,87
Sand, fine	(0,063 mm - 0,200 mm):	66,01
Sand, medium	(0,2 mm - 0,6 mm):	29,76
Sand, coarse	(0,6 mm - 2 mm):	1,79
Gravel	(> 2 mm):	0,57
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,35	1,52
16%	84%	0,31	1,69
25%	75%	0,28	1,86
40%	60%	0,17	2,53
Median 50%	50%	0,16	2,61
75%	25%	0,14	2,81
84%	16%	0,13	2,90
90%	10%	0,13	2,95
95%	5%	0,09	3,51

Moments Statistics

Mean	2,40
Sorting	0,60
Skewness	-0,31
Kurtosis	0,85
Uniformity Coefficient	1,34

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

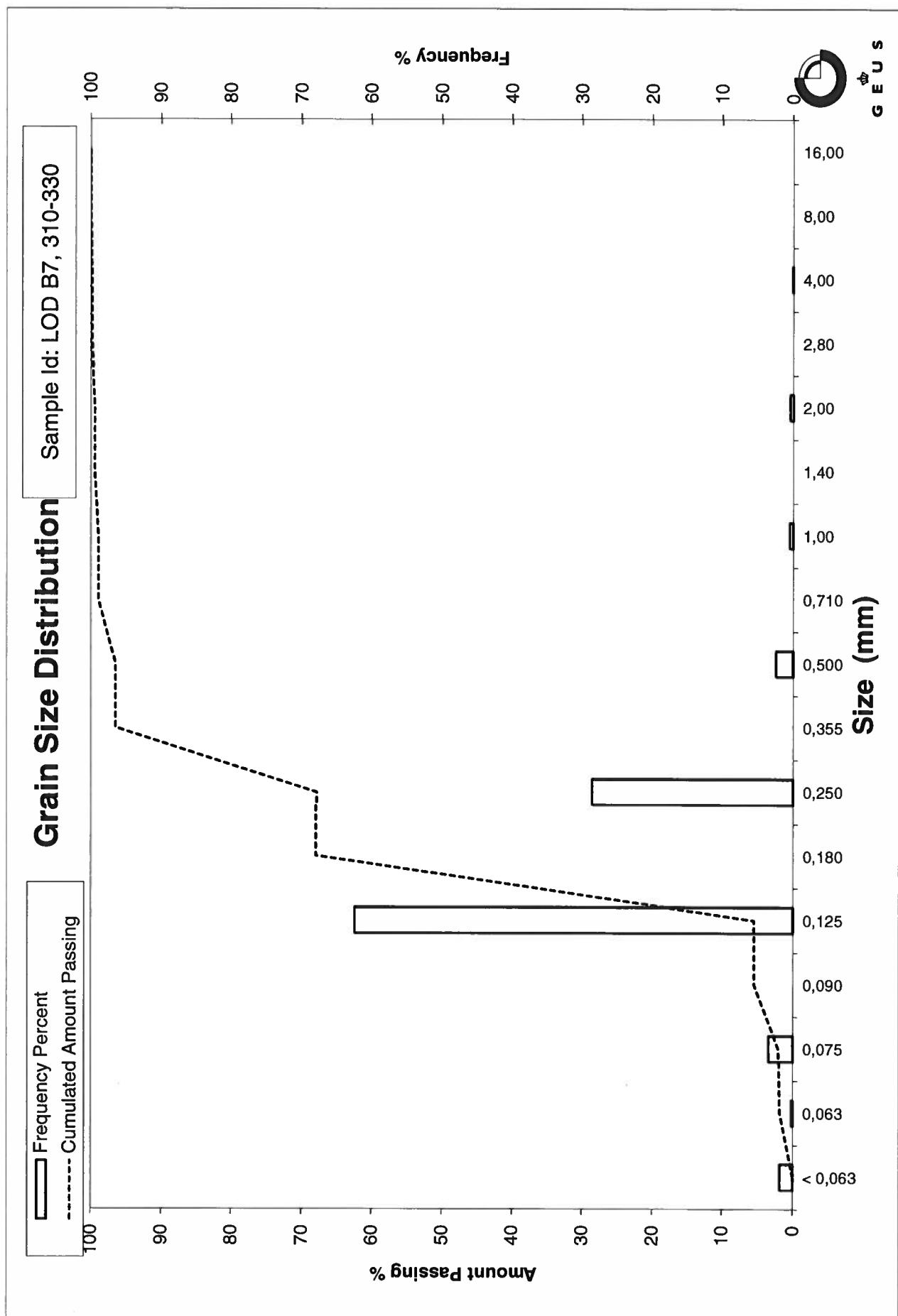
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d60\% / d10\%) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B7, 430-450
Lab. Id: 200198
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 1256,9 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	50,49	4,02	95,98
8,00	-3,00	186,85	14,87	81,12
4,00	-2,00	237,46	18,89	62,22
2,80	-1,49	0,00	0,00	62,22
2,00	-1,00	236,35	18,80	43,42
1,40	-0,49	0,00	0,00	43,42
1,00	0,00	124,60	9,91	33,51
0,710	0,49	0,00	0,00	33,51
0,500	1,00	171,88	13,68	19,83
0,355	1,49	0,00	0,00	19,83
0,250	2,00	37,51	2,98	16,85
0,180	2,47	0,00	0,00	16,85
0,125	3,00	13,95	1,11	15,74
0,090	3,47	0,00	0,00	15,74
0,075	3,74	67,44	5,37	10,37
0,063	3,99	58,60	4,66	5,71
< 0,063	> 3,99	71,78	5,71	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 5,71
Sand, fine	(0,063 mm - 0,200 mm): 11,14
Sand, medium	(0,2 mm - 0,6 mm): 9,50
Sand, coarse	(0,6 mm - 2 mm): 17,08
Gravel	(> 2 mm): 56,58
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	15,47	-3,95
16%	84%	9,55	-3,26
25%	75%	6,70	-2,75
40%	60%	2,71	-1,44
Median 50%	50%	2,28	-1,19
75%	25%	0,58	0,79
84%	16%	0,14	2,86
90%	10%	0,07	3,76
95%	5%	-----	-----

Moments Statistics

Mean	-0,53
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	36,54

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

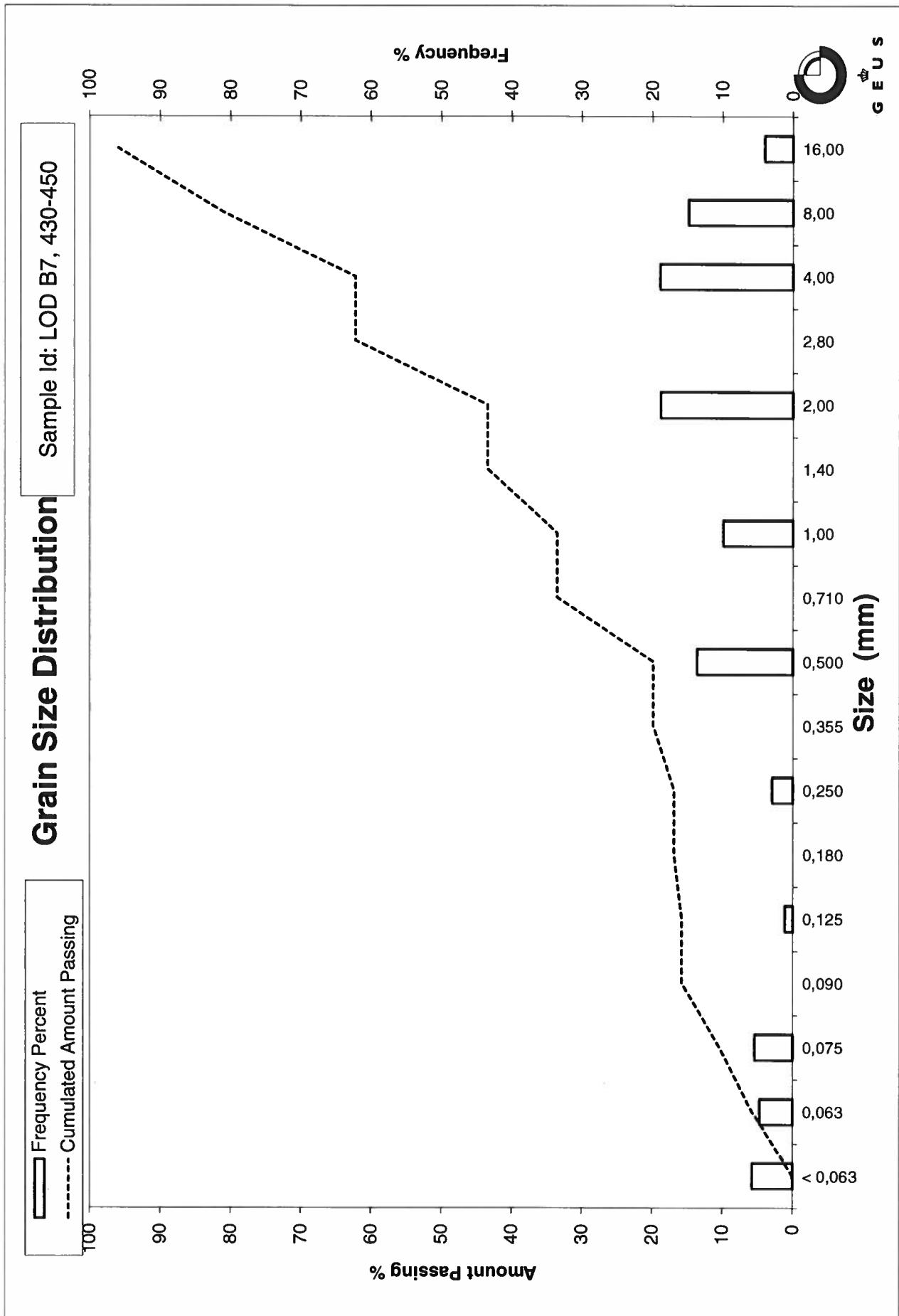
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: LOD B7, 500-520
Lab. Id: 200199
Projekt Kystdirektoratet
Subject: 0
Date: august 2020
Executed: PS
Remarks:



Total Weight 103,38 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,19	0,18	99,82
0,710	0,49	0,00	0,00	99,82
0,500	1,00	0,36	0,35	99,47
0,355	1,49	0,00	0,00	99,47
0,250	2,00	1,43	1,38	98,08
0,180	2,47	0,00	0,00	98,08
0,125	3,00	66,87	64,68	33,40
0,090	3,47	0,00	0,00	33,40
0,075	3,74	28,44	27,51	5,89
0,063	3,99	1,76	1,70	4,19
< 0,063	> 3,99	4,33	4,19	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	4,19
Sand, fine	(0,063 mm - 0,200 mm):	93,90
Sand, medium	(0,2 mm - 0,6 mm):	1,55
Sand, coarse	(0,6 mm - 2 mm):	0,37
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,18	2,50
16%	84%	0,17	2,57
25%	75%	0,16	2,64
40%	60%	0,15	2,76
Median 50%	50%	0,14	2,85
75%	25%	0,09	3,55
84%	16%	0,08	3,63
90%	10%	0,08	3,69
95%	5%	0,07	3,86

Moments Statistics

Mean	3,02
Sorting	0,47
Skewness	0,49
Kurtosis	0,62
Uniformity Coefficient	1,91

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

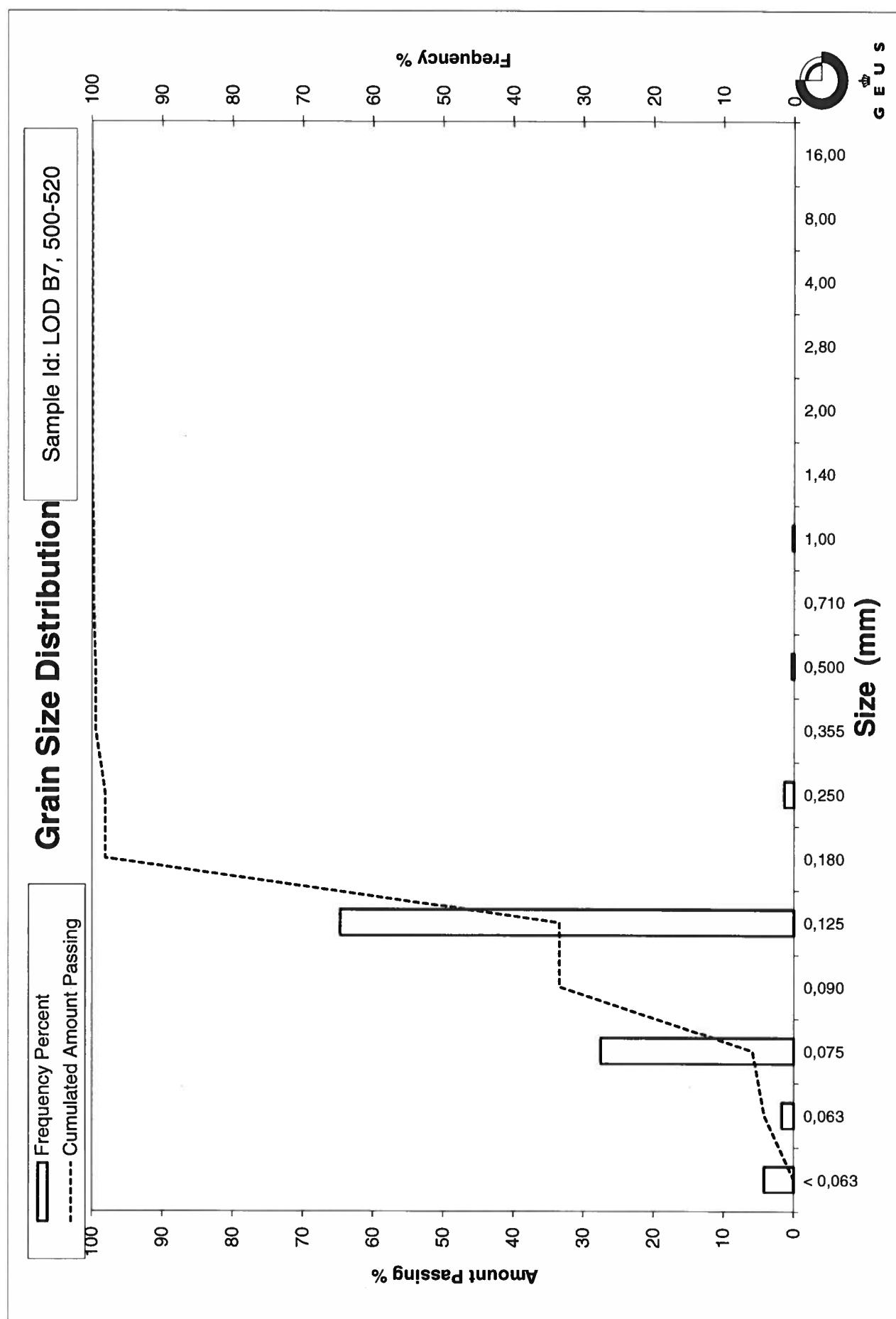
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_01, 5-25
Lab. Id: 200700
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 709,1 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	117,03	16,50	83,50
8,00	-3,00	175,56	24,76	58,74
4,00	-2,00	121,07	17,07	41,66
2,80	-1,49	53,81	7,59	34,07
2,00	-1,00	29,48	4,16	29,92
1,40	-0,49	21,43	3,02	26,90
1,00	0,00	18,61	2,62	24,27
0,710	0,49	20,98	2,96	21,31
0,500	1,00	29,68	4,19	17,13
0,355	1,49	36,69	5,17	11,95
0,250	2,00	45,63	6,44	5,52
0,180	2,47	26,18	3,69	1,82
0,125	3,00	7,77	1,10	0,73
0,090	3,47	2,38	0,34	0,39
0,075	3,74	0,60	0,09	0,31
0,063	3,99	0,44	0,06	0,24
< 0,063	> 3,99	1,73	0,24	0,00

Gravel
 Sand

Sieve Analysis

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,24
Sand, fine	(0,063 mm - 0,200 mm): 2,63
Sand, medium	(0,2 mm - 0,6 mm): 16,24
Sand, coarse	(0,6 mm - 2 mm): 10,80
Gravel	(> 2 mm): 70,08
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	-----	-----
25%	75%	13,25	-3,73
40%	60%	8,41	-3,07
Median 50%	50%	5,95	-2,57
75%	25%	1,11	-0,15
84%	16%	0,47	1,09
90%	10%	0,32	1,63
95%	5%	0,24	2,06

Moments Statistics

Mean	-0,74
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	26,02

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

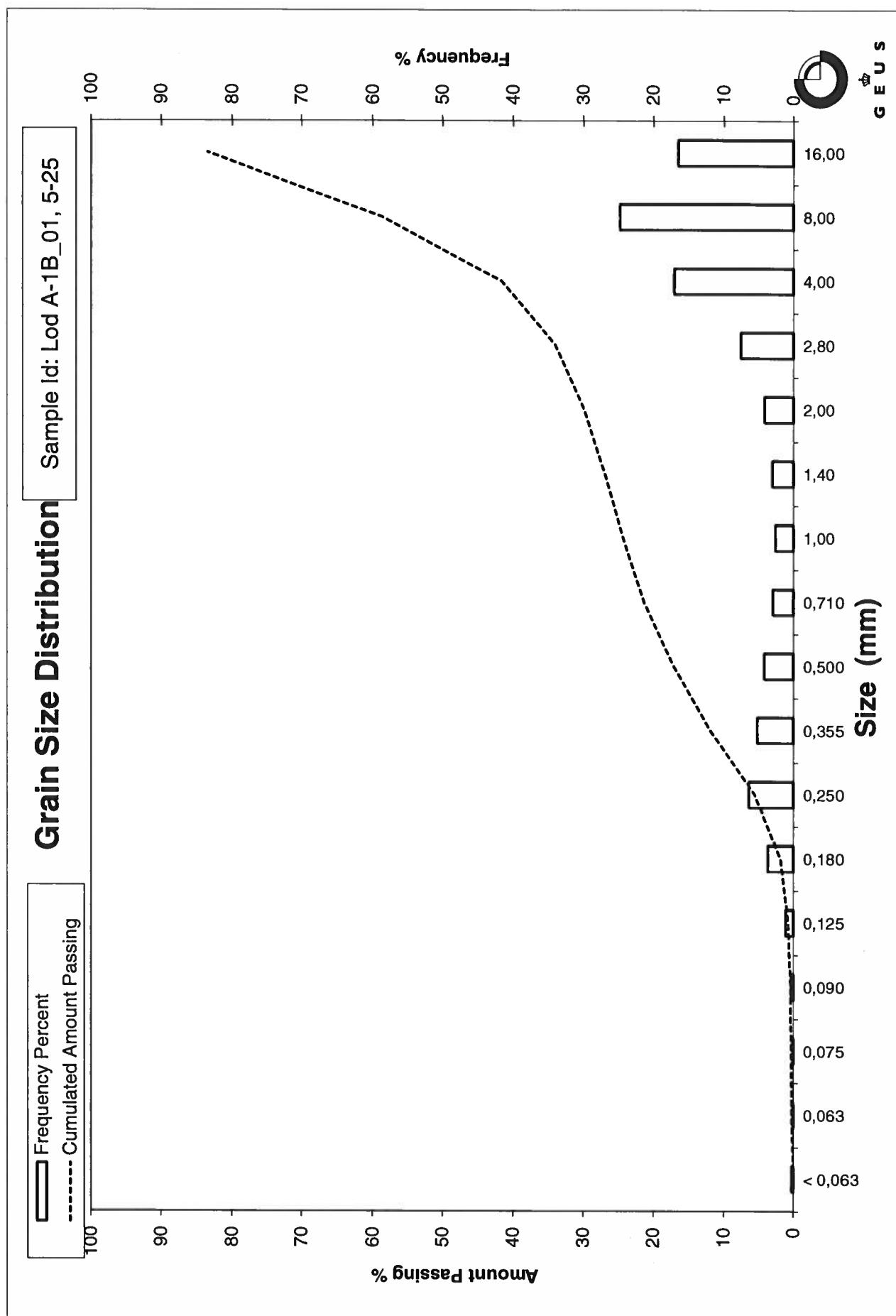
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_01, 150-170
Lab. Id: 200701
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 98,33 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,00	0,00	100,00
0,710	0,49	0,02	0,02	99,98
0,500	1,00	0,00	0,00	99,98
0,355	1,49	0,02	0,02	99,96
0,250	2,00	0,16	0,16	99,80
0,180	2,47	0,36	0,37	99,43
0,125	3,00	13,33	13,56	85,87
0,090	3,47	38,09	38,74	47,14
0,075	3,74	17,45	17,75	29,39
0,063	3,99	12,74	12,96	16,43
< 0,063	> 3,99	16,16	16,43	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	16,43
Sand, fine	(0,063 mm - 0,200 mm):	83,10
Sand, medium	(0,2 mm - 0,6 mm):	0,44
Sand, coarse	(0,6 mm - 2 mm):	0,02
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,16	2,63
16%	84%	0,12	3,02
25%	75%	0,12	3,12
40%	60%	0,10	3,30
Median 50%	50%	0,09	3,43
75%	25%	0,07	3,82
84%	16%	-----	-----
90%	10%	-----	-----
95%	5%	-----	-----

Moments Statistics

Mean	3,23
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	-----

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

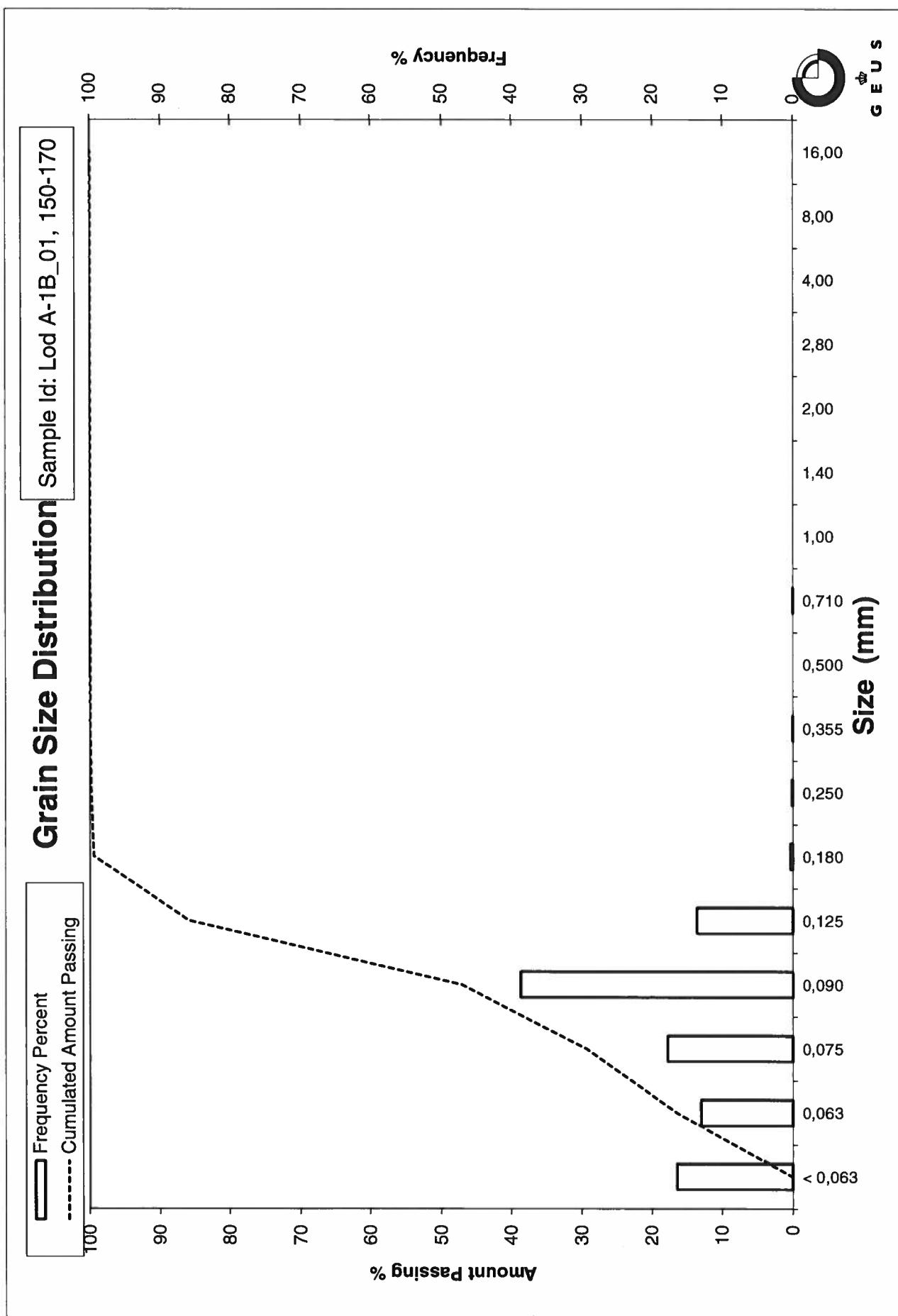
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_02, 20-40
Lab. Id: 200702
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 750,65 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	163,84	21,83	78,17
8,00	-3,00	154,56	20,59	57,58
4,00	-2,00	100,12	13,34	44,25
2,80	-1,49	21,92	2,92	41,33
2,00	-1,00	13,17	1,75	39,57
1,40	-0,49	11,10	1,48	38,09
1,00	0,00	13,09	1,74	36,35
0,710	0,49	17,98	2,40	33,96
0,500	1,00	35,80	4,77	29,19
0,355	1,49	65,11	8,67	20,51
0,250	2,00	101,87	13,57	6,94
0,180	2,47	39,98	5,33	1,62
0,125	3,00	5,85	0,78	0,84
0,090	3,47	1,83	0,24	0,59
0,075	3,74	0,56	0,07	0,52
0,063	3,99	0,52	0,07	0,45
< 0,063	> 3,99	3,38	0,45	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,45
Sand, fine	(0,063 mm - 0,200 mm): 2,69
Sand, medium	(0,2 mm - 0,6 mm): 28,32
Sand, coarse	(0,6 mm - 2 mm): 8,11
Gravel	(> 2 mm): 60,43
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	-----	-----
25%	75%	14,77	-3,88
40%	60%	8,94	-3,16
Median 50%	50%	5,73	-2,52
75%	25%	0,43	1,22
84%	16%	0,32	1,64
90%	10%	0,27	1,87
95%	5%	0,22	2,16

Moments Statistics

Mean	-0,44
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	32,66

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

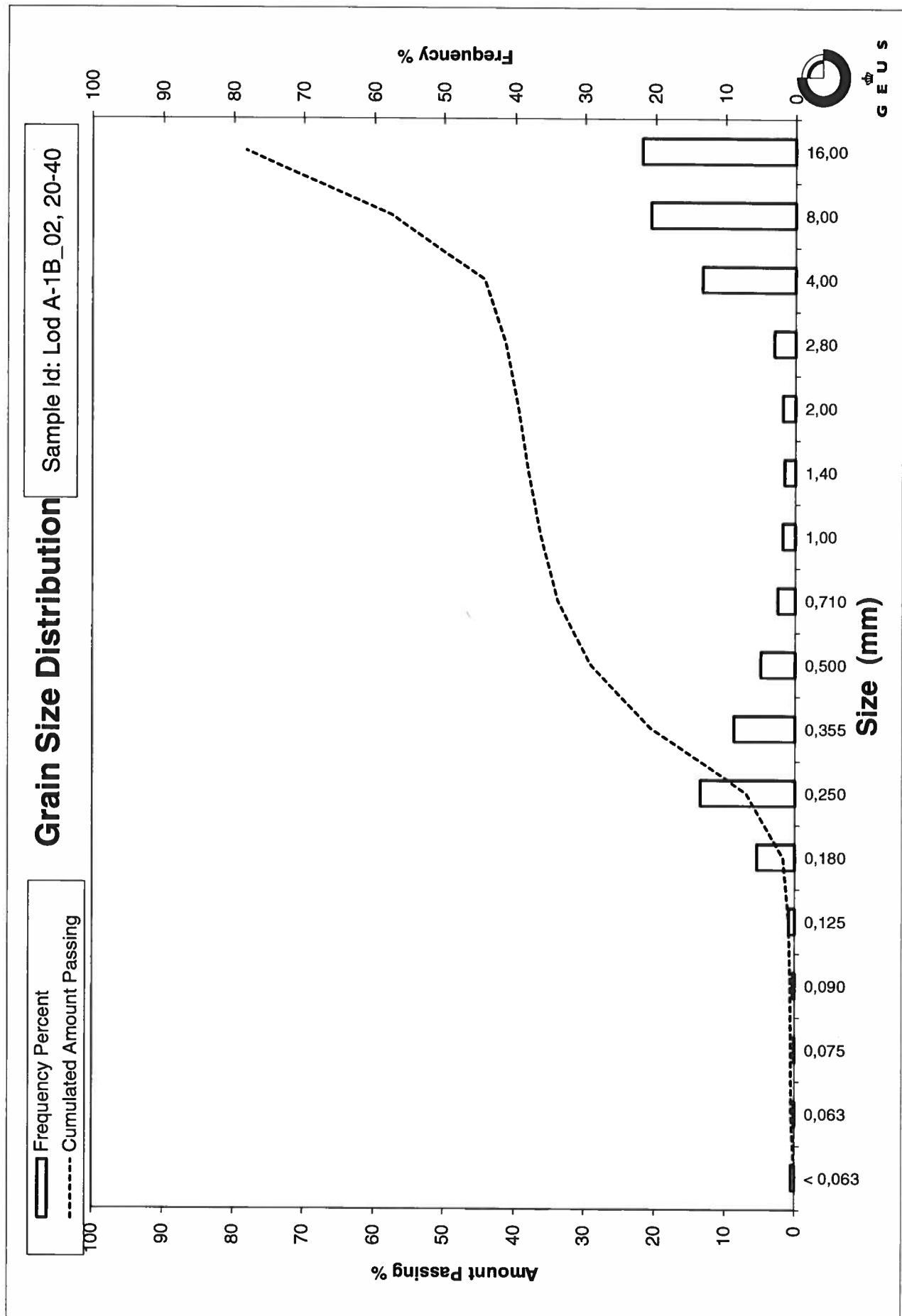
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_02, 290-310
Lab. Id: 200703
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 99,58 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,15	0,15	99,85
0,710	0,49	1,09	1,09	98,75
0,500	1,00	15,38	15,44	83,31
0,355	1,49	44,22	44,41	38,90
0,250	2,00	25,22	25,33	13,58
0,180	2,47	7,68	7,71	5,86
0,125	3,00	3,21	3,22	2,64
0,090	3,47	0,67	0,67	1,97
0,075	3,74	0,17	0,17	1,80
0,063	3,99	0,10	0,10	1,70
< 0,063	> 3,99	1,69	1,70	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,70
Sand, fine	(0,063 mm - 0,200 mm):	6,37
Sand, medium	(0,2 mm - 0,6 mm):	82,60
Sand, coarse	(0,6 mm - 2 mm):	9,34
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,66	0,60
16%	84%	0,51	0,97
25%	75%	0,47	1,08
40%	60%	0,42	1,24
Median 50%	50%	0,39	1,35
75%	25%	0,30	1,75
84%	16%	0,26	1,94
90%	10%	0,22	2,20
95%	5%	0,17	2,60

Moments Statistics

Mean	1,42
Sorting	0,54
Skewness	0,23
Kurtosis	1,22
Uniformity Coefficient	1,95

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

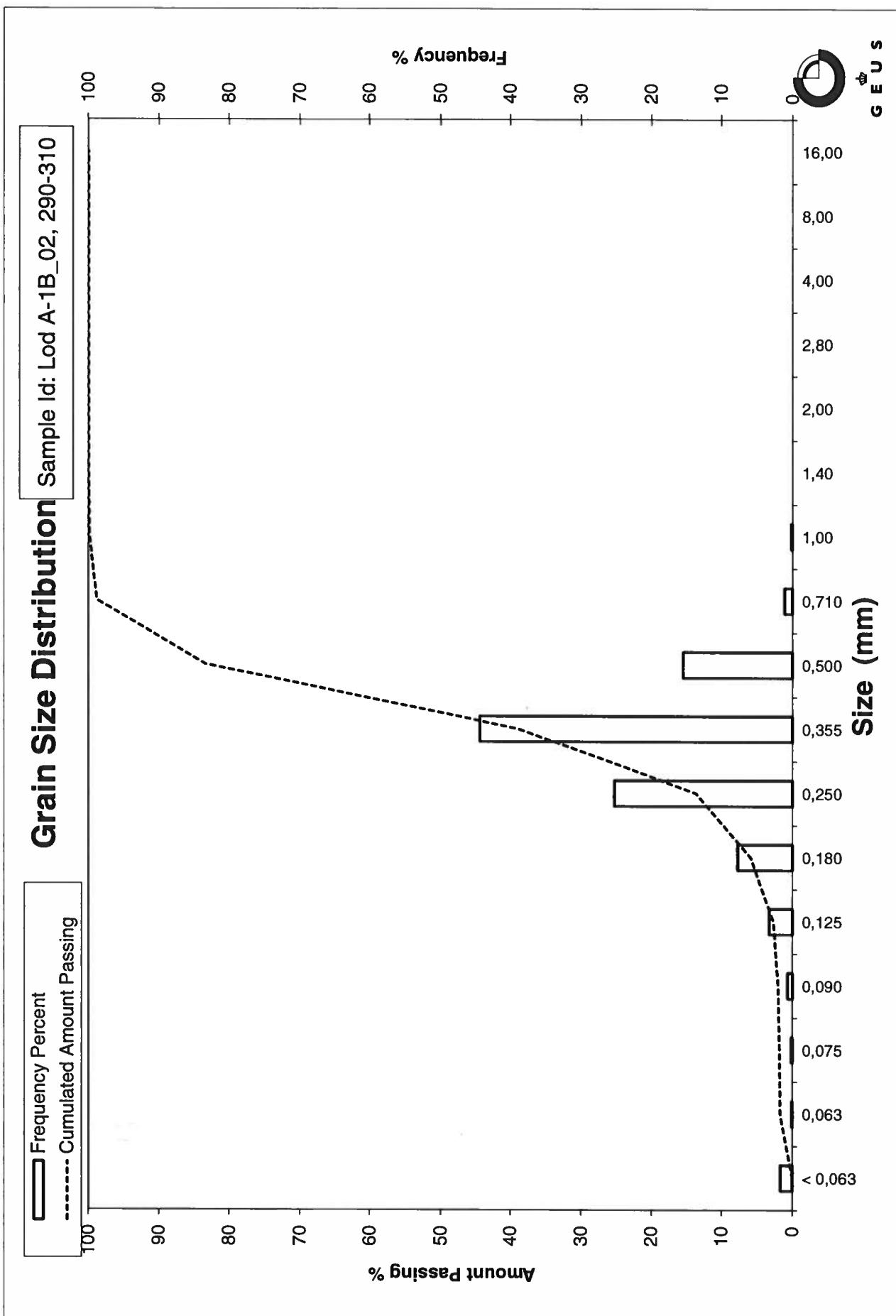
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_03, 0-20
Lab. Id: 200704
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 357,72 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	97,87	27,36	72,64
8,00	-3,00	51,29	14,34	58,30
4,00	-2,00	20,51	5,73	52,57
2,80	-1,49	4,86	1,36	51,21
2,00	-1,00	2,79	0,78	50,43
1,40	-0,49	3,32	0,93	49,50
1,00	0,00	3,96	1,11	48,40
0,710	0,49	6,22	1,74	46,66
0,500	1,00	20,78	5,81	40,85
0,355	1,49	61,31	17,14	23,71
0,250	2,00	67,84	18,97	4,75
0,180	2,47	12,25	3,43	1,32
0,125	3,00	2,54	0,71	0,61
0,090	3,47	0,45	0,13	0,49
0,075	3,74	0,06	0,02	0,47
0,063	3,99	0,00	0,00	0,47
< 0,063	> 3,99	1,68	0,47	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,47
Sand, fine	(0,063 mm - 0,200 mm):	1,83
Sand, medium	(0,2 mm - 0,6 mm):	41,32
Sand, coarse	(0,6 mm - 2 mm):	6,82
Gravel	(> 2 mm):	49,57
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	-----	-----
16%	84%	-----	-----
25%	75%	-----	-----
40%	60%	8,95	-3,16
Median 50%	50%	1,72	-0,78
75%	25%	0,37	1,45
84%	16%	0,31	1,68
90%	10%	0,28	1,84
95%	5%	0,25	1,99

Moments Statistics

Mean	0,45
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	32,06

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

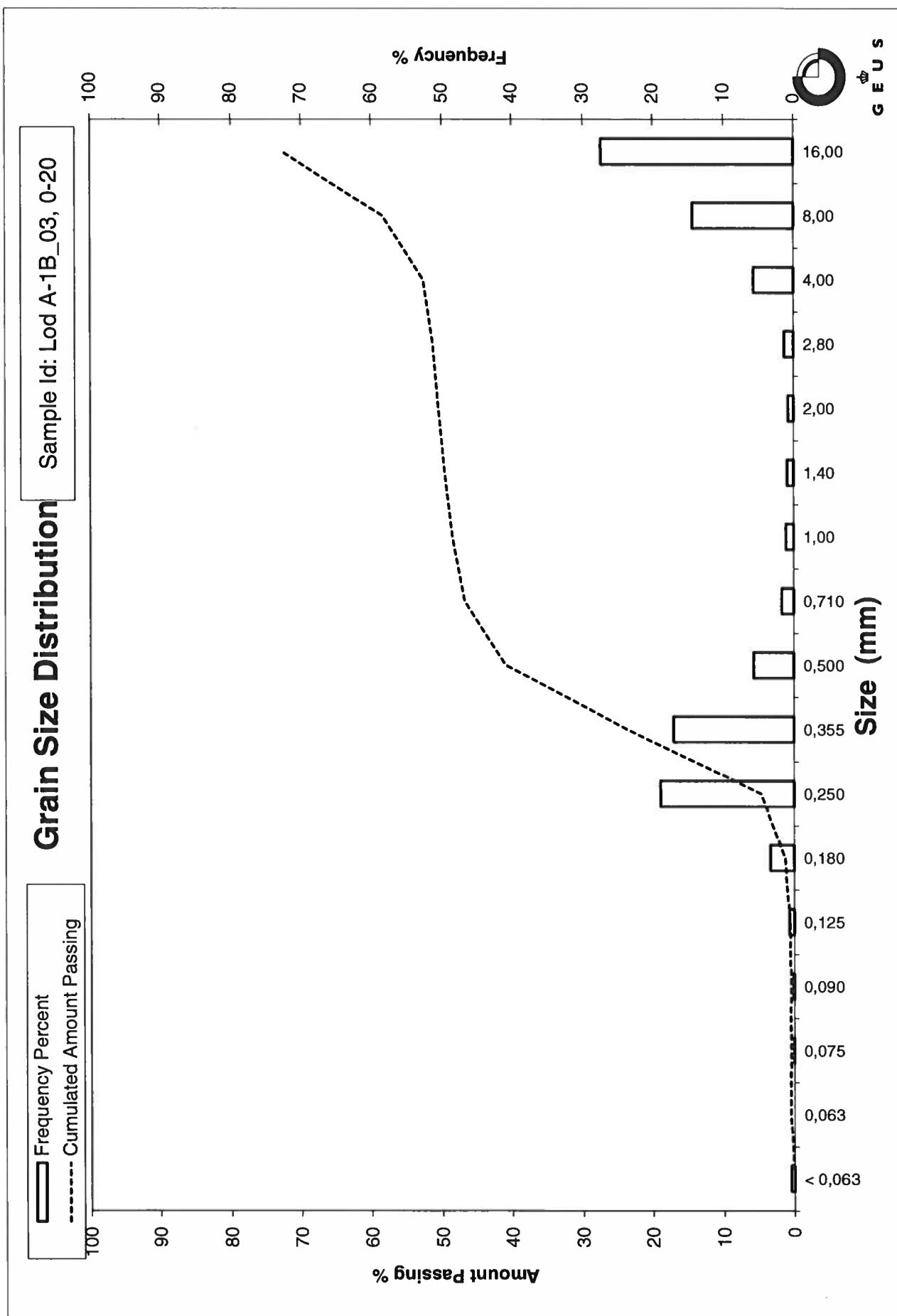
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_03, 100-120
Lab. Id: 200705
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 304,56 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	7,48	2,46	97,54
8,00	-3,00	12,41	4,07	93,47
4,00	-2,00	33,58	11,03	82,44
2,80	-1,49	21,50	7,06	75,38
2,00	-1,00	22,95	7,54	67,85
1,40	-0,49	22,35	7,34	60,51
1,00	0,00	36,23	11,90	48,61
0,710	0,49	39,41	12,94	35,67
0,500	1,00	51,04	16,76	18,91
0,355	1,49	32,36	10,63	8,29
0,250	2,00	11,72	3,85	4,44
0,180	2,47	7,21	2,37	2,07
0,125	3,00	2,51	0,82	1,25
0,090	3,47	0,58	0,19	1,06
0,075	3,74	0,12	0,04	1,02
0,063	3,99	0,08	0,03	1,00
< 0,063	> 3,99	3,03	1,00	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,00
Sand, fine	(0,063 mm - 0,200 mm): 1,75
Sand, medium	(0,2 mm - 0,6 mm): 24,14
Sand, coarse	(0,6 mm - 2 mm): 40,95
Gravel	(> 2 mm): 32,15
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	11,01	-3,46
16%	84%	4,57	-2,19
25%	75%	2,76	-1,46
40%	60%	1,38	-0,47
Median 50%	50%	1,05	-0,07
75%	25%	0,58	0,80
84%	16%	0,46	1,12
90%	10%	0,38	1,40
95%	5%	0,27	1,91

Moments Statistics

Mean	-0,38
Sorting	1,64
Skewness	-0,27
Kurtosis	0,97
Uniformity Coefficient	3,66

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

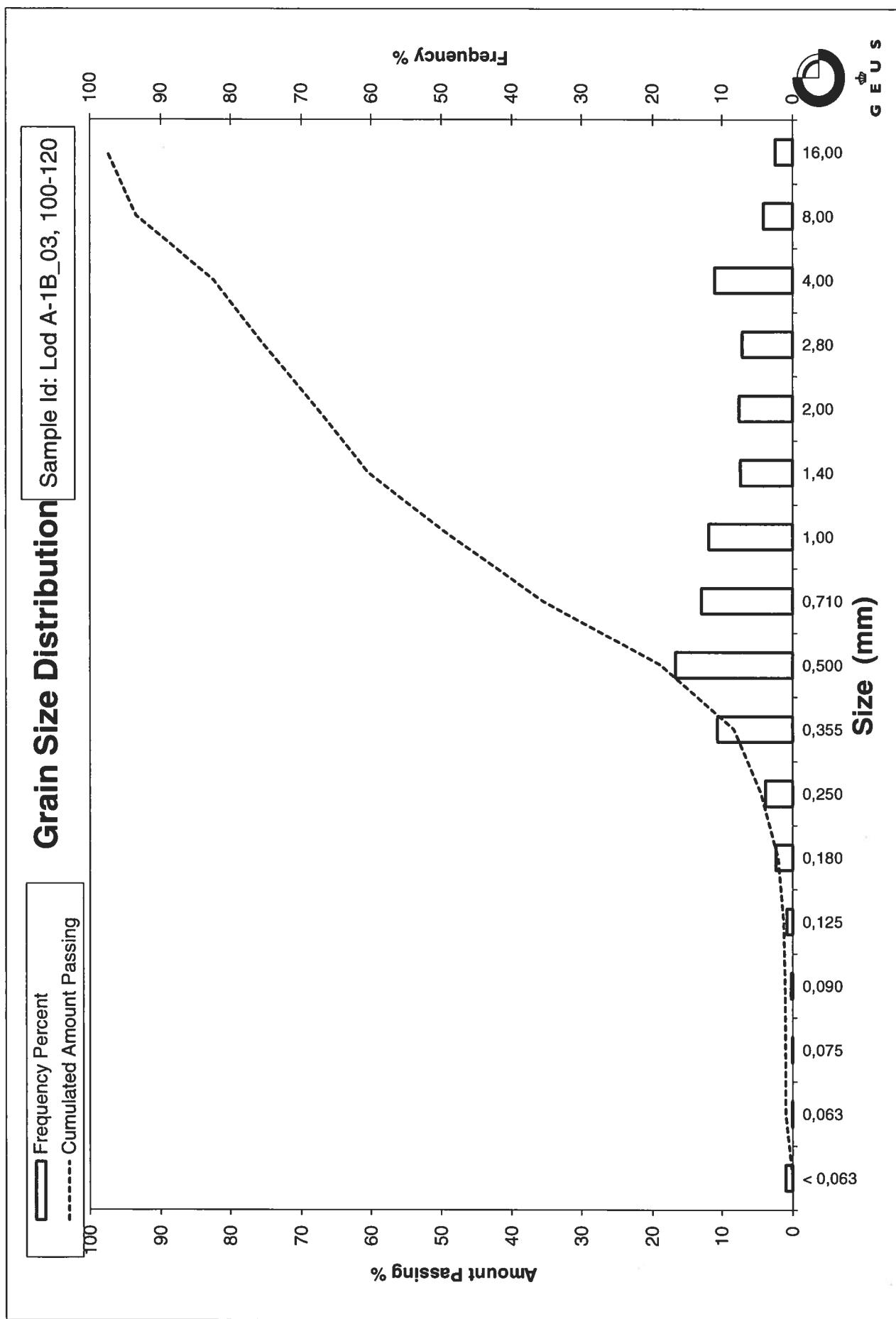
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_03, 200-220
Lab. Id: 200706
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 109,67 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,91	2,65	97,35
4,00	-2,00	1,41	1,29	96,06
2,80	-1,49	0,80	0,73	95,33
2,00	-1,00	1,12	1,02	94,31
1,40	-0,49	1,44	1,31	93,00
1,00	0,00	2,53	2,31	90,69
0,710	0,49	4,03	3,67	87,02
0,500	1,00	14,47	13,19	73,82
0,355	1,49	38,97	35,53	38,29
0,250	2,00	30,50	27,81	10,48
0,180	2,47	6,78	6,18	4,29
0,125	3,00	1,61	1,47	2,83
0,090	3,47	0,72	0,66	2,17
0,075	3,74	0,15	0,14	2,03
0,063	3,99	0,09	0,08	1,95
< 0,063	> 3,99	2,14	1,95	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,95
Sand, fine	(0,063 mm - 0,200 mm): 4,11
Sand, medium	(0,2 mm - 0,6 mm): 74,04
Sand, coarse	(0,6 mm - 2 mm): 14,21
Gravel	(> 2 mm): 5,69
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	2,54	-1,35
16%	84%	0,66	0,60
25%	75%	0,52	0,95
40%	60%	0,44	1,17
Median 50%	50%	0,40	1,31
75%	25%	0,30	1,71
84%	16%	0,27	1,88
90%	10%	0,24	2,03
95%	5%	0,19	2,41

Moments Statistics

Mean	1,26
Sorting	0,89
Skewness	-0,26
Kurtosis	2,01
Uniformity Coefficient	1,81

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

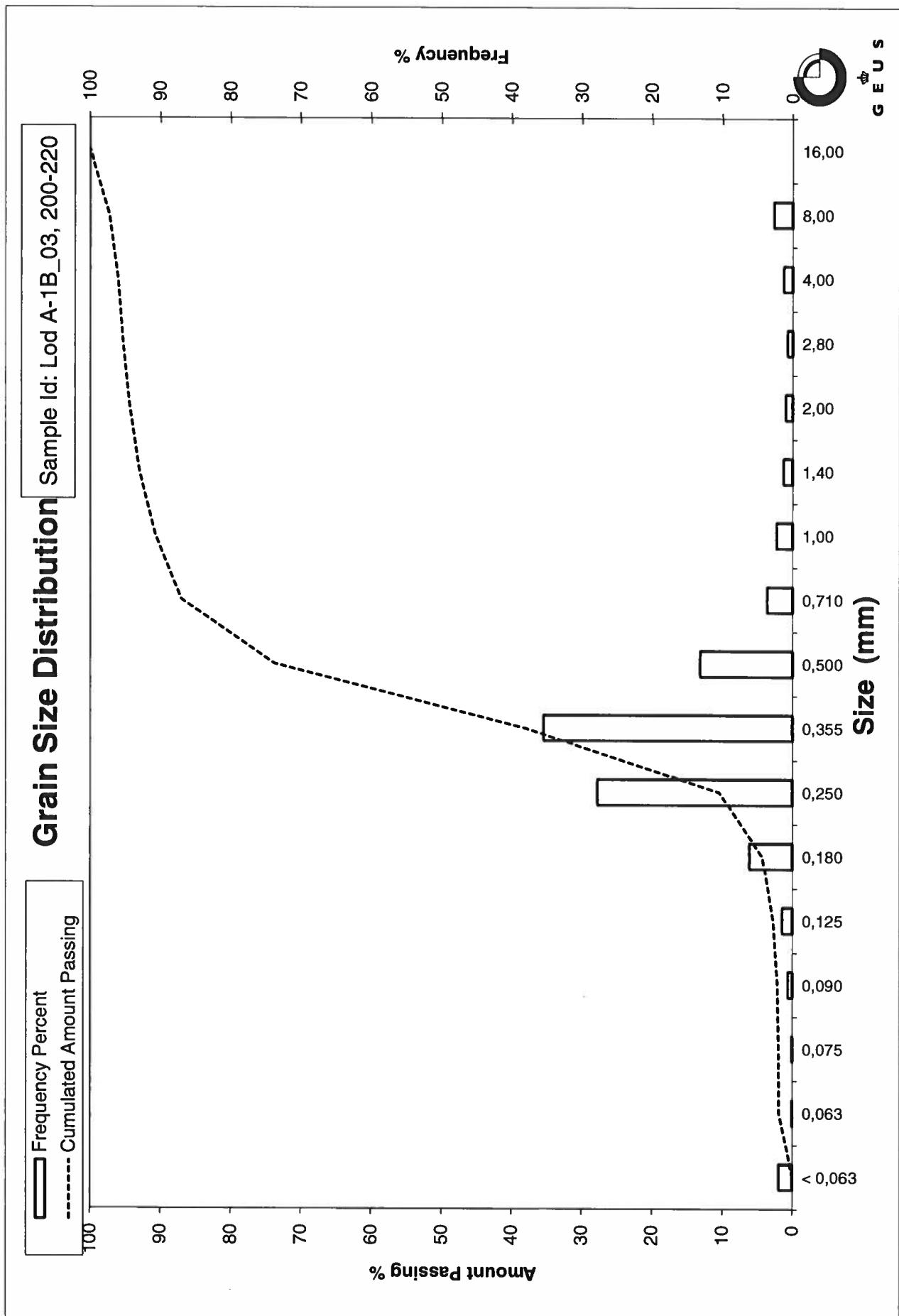
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_03, 300-320
Lab. Id: 200707
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 358,32 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	19,72	5,50	94,50
8,00	-3,00	36,63	10,22	84,27
4,00	-2,00	29,38	8,20	76,07
2,80	-1,49	22,84	6,38	69,70
2,00	-1,00	26,95	7,52	62,18
1,40	-0,49	30,87	8,62	53,56
1,00	0,00	51,87	14,48	39,09
0,710	0,49	47,30	13,20	25,89
0,500	1,00	51,42	14,35	11,54
0,355	1,49	25,32	7,07	4,47
0,250	2,00	5,46	1,52	2,95
0,180	2,47	1,71	0,48	2,47
0,125	3,00	1,22	0,34	2,13
0,090	3,47	0,67	0,19	1,94
0,075	3,74	0,26	0,07	1,87
0,063	3,99	0,22	0,06	1,81
< 0,063	> 3,99	6,50	1,81	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,81
Sand, fine	(0,063 mm - 0,200 mm): 0,79
Sand, medium	(0,2 mm - 0,6 mm): 15,76
Sand, coarse	(0,6 mm - 2 mm): 43,81
Gravel	(> 2 mm): 37,82
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	7,87	-2,98
25%	75%	3,80	-1,93
40%	60%	1,85	-0,89
Median 50%	50%	1,30	-0,38
75%	25%	0,70	0,52
84%	16%	0,57	0,82
90%	10%	0,47	1,09
95%	5%	0,37	1,45

Moments Statistics

Mean	-0,84
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	3,95

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

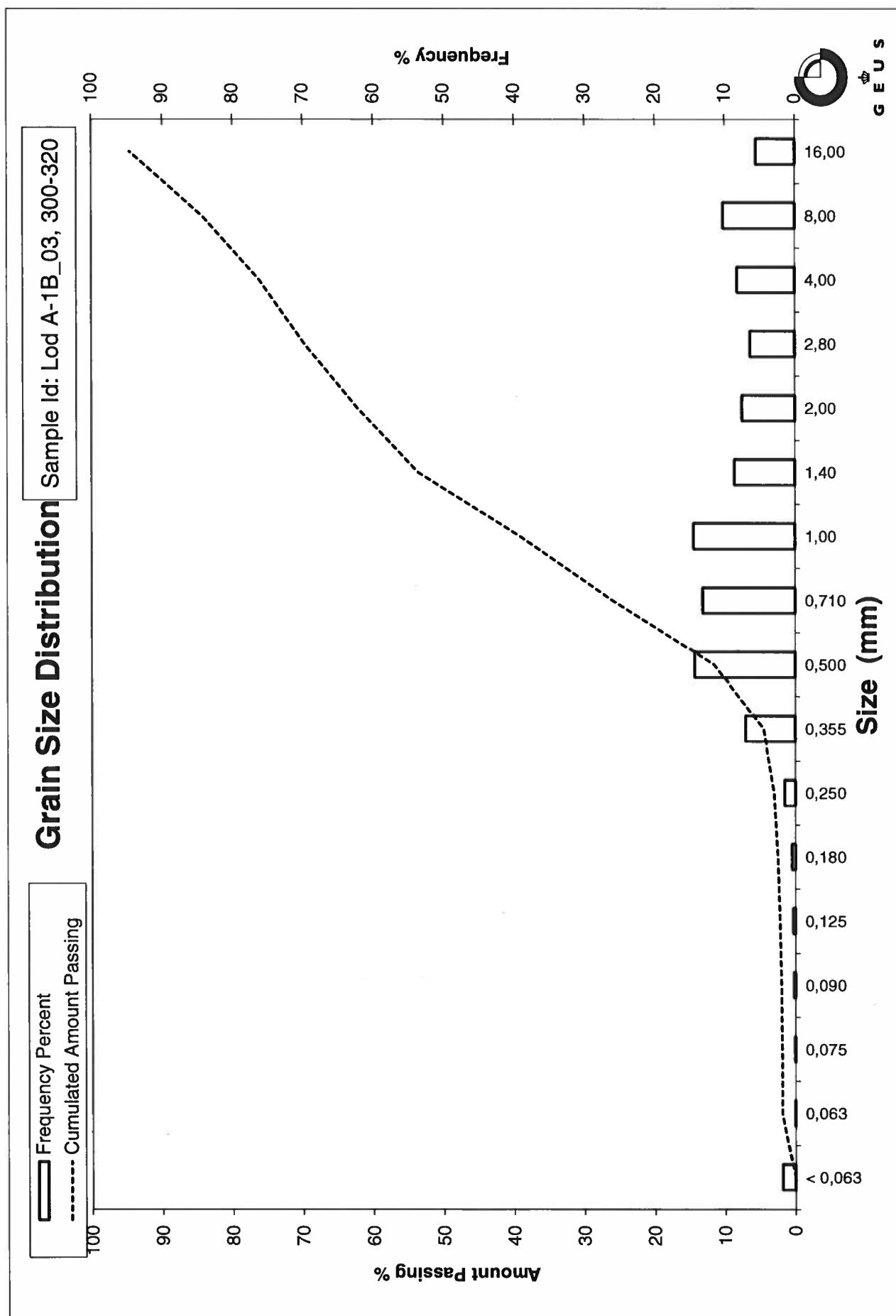
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_03, 390-410
Lab. Id: 200708
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 102,98 g

Size Fractions

Sieve Analysis	
Gravel	
Sand	

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,69	1,64	98,36
4,00	-2,00	0,60	0,58	97,78
2,80	-1,49	0,03	0,03	97,75
2,00	-1,00	0,12	0,12	97,63
1,40	-0,49	0,09	0,09	97,54
1,00	0,00	0,14	0,14	97,41
0,710	0,49	0,83	0,81	96,60
0,500	1,00	9,05	8,79	87,81
0,355	1,49	34,44	33,44	54,37
0,250	2,00	40,19	39,03	15,34
0,180	2,47	10,73	10,42	4,92
0,125	3,00	3,02	2,93	1,99
0,090	3,47	0,24	0,23	1,76
0,075	3,74	0,01	0,01	1,75
0,063	3,99	0,00	0,00	1,75
< 0,063	> 3,99	1,80	1,75	0,00

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,75
Sand, fine	(0,063 mm - 0,200 mm):	6,15
Sand, medium	(0,2 mm - 0,6 mm):	84,10
Sand, coarse	(0,6 mm - 2 mm):	5,63
Gravel	(> 2 mm):	2,37
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,67	0,57
16%	84%	0,48	1,05
25%	75%	0,44	1,17
40%	60%	0,38	1,40
Median 50%	50%	0,34	1,54
75%	25%	0,28	1,86
84%	16%	0,25	1,99
90%	10%	0,21	2,22
95%	5%	0,18	2,47

Moments Statistics

Mean	1,53
Sorting	0,52
Skewness	-0,04
Kurtosis	1,13
Uniformity Coefficient	1,77

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

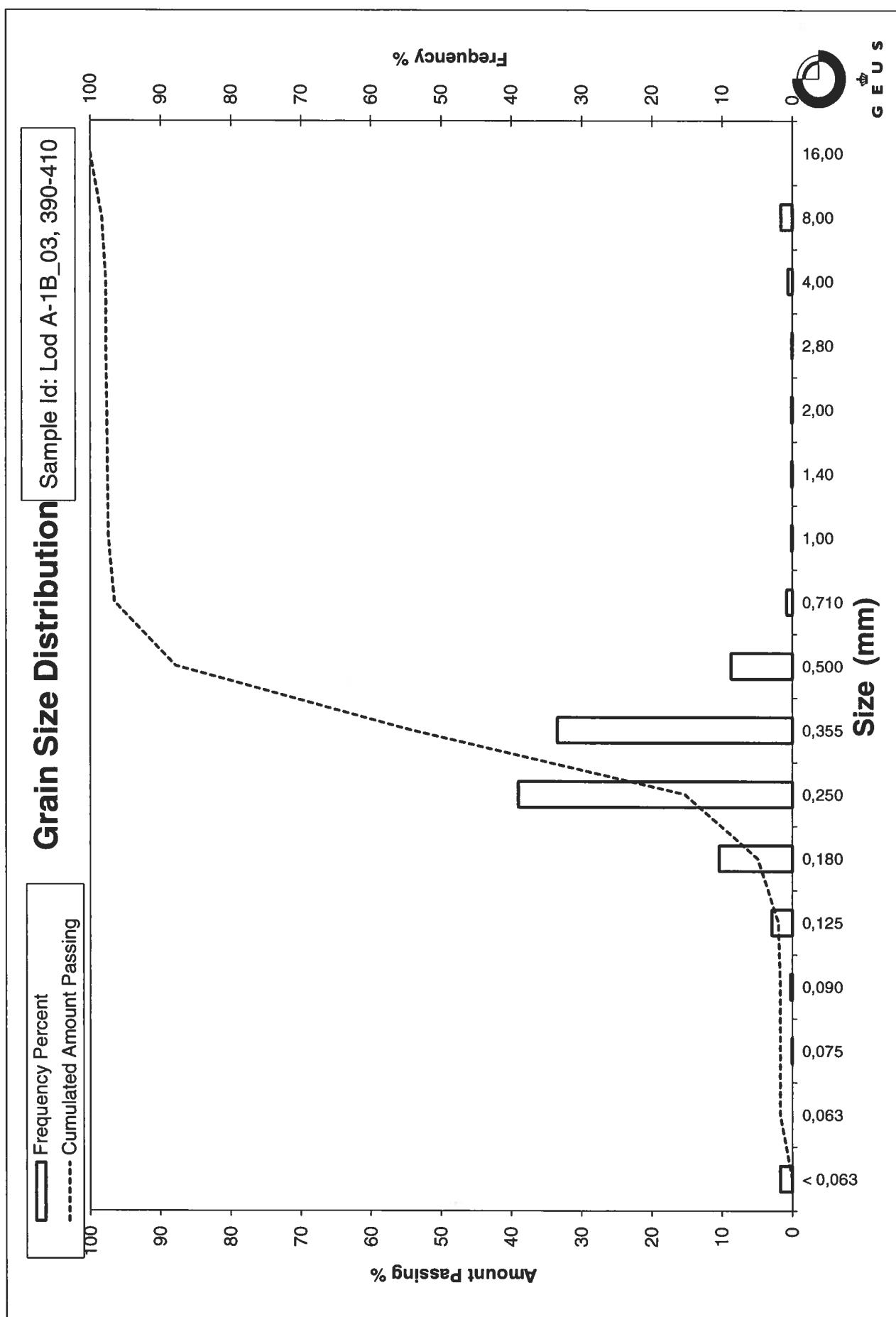
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($\phi 16\% + \phi 84\% - 2 * \phi 50\% / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\% / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgr-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_04, 0-18
Lab. Id: 200709
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 101,76 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,30	0,29	99,71
2,80	-1,49	0,12	0,12	99,59
2,00	-1,00	0,07	0,07	99,52
1,40	-0,49	0,12	0,12	99,40
1,00	0,00	0,62	0,61	98,79
0,710	0,49	1,46	1,43	97,36
0,500	1,00	4,59	4,51	92,85
0,355	1,49	12,12	11,91	80,94
0,250	2,00	46,80	45,99	34,94
0,180	2,47	30,20	29,68	5,27
0,125	3,00	3,60	3,54	1,73
0,090	3,47	0,38	0,37	1,36
0,075	3,74	0,05	0,05	1,31
0,063	3,99	0,03	0,03	1,28
< 0,063	> 3,99	1,30	1,28	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,28
Sand, fine	(0,063 mm - 0,200 mm): 12,47
Sand, medium	(0,2 mm - 0,6 mm): 81,25
Sand, coarse	(0,6 mm - 2 mm): 4,52
Gravel	(> 2 mm): 0,48
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,60	0,74
16%	84%	0,39	1,35
25%	75%	0,34	1,55
40%	60%	0,31	1,70
Median 50%	50%	0,28	1,81
75%	25%	0,23	2,14
84%	16%	0,21	2,28
90%	10%	0,19	2,39
95%	5%	0,18	2,51

Moments Statistics

Mean	1,82
Sorting	0,50
Skewness	-0,11
Kurtosis	1,23
Uniformity Coefficient	1,61

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

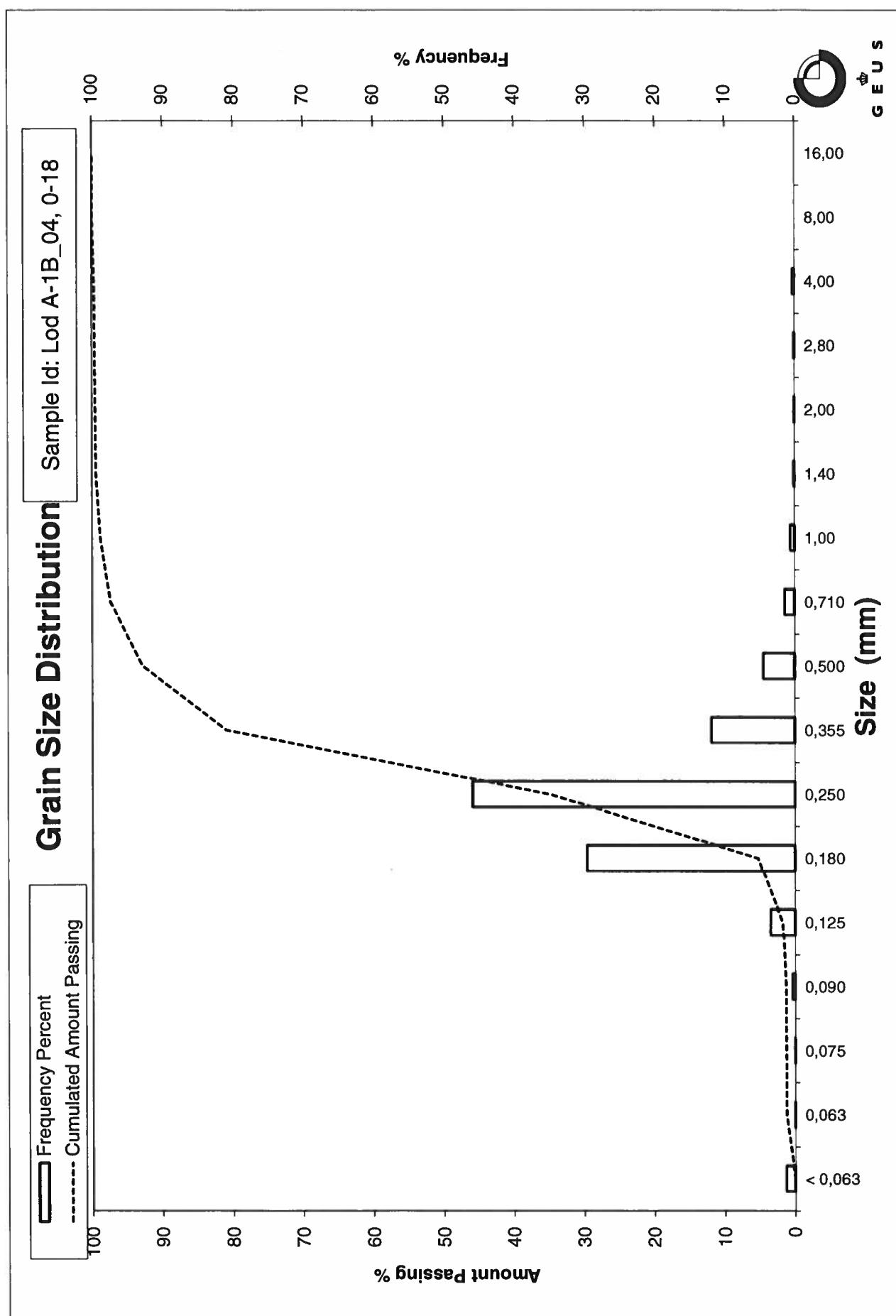
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_04, 100-120
Lab. Id: 200710
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 101,15 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,20	0,20	99,80
2,80	-1,49	0,00	0,00	99,80
2,00	-1,00	0,00	0,00	99,80
1,40	-0,49	0,00	0,00	99,80
1,00	0,00	0,10	0,10	99,70
0,710	0,49	0,40	0,40	99,31
0,500	1,00	2,88	2,85	96,46
0,355	1,49	11,17	11,04	85,42
0,250	2,00	45,08	44,57	40,85
0,180	2,47	35,57	35,17	5,68
0,125	3,00	4,22	4,17	1,51
0,090	3,47	0,39	0,39	1,13
0,075	3,74	0,04	0,04	1,09
0,063	3,99	0,01	0,01	1,08
< 0,063	> 3,99	1,09	1,08	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay (< 0,063 mm):	1,08
Sand, fine (0,063 mm - 0,200 mm):	14,65
Sand, medium (0,2 mm - 0,6 mm):	82,08
Sand, coarse (0,6 mm - 2 mm):	1,99
Gravel (> 2 mm):	0,20
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,48	1,06
16%	84%	0,35	1,51
25%	75%	0,33	1,60
40%	60%	0,30	1,76
Median 50%	50%	0,27	1,88
75%	25%	0,22	2,19
84%	16%	0,20	2,32
90%	10%	0,19	2,41
95%	5%	0,17	2,55

Moments Statistics

Mean	1,90
Sorting	0,43
Skewness	-0,01
Kurtosis	1,02
Uniformity Coefficient	1,56

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi_{16\%} + \phi_{84\%} + \phi_{50\%}$) / 3 (Folk and Ward 1957)

Sorting ($\phi_{84\%} - \phi_{16\%}$) / 4 + ($\phi_{95\%} - \phi_{5\%}$) / 6,6 (Folk and Ward 1957)

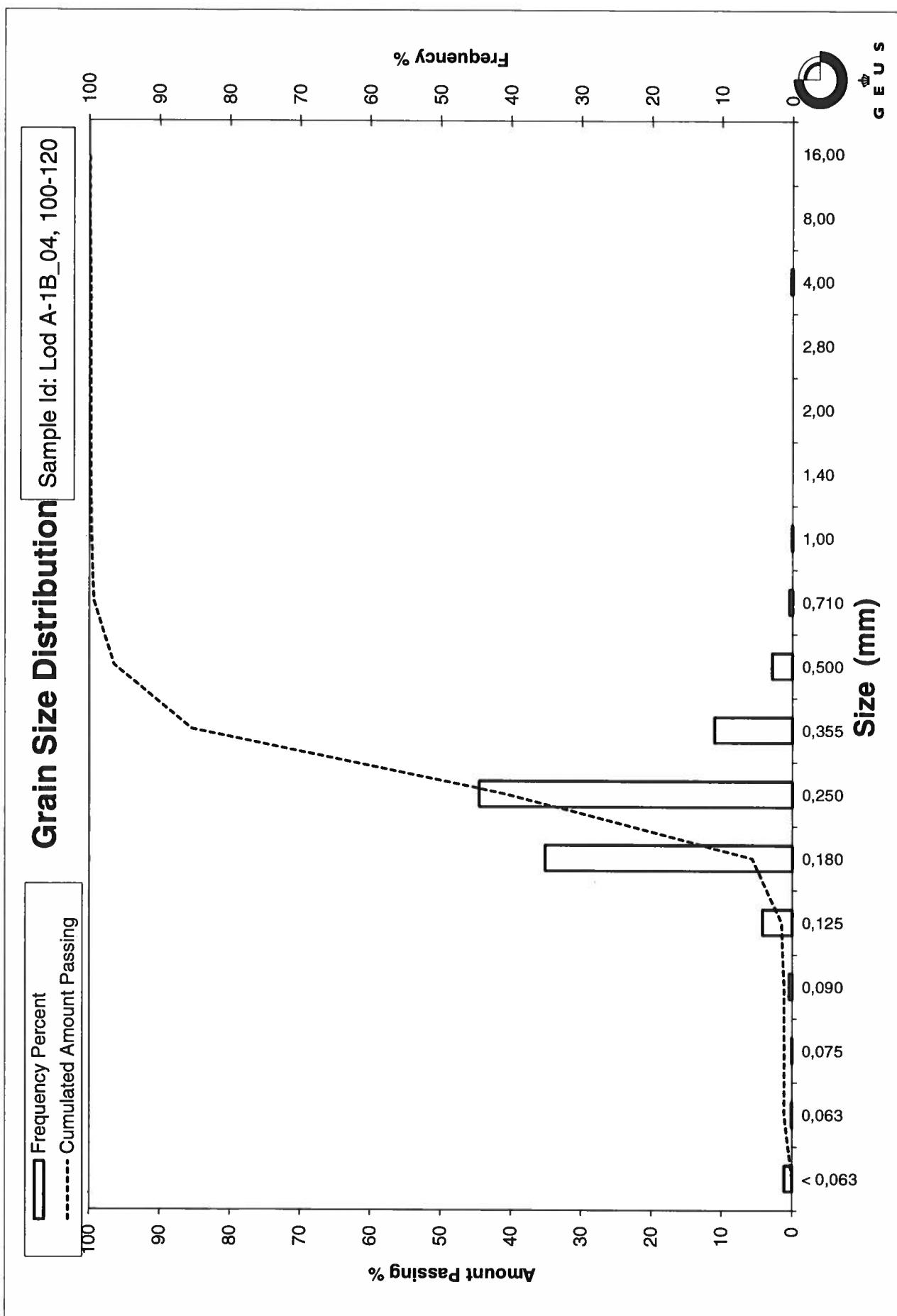
Kurtosis ($\phi_{95\%} - \phi_{5\%}$) / (2,44 * ($\phi_{75\%} - \phi_{25\%}$)) (Folk and Ward 1957)

Skewness ($\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{84\%} - \phi_{16\%}$)) + ($\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}$) / (2 * ($\phi_{95\%} - \phi_{5\%}$)) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_04, 200-220
Lab. Id: 200711
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 100,84 g

Size Fractions

Sieve Analysis	
Gravel	
Sand	

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,03	0,03	99,97
2,00	-1,00	0,04	0,04	99,93
1,40	-0,49	0,03	0,03	99,90
1,00	0,00	0,18	0,18	99,72
0,710	0,49	0,58	0,58	99,15
0,500	1,00	3,98	3,95	95,20
0,355	1,49	15,59	15,46	79,74
0,250	2,00	37,01	36,70	43,04
0,180	2,47	37,58	37,27	5,77
0,125	3,00	4,58	4,54	1,23
0,090	3,47	0,32	0,32	0,91
0,075	3,74	0,03	0,03	0,88
0,063	3,99	0,00	0,00	0,88
< 0,063	> 3,99	0,89	0,88	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,88
Sand, fine	(0,063 mm - 0,200 mm): 15,54
Sand, medium	(0,2 mm - 0,6 mm): 80,66
Sand, coarse	(0,6 mm - 2 mm): 2,85
Gravel	(> 2 mm): 0,07
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,50	1,01
16%	84%	0,39	1,34
25%	75%	0,34	1,55
40%	60%	0,30	1,74
Median 50%	50%	0,27	1,89
75%	25%	0,22	2,21
84%	16%	0,20	2,33
90%	10%	0,19	2,41
95%	5%	0,17	2,55

Moments Statistics

Mean	1,85
Sorting	0,48
Skewness	-0,13
Kurtosis	0,96
Uniformity Coefficient	1,59

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

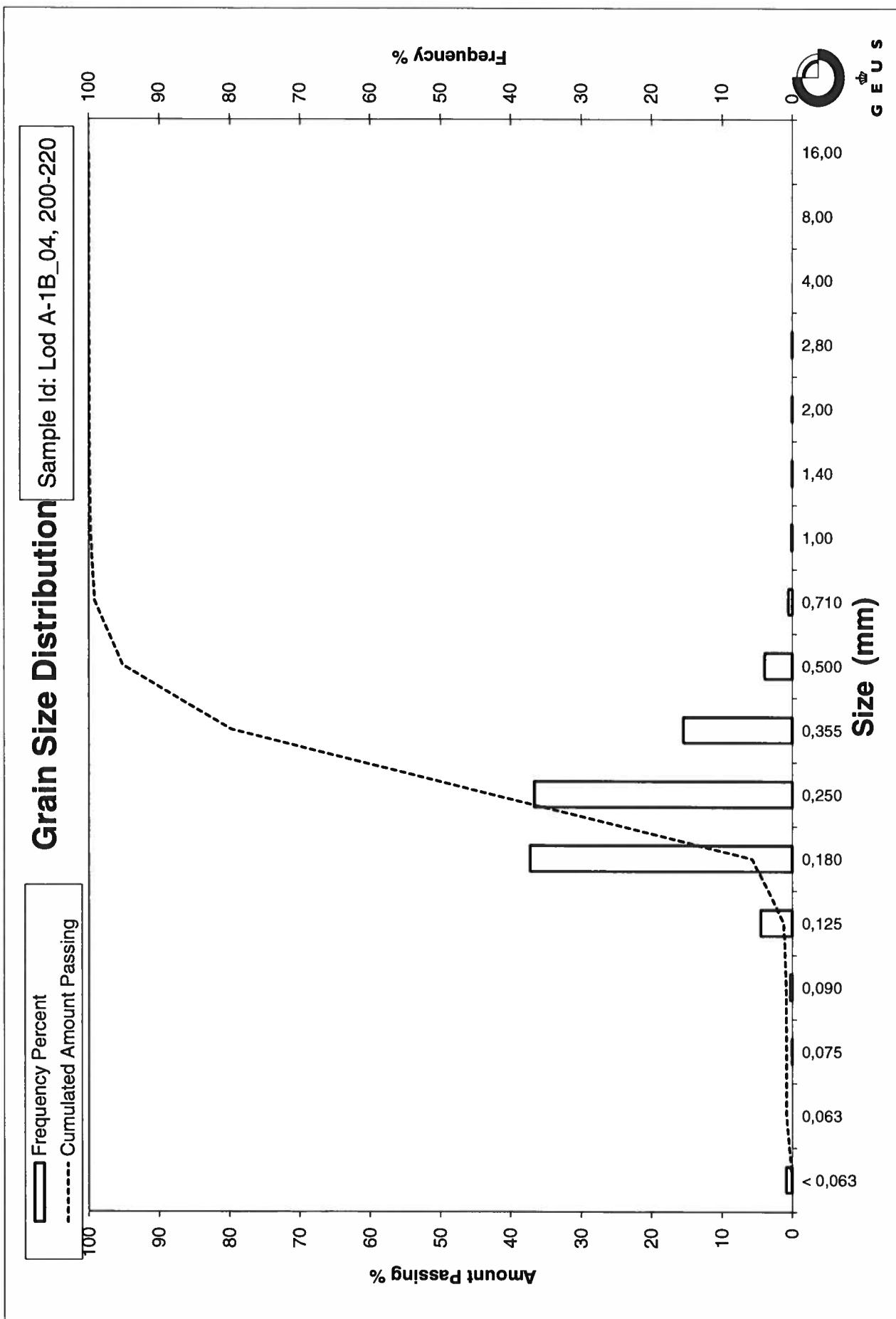
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_04, 245-255
Lab. Id: 200712
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 103,97 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,61	0,59	99,41
4,00	-2,00	0,75	0,72	98,69
2,80	-1,49	0,41	0,39	98,30
2,00	-1,00	0,75	0,72	97,58
1,40	-0,49	1,04	1,00	96,58
1,00	0,00	1,79	1,72	94,85
0,710	0,49	2,96	2,85	92,01
0,500	1,00	8,15	7,84	84,17
0,355	1,49	17,05	16,40	67,77
0,250	2,00	29,55	28,42	39,35
0,180	2,47	33,18	31,91	7,43
0,125	3,00	5,73	5,51	1,92
0,090	3,47	0,51	0,49	1,43
0,075	3,74	0,06	0,06	1,38
0,063	3,99	0,03	0,03	1,35
< 0,063	> 3,99	1,40	1,35	0,00

Gravel

Sand

Sieve Analysis

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,35
Sand, fine	(0,063 mm - 0,200 mm):	15,21
Sand, medium	(0,2 mm - 0,6 mm):	71,35
Sand, coarse	(0,6 mm - 2 mm):	9,67
Gravel	(> 2 mm):	2,42
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,03	-0,05
16%	84%	0,50	1,00
25%	75%	0,42	1,26
40%	60%	0,33	1,62
Median 50%	50%	0,29	1,79
75%	25%	0,22	2,19
84%	16%	0,20	2,33
90%	10%	0,19	2,43
95%	5%	0,16	2,68

Moments Statistics

Mean	1,71
Sorting	0,75
Skewness	-0,26
Kurtosis	1,19
Uniformity Coefficient	1,76

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

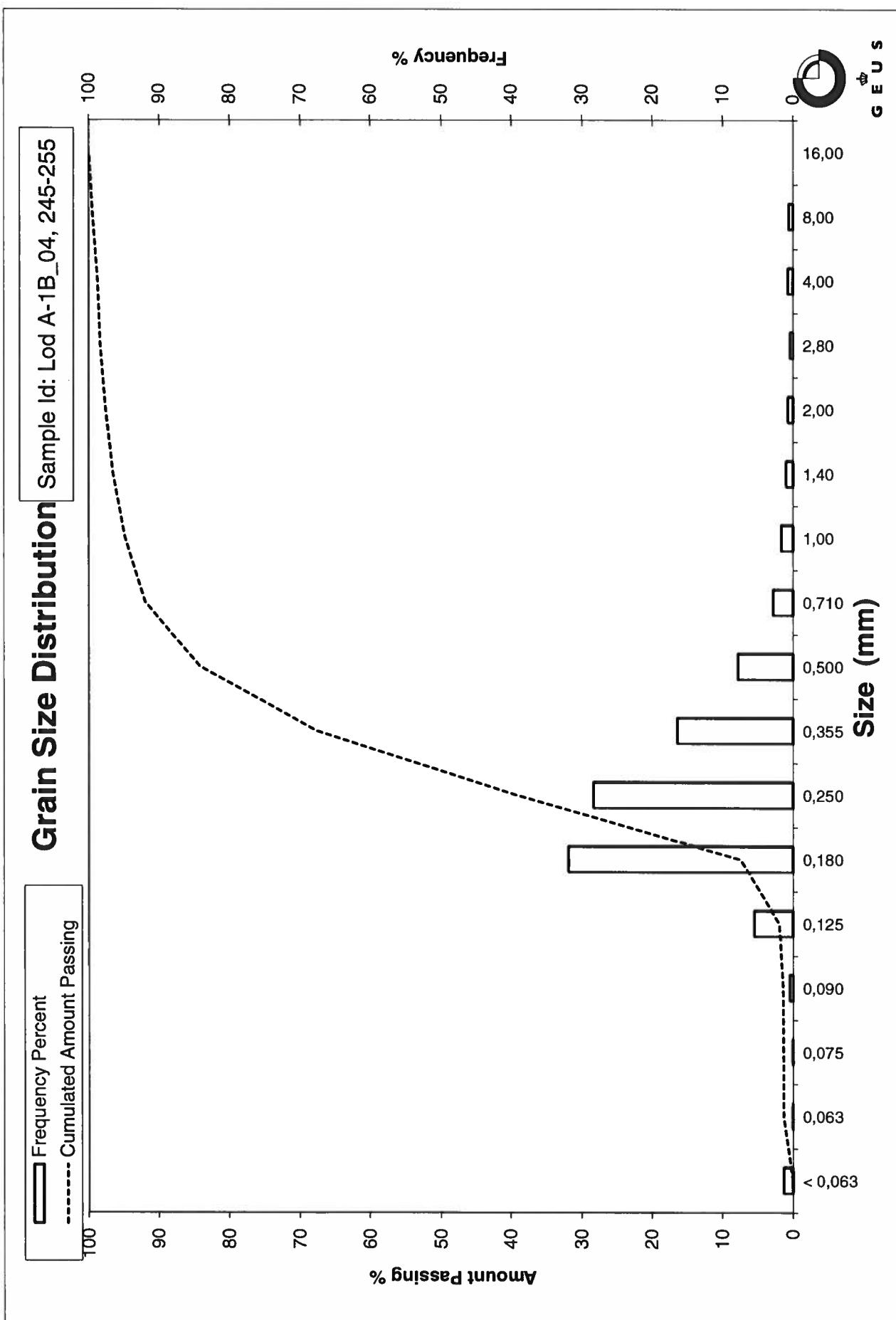
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_05, 0-20
Lab. Id: 200713
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 101,66 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,16	0,16	99,84
2,80	-1,49	0,00	0,00	99,84
2,00	-1,00	0,10	0,10	99,74
1,40	-0,49	0,34	0,33	99,41
1,00	0,00	1,19	1,17	98,24
0,710	0,49	3,31	3,26	94,98
0,500	1,00	13,13	12,92	82,07
0,355	1,49	27,98	27,52	54,54
0,250	2,00	37,17	36,56	17,98
0,180	2,47	15,00	14,76	3,23
0,125	3,00	1,61	1,58	1,64
0,090	3,47	0,16	0,16	1,49
0,075	3,74	0,00	0,00	1,49
0,063	3,99	0,00	0,00	1,49
< 0,063	> 3,99	1,51	1,49	0,00

Gravel

Sand

Sieve Analysis

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,49
Sand, fine	(0,063 mm - 0,200 mm):	5,96
Sand, medium	(0,2 mm - 0,6 mm):	80,78
Sand, coarse	(0,6 mm - 2 mm):	11,53
Gravel	(> 2 mm):	0,26
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,71	0,49
16%	84%	0,53	0,91
25%	75%	0,46	1,11
40%	60%	0,38	1,38
Median 50%	50%	0,34	1,55
75%	25%	0,27	1,89
84%	16%	0,24	2,06
90%	10%	0,21	2,24
95%	5%	0,19	2,41

Moments Statistics

Mean	1,51
Sorting	0,58
Skewness	-0,11
Kurtosis	1,01
Uniformity Coefficient	1,81

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

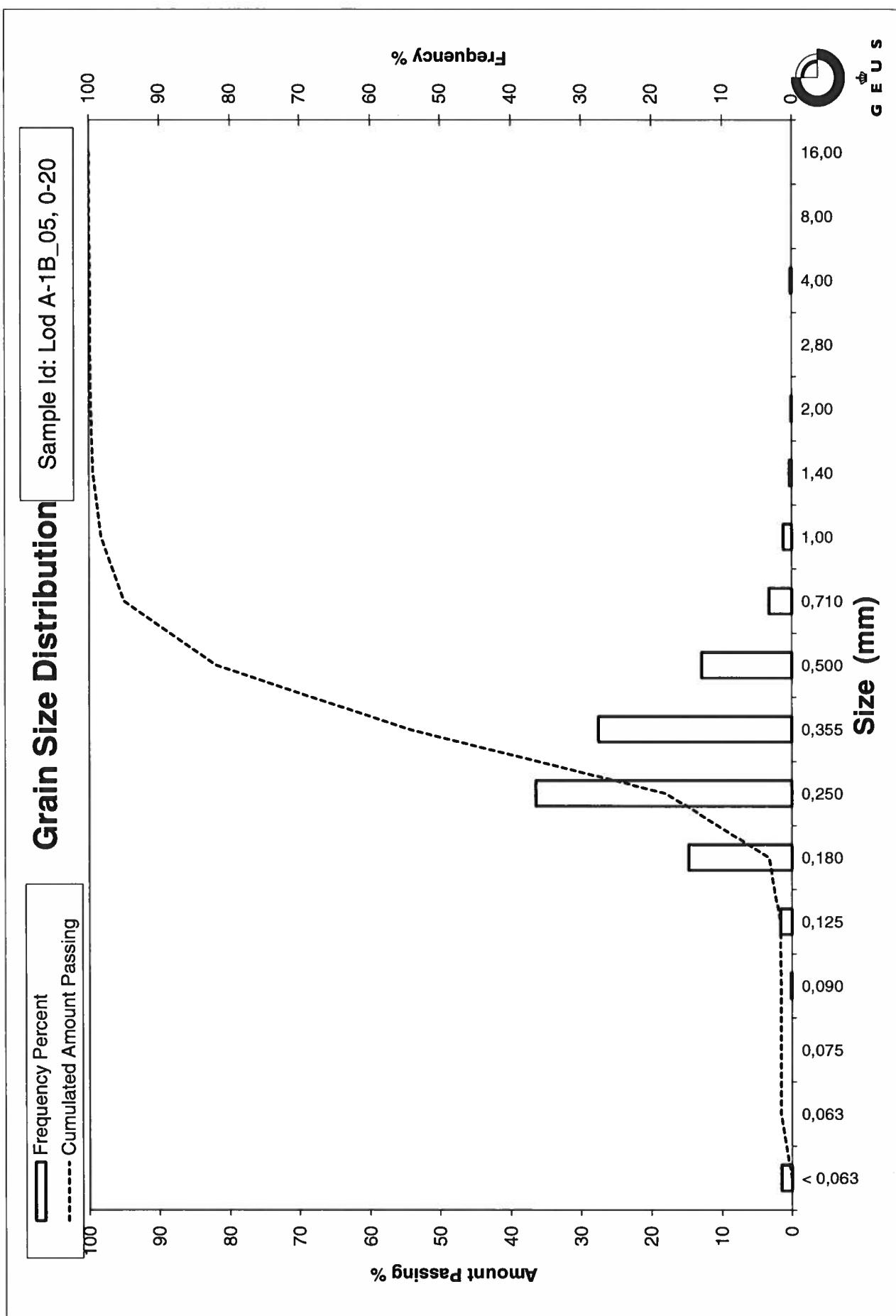
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($\phi 16\% + \phi 84\% - 2 * \phi 50\% / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\% / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_05, 100-120
Lab. Id: 200714
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 101,95 g

Size Fractions

Sieve Analysis

Gravel

Sand

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,15	0,15	99,85
2,80	-1,49	0,19	0,19	99,67
2,00	-1,00	0,07	0,07	99,60
1,40	-0,49	0,08	0,08	99,52
1,00	0,00	0,16	0,16	99,36
0,710	0,49	0,44	0,43	98,93
0,500	1,00	2,70	2,65	96,28
0,355	1,49	24,67	24,20	72,08
0,250	2,00	60,59	59,43	12,65
0,180	2,47	10,20	10,00	2,65
0,125	3,00	1,01	0,99	1,66
0,090	3,47	0,09	0,09	1,57
0,075	3,74	0,00	0,00	1,57
0,063	3,99	0,00	0,00	1,57
< 0,063	> 3,99	1,60	1,57	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,57
Sand, fine	(0,063 mm - 0,200 mm): 3,94
Sand, medium	(0,2 mm - 0,6 mm): 92,04
Sand, coarse	(0,6 mm - 2 mm): 2,05
Gravel	(> 2 mm): 0,40
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,49	1,02
16%	84%	0,43	1,23
25%	75%	0,37	1,42
40%	60%	0,33	1,58
Median 50%	50%	0,32	1,66
75%	25%	0,27	1,88
84%	16%	0,26	1,97
90%	10%	0,23	2,11
95%	5%	0,20	2,35

Moments Statistics

Mean	1,62
Sorting	0,38
Skewness	-0,07
Kurtosis	1,20
Uniformity Coefficient	1,44

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

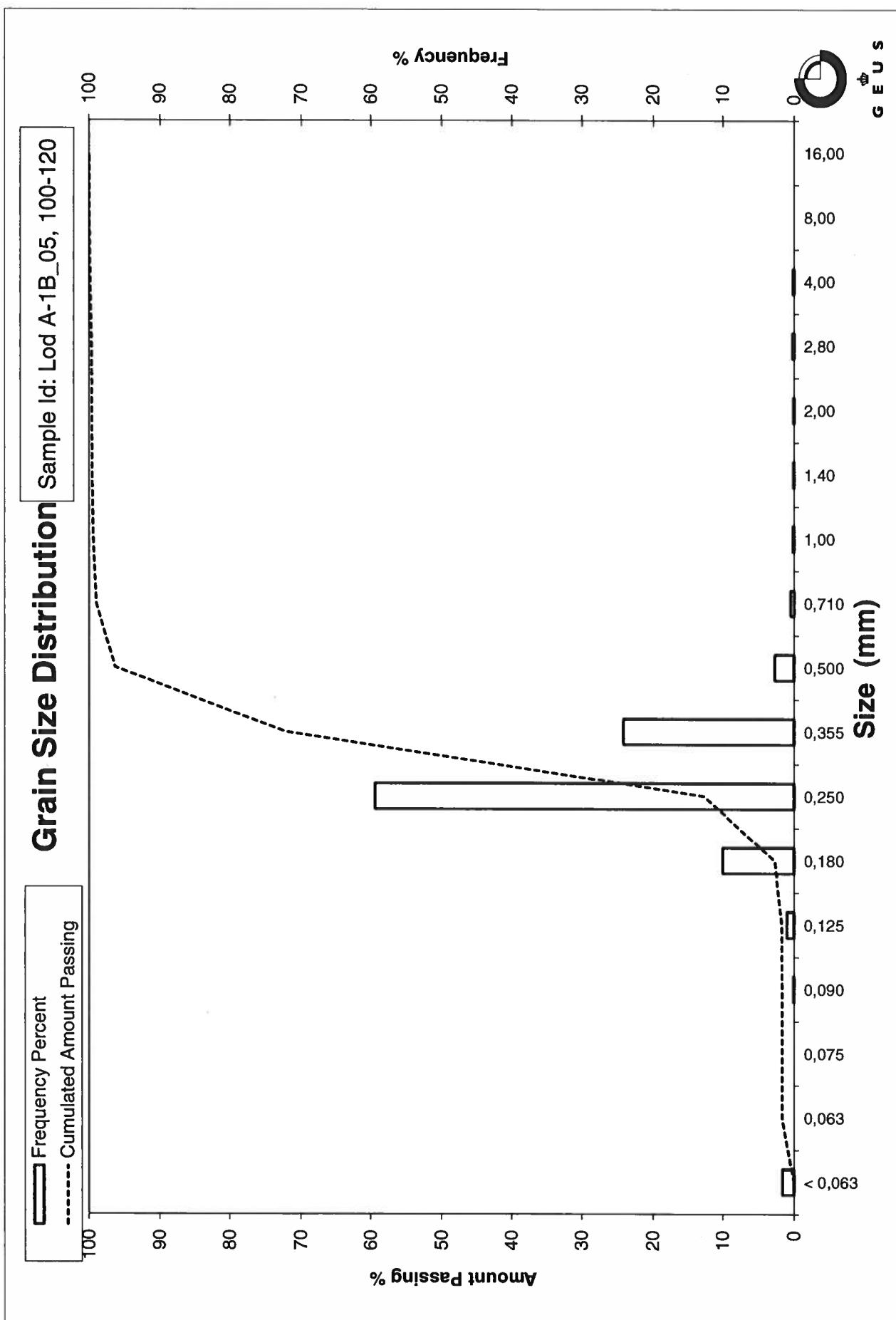
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_05, 200-220
Lab. Id: 200715
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 100,15 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,26	2,26	97,74
4,00	-2,00	0,00	0,00	97,74
2,80	-1,49	0,02	0,02	97,72
2,00	-1,00	0,03	0,03	97,69
1,40	-0,49	0,01	0,01	97,68
1,00	0,00	0,23	0,23	97,45
0,710	0,49	0,49	0,49	96,96
0,500	1,00	3,13	3,13	93,84
0,355	1,49	18,61	18,58	75,26
0,250	2,00	57,72	57,63	17,62
0,180	2,47	14,87	14,85	2,78
0,125	3,00	1,59	1,59	1,19
0,090	3,47	0,18	0,18	1,01
0,075	3,74	0,01	0,01	1,00
0,063	3,99	0,00	0,00	1,00
< 0,063	> 3,99	1,00	1,00	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,00
Sand, fine	(0,063 mm - 0,200 mm): 6,02
Sand, medium	(0,2 mm - 0,6 mm): 88,31
Sand, coarse	(0,6 mm - 2 mm): 2,37
Gravel	(> 2 mm): 2,31
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,58	0,79
16%	84%	0,42	1,24
25%	75%	0,35	1,50
40%	60%	0,33	1,61
Median 50%	50%	0,31	1,69
75%	25%	0,26	1,92
84%	16%	0,24	2,04
90%	10%	0,21	2,22
95%	5%	0,19	2,39

Moments Statistics

Mean	1,66
Sorting	0,44
Skewness	-0,13
Kurtosis	1,53
Uniformity Coefficient	1,53

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

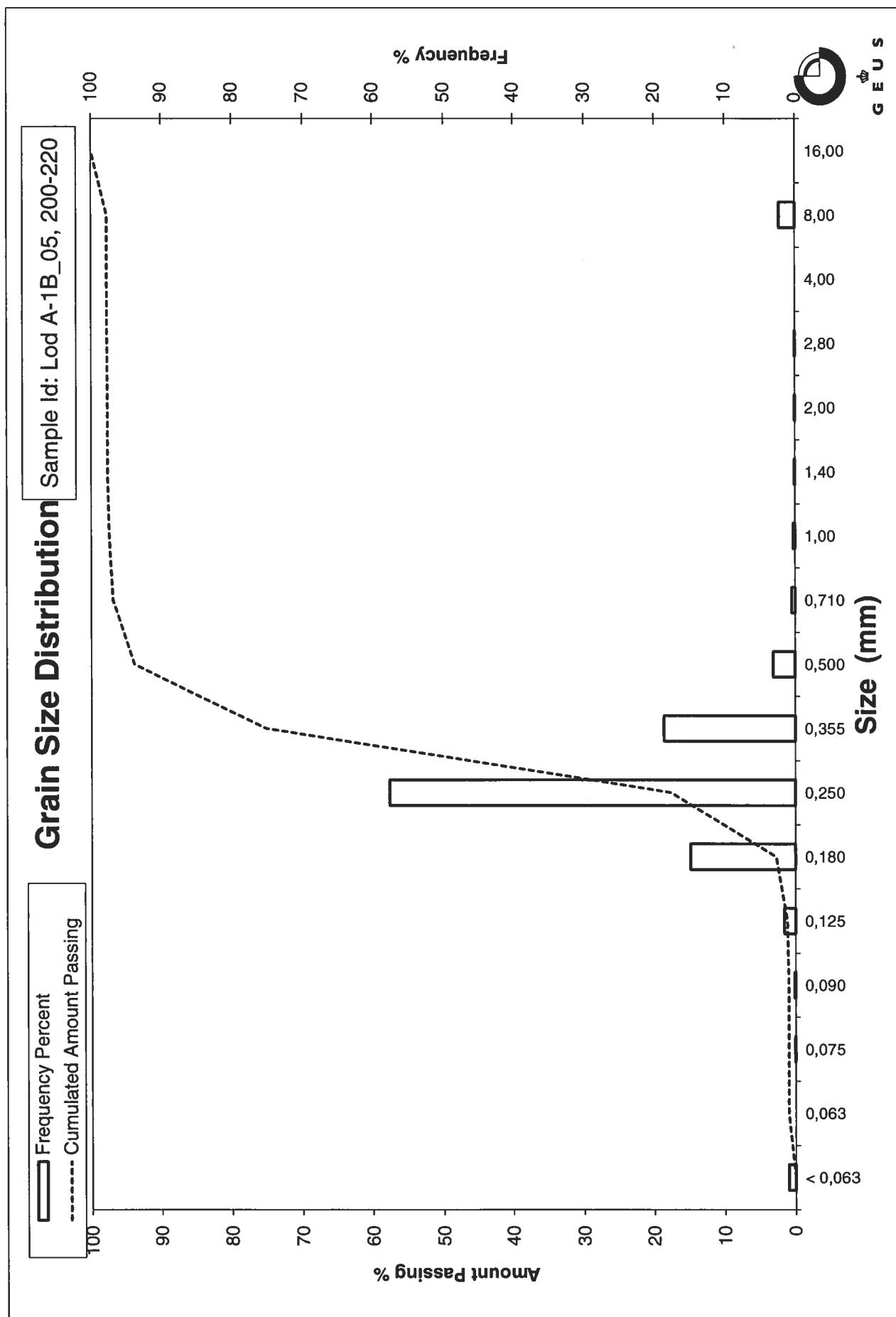
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient (d_{60} / d_{10}) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_05, 300-320
Lab. Id: 200716
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 100,93 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,00	0,00	100,00
0,710	0,49	0,14	0,14	99,86
0,500	1,00	2,20	2,18	97,68
0,355	1,49	15,79	15,64	82,04
0,250	2,00	63,77	63,18	18,85
0,180	2,47	16,45	16,30	2,56
0,125	3,00	1,67	1,65	0,90
0,090	3,47	0,18	0,18	0,72
0,075	3,74	0,01	0,01	0,71
0,063	3,99	0,00	0,00	0,71
< 0,063	> 3,99	0,72	0,71	0,00

Gravel

Sand

Sieve Analysis

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,71
Sand, fine	(0,063 mm - 0,200 mm):	6,50
Sand, medium	(0,2 mm - 0,6 mm):	91,51
Sand, coarse	(0,6 mm - 2 mm):	1,28
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,48	1,07
16%	84%	0,37	1,42
25%	75%	0,34	1,54
40%	60%	0,32	1,65
Median 50%	50%	0,30	1,73
75%	25%	0,26	1,94
84%	16%	0,24	2,07
90%	10%	0,21	2,24
95%	5%	0,19	2,39

Moments Statistics

Mean	1,74
Sorting	0,36
Skewness	0,03
Kurtosis	1,35
Uniformity Coefficient	1,50

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

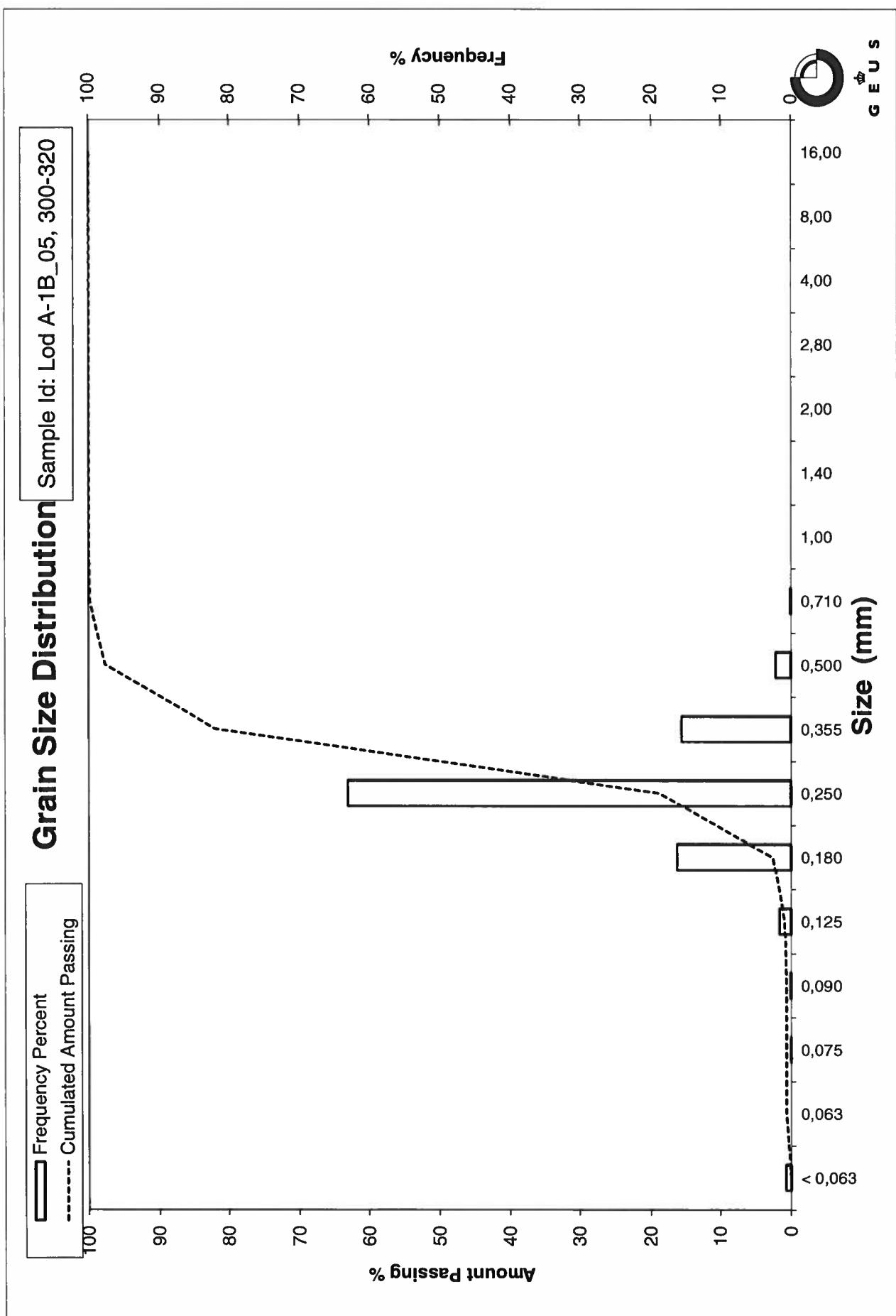
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2*\phi 50\%) / (2*(\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2*\phi 50\%) / (2*(\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_06, 0-20
Lab. Id: 200717
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 106,24 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	2,01	1,89	98,11
2,80	-1,49	0,94	0,88	97,22
2,00	-1,00	0,98	0,92	96,30
1,40	-0,49	0,88	0,83	95,47
1,00	0,00	1,47	1,38	94,09
0,710	0,49	3,23	3,04	91,05
0,500	1,00	12,88	12,12	78,93
0,355	1,49	32,24	30,35	48,58
0,250	2,00	33,47	31,50	17,07
0,180	2,47	9,53	8,97	8,10
0,125	3,00	4,72	4,44	3,66
0,090	3,47	1,07	1,01	2,65
0,075	3,74	0,18	0,17	2,48
0,063	3,99	0,22	0,21	2,28
< 0,063	> 3,99	2,42	2,28	0,00

Gravel

Sand

Sieve Analysis

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 2,28
Sand, fine	(0,063 mm - 0,200 mm): 8,39
Sand, medium	(0,2 mm - 0,6 mm): 74,03
Sand, coarse	(0,6 mm - 2 mm): 11,60
Gravel	(> 2 mm): 3,70
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,26	-0,34
16%	84%	0,59	0,77
25%	75%	0,48	1,06
40%	60%	0,41	1,29
Median 50%	50%	0,36	1,47
75%	25%	0,28	1,86
84%	16%	0,24	2,05
90%	10%	0,19	2,36
95%	5%	0,14	2,82

Moments Statistics

Mean	1,43
Sorting	0,80
Skewness	-0,12
Kurtosis	1,62
Uniformity Coefficient	2,10

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

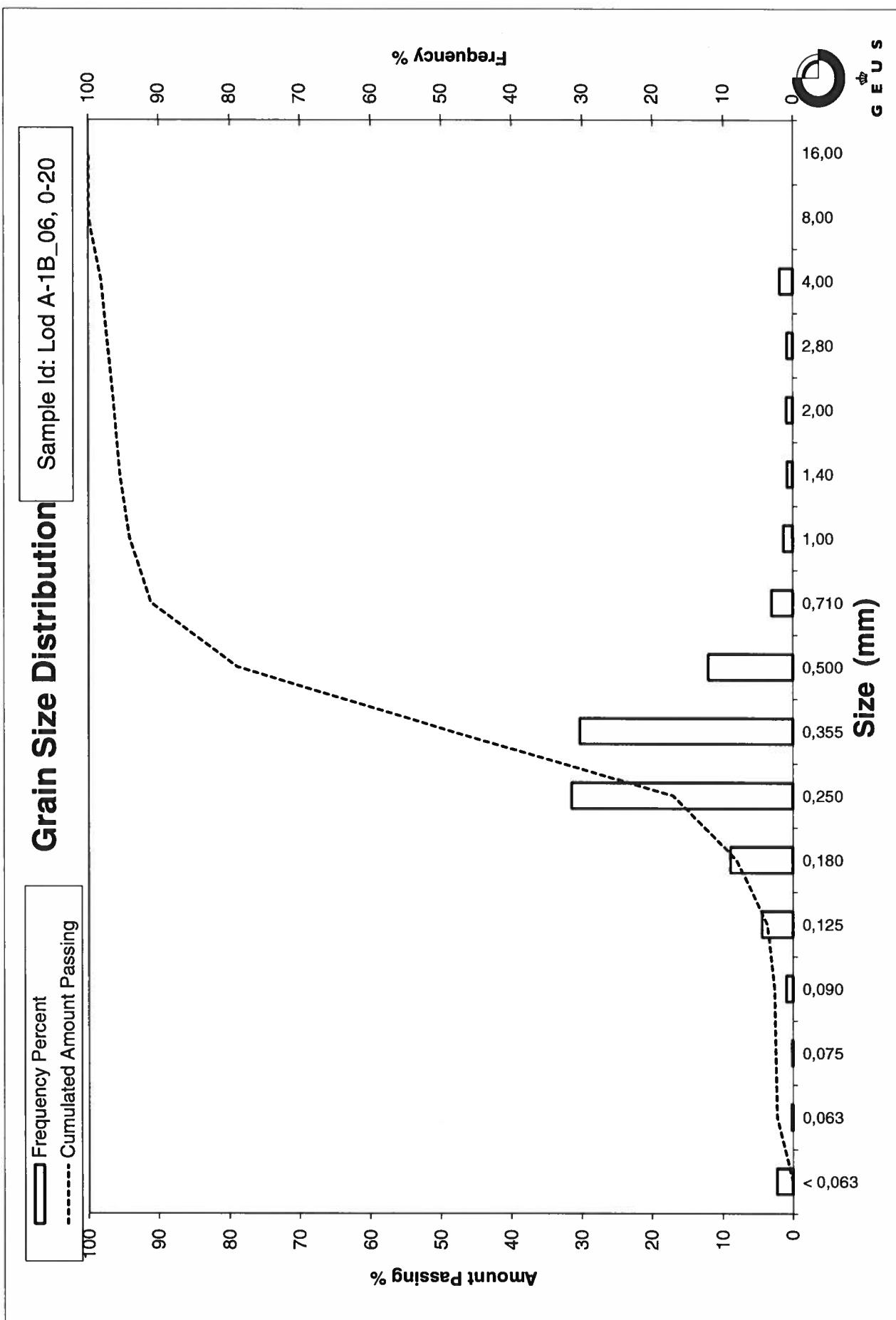
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_06, 100-120
Lab. Id: 200718
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 104,27 g

Size Fractions

Sieve Analysis	
Gravel	
Sand	

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,21	0,20	99,80
2,00	-1,00	0,26	0,25	99,55
1,40	-0,49	0,38	0,36	99,18
1,00	0,00	1,78	1,71	97,48
0,710	0,49	3,06	2,93	94,54
0,500	1,00	14,27	13,69	80,86
0,355	1,49	55,55	53,28	27,58
0,250	2,00	20,07	19,25	8,33
0,180	2,47	2,00	1,92	6,42
0,125	3,00	0,88	0,84	5,57
0,090	3,47	0,36	0,35	5,23
0,075	3,74	0,08	0,08	5,15
0,063	3,99	0,05	0,05	5,10
< 0,063	> 3,99	5,32	5,10	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 5,10
Sand, fine	(0,063 mm - 0,200 mm): 1,86
Sand, medium	(0,2 mm - 0,6 mm): 80,41
Sand, coarse	(0,6 mm - 2 mm): 12,17
Gravel	(> 2 mm): 0,45
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,76	0,41
16%	84%	0,55	0,87
25%	75%	0,48	1,05
40%	60%	0,44	1,17
Median 50%	50%	0,42	1,27
75%	25%	0,34	1,55
84%	16%	0,29	1,78
90%	10%	0,26	1,95
95%	5%	-----	-----

Moments Statistics

Mean	1,30
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	1,71

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

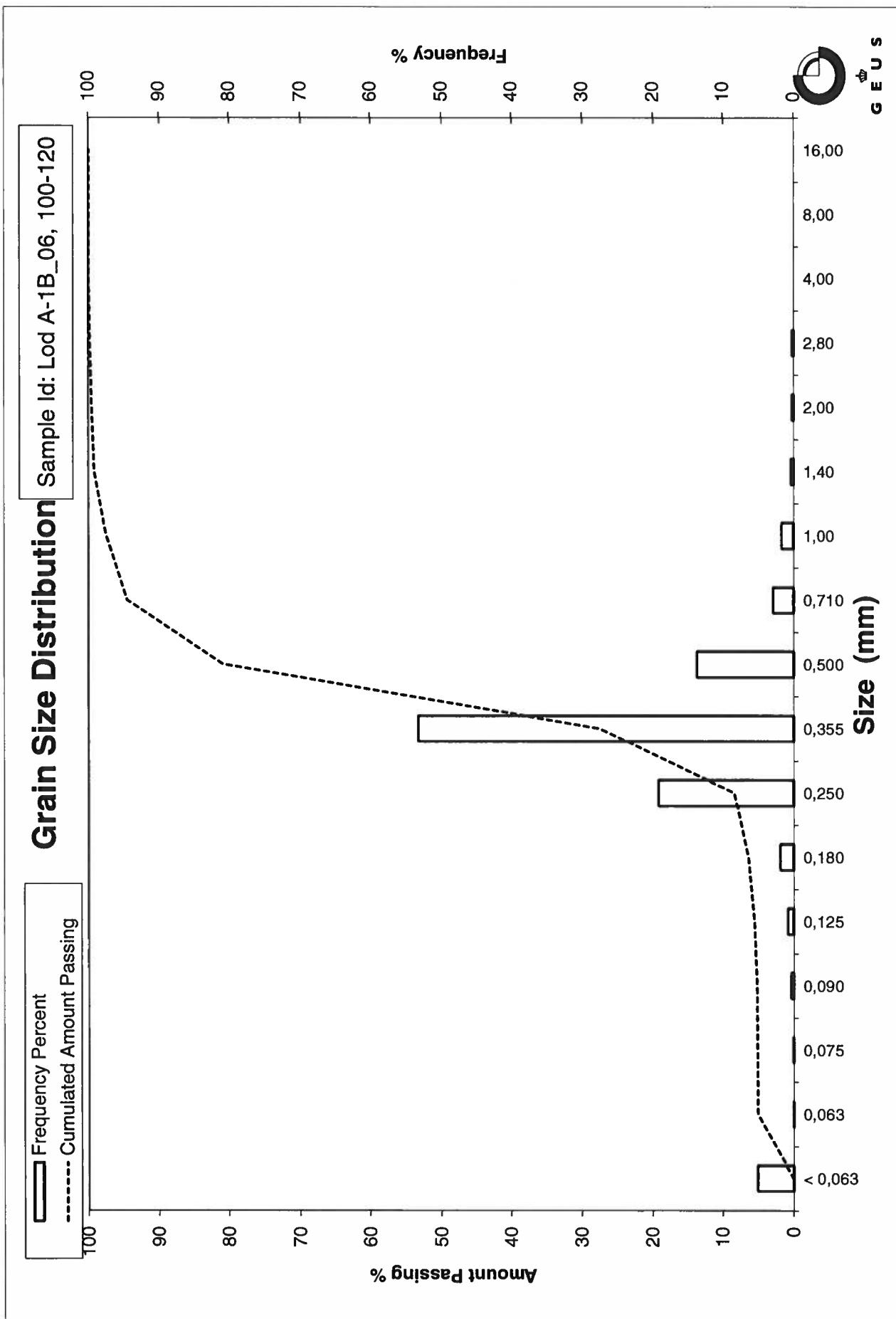
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_06, 190-210
Lab. Id: 200719
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 102,46 g

Size Fractions

		Gravel		Sand	
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Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,81	1,77	98,23
4,00	-2,00	0,00	0,00	98,23
2,80	-1,49	0,00	0,00	98,23
2,00	-1,00	0,01	0,01	98,22
1,40	-0,49	0,11	0,11	98,12
1,00	0,00	0,20	0,20	97,92
0,710	0,49	0,59	0,58	97,35
0,500	1,00	4,89	4,77	92,57
0,355	1,49	32,48	31,70	60,87
0,250	2,00	40,79	39,81	21,06
0,180	2,47	12,25	11,96	9,11
0,125	3,00	5,99	5,85	3,26
0,090	3,47	1,26	1,23	2,03
0,075	3,74	0,19	0,19	1,84
0,063	3,99	0,13	0,13	1,72
< 0,063	> 3,99	1,76	1,72	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,72
Sand, fine	(0,063 mm - 0,200 mm): 10,80
Sand, medium	(0,2 mm - 0,6 mm): 82,32
Sand, coarse	(0,6 mm - 2 mm): 3,38
Gravel	(> 2 mm): 1,78
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,61	0,72
16%	84%	0,46	1,12
25%	75%	0,42	1,25
40%	60%	0,35	1,50
Median 50%	50%	0,33	1,62
75%	25%	0,26	1,94
84%	16%	0,22	2,18
90%	10%	0,19	2,43
95%	5%	0,14	2,82

Moments Statistics

Mean	1,64
Sorting	0,58
Skewness	0,11
Kurtosis	1,25
Uniformity Coefficient	1,90

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

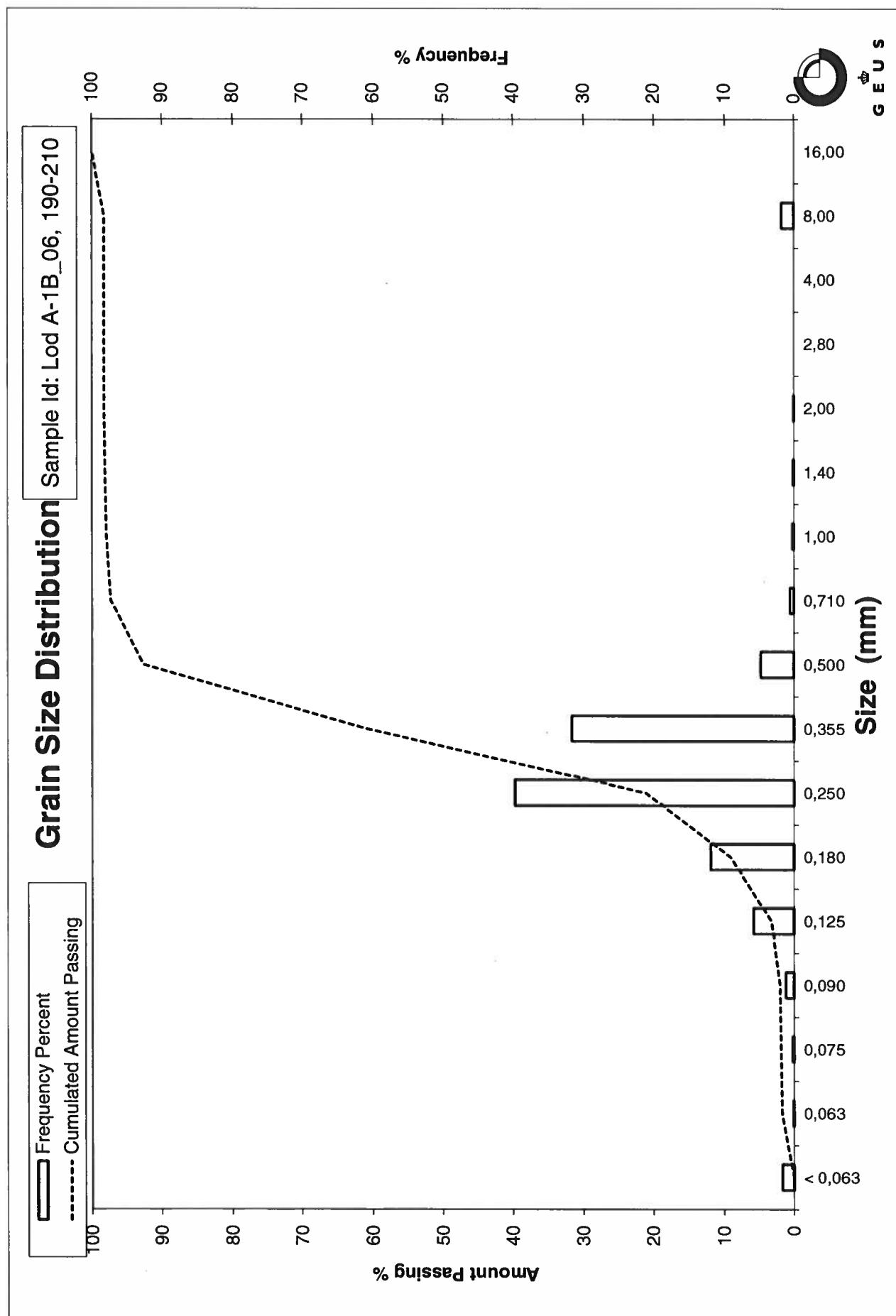
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_07, 12-29
Lab. Id: 200720
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 105,88 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,42	1,34	98,66
4,00	-2,00	0,80	0,76	97,90
2,80	-1,49	0,89	0,84	97,06
2,00	-1,00	1,30	1,23	95,83
1,40	-0,49	1,01	0,95	94,88
1,00	0,00	2,45	2,31	92,57
0,710	0,49	3,88	3,66	88,90
0,500	1,00	12,85	12,14	76,77
0,355	1,49	33,07	31,23	45,53
0,250	2,00	29,95	28,29	17,25
0,180	2,47	9,16	8,65	8,59
0,125	3,00	2,42	2,29	6,31
0,090	3,47	2,12	2,00	4,31
0,075	3,74	0,93	0,88	3,43
0,063	3,99	0,69	0,65	2,78
< 0,063	> 3,99	2,94	2,78	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 2,78
Sand, fine	(0,063 mm - 0,200 mm): 8,29
Sand, medium	(0,2 mm - 0,6 mm): 71,48
Sand, coarse	(0,6 mm - 2 mm): 13,29
Gravel	(> 2 mm): 4,17
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,47	-0,56
16%	84%	0,63	0,68
25%	75%	0,49	1,02
40%	60%	0,42	1,24
Median 50%	50%	0,38	1,41
75%	25%	0,28	1,84
84%	16%	0,24	2,06
90%	10%	0,19	2,39
95%	5%	0,10	3,29

Moments Statistics

Mean	1,38
Sorting	0,93
Skewness	-0,04
Kurtosis	1,93
Uniformity Coefficient	2,21

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

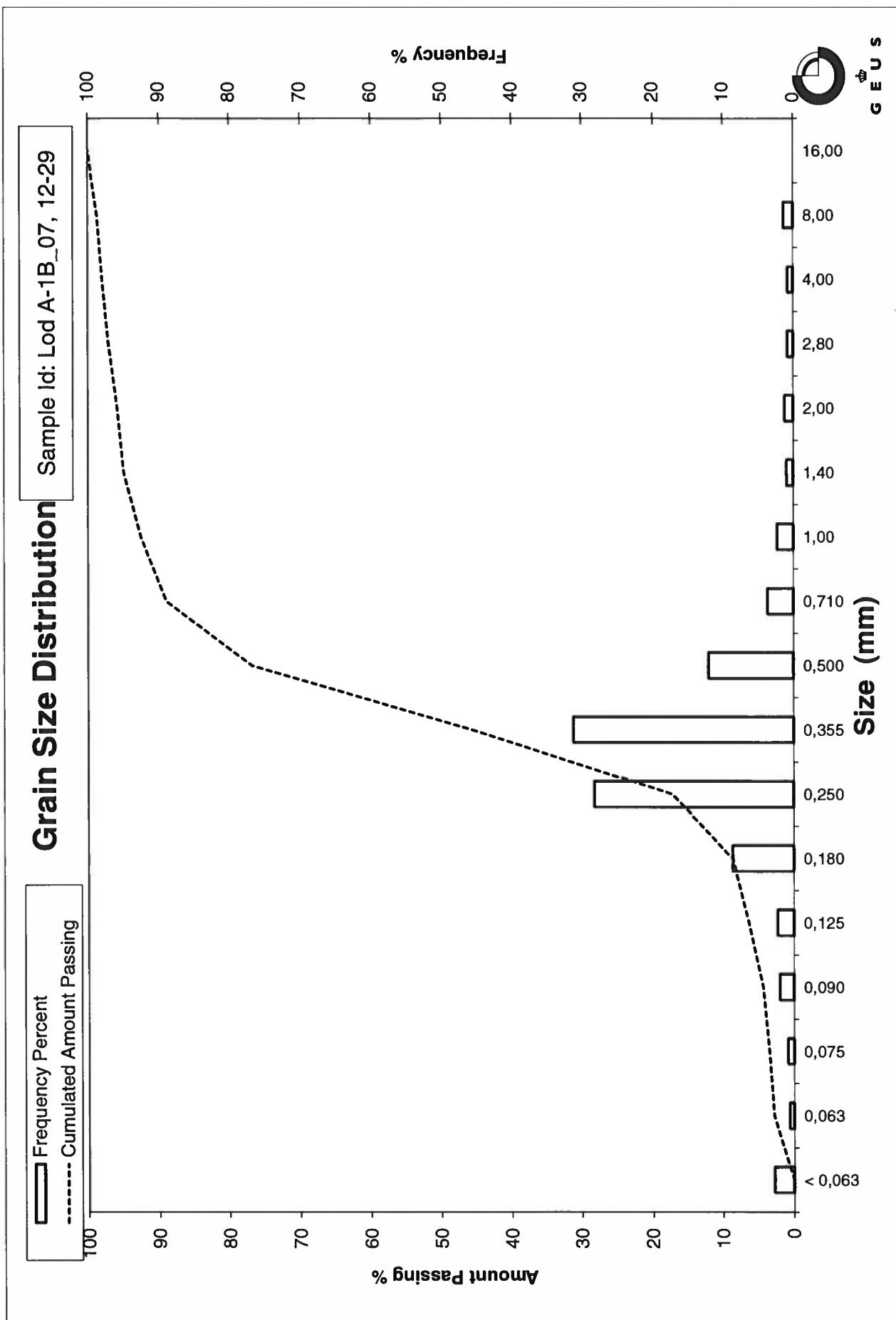
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_07, 100-120
Lab. Id: 200721
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 89,64 g

Size Fractions

Sieve Analysis	
	Gravel
	Sand

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,00	0,00	100,00
0,710	0,49	0,00	0,00	100,00
0,500	1,00	0,03	0,03	99,97
0,355	1,49	0,41	0,46	99,51
0,250	2,00	0,27	0,30	99,21
0,180	2,47	0,14	0,16	99,05
0,125	3,00	3,87	4,32	94,73
0,090	3,47	36,85	41,11	53,63
0,075	3,74	11,97	13,35	40,27
0,063	3,99	14,88	16,60	23,67
< 0,063	> 3,99	21,22	23,67	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 23,67
Sand, fine	(0,063 mm - 0,200 mm): 75,42
Sand, medium	(0,2 mm - 0,6 mm): 0,89
Sand, coarse	(0,6 mm - 2 mm): 0,02
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,13	2,96
16%	84%	0,12	3,11
25%	75%	0,11	3,21
40%	60%	0,10	3,39
Median 50%	50%	0,09	3,54
75%	25%	0,06	3,97
84%	16%	-----	-----
90%	10%	-----	-----
95%	5%	-----	-----

Moments Statistics

Mean	3,33
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	-----

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

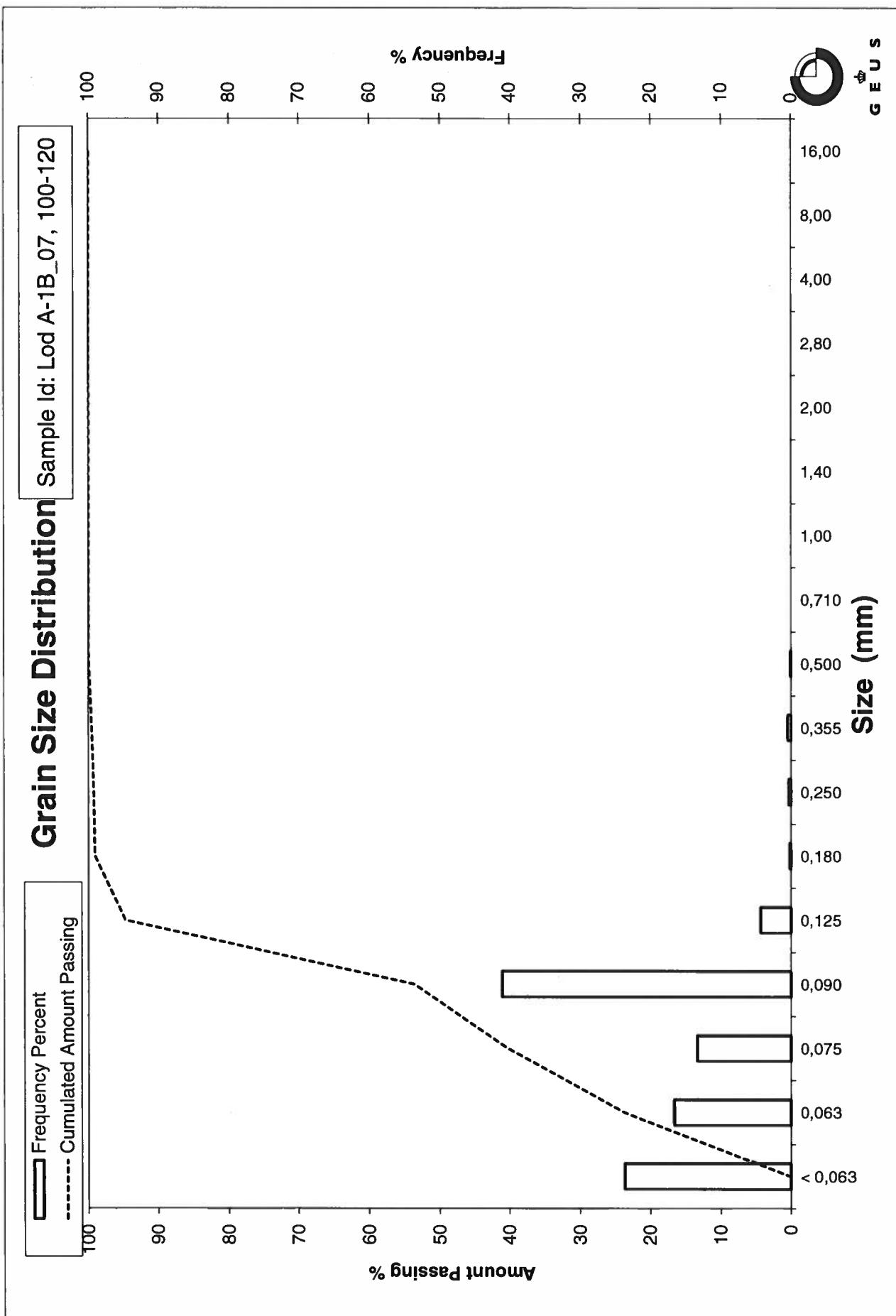
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_07, 200-220
Lab. Id: 200722
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 99,4 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,86	0,87	99,13
4,00	-2,00	0,00	0,00	99,13
2,80	-1,49	0,10	0,10	99,03
2,00	-1,00	0,08	0,08	98,95
1,40	-0,49	0,10	0,10	98,85
1,00	0,00	0,27	0,27	98,58
0,710	0,49	0,71	0,71	97,87
0,500	1,00	3,90	3,92	93,94
0,355	1,49	28,33	28,50	65,44
0,250	2,00	48,10	48,39	17,05
0,180	2,47	11,31	11,38	5,67
0,125	3,00	2,51	2,53	3,15
0,090	3,47	0,75	0,75	2,39
0,075	3,74	0,30	0,30	2,09
0,063	3,99	0,19	0,19	1,90
< 0,063	> 3,99	1,89	1,90	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,90
Sand, fine	(0,063 mm - 0,200 mm): 7,02
Sand, medium	(0,2 mm - 0,6 mm): 86,89
Sand, coarse	(0,6 mm - 2 mm): 3,14
Gravel	(> 2 mm): 1,05
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,56	0,85
16%	84%	0,45	1,15
25%	75%	0,40	1,31
40%	60%	0,34	1,54
Median 50%	50%	0,32	1,64
75%	25%	0,27	1,90
84%	16%	0,24	2,04
90%	10%	0,21	2,27
95%	5%	0,17	2,60

Moments Statistics

Mean	1,61
Sorting	0,49
Skewness	0,00
Kurtosis	1,21
Uniformity Coefficient	1,66

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

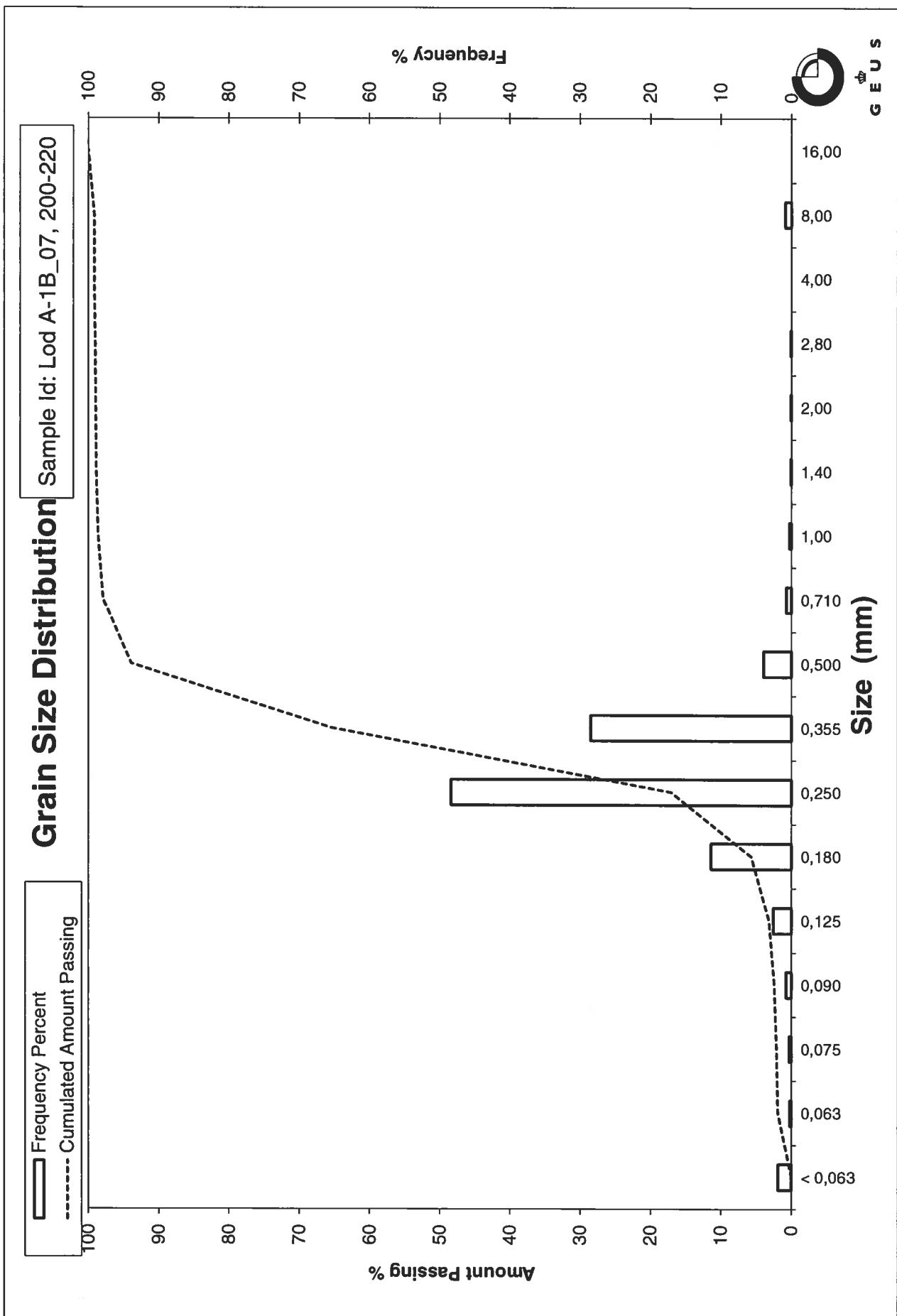
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_07, 300-320
Lab. Id: 200723
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 100,91 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,00	0,00	100,00
0,710	0,49	0,14	0,14	99,86
0,500	1,00	3,09	3,06	96,80
0,355	1,49	46,40	45,98	50,82
0,250	2,00	41,32	40,95	9,87
0,180	2,47	5,69	5,64	4,23
0,125	3,00	2,25	2,23	2,00
0,090	3,47	0,52	0,52	1,49
0,075	3,74	0,12	0,12	1,37
0,063	3,99	0,07	0,07	1,30
< 0,063	> 3,99	1,31	1,30	0,00

Gravel

Sand

Sieve Analysis

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,30
Sand, fine	(0,063 mm - 0,200 mm): 4,54
Sand, medium	(0,2 mm - 0,6 mm): 92,41
Sand, coarse	(0,6 mm - 2 mm): 1,74
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,49	1,02
16%	84%	0,46	1,12
25%	75%	0,43	1,21
40%	60%	0,38	1,38
Median 50%	50%	0,35	1,50
75%	25%	0,29	1,79
84%	16%	0,27	1,91
90%	10%	0,25	2,00
95%	5%	0,19	2,40

Moments Statistics

Mean	1,51
Sorting	0,41
Skewness	0,17
Kurtosis	0,98
Uniformity Coefficient	1,53

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

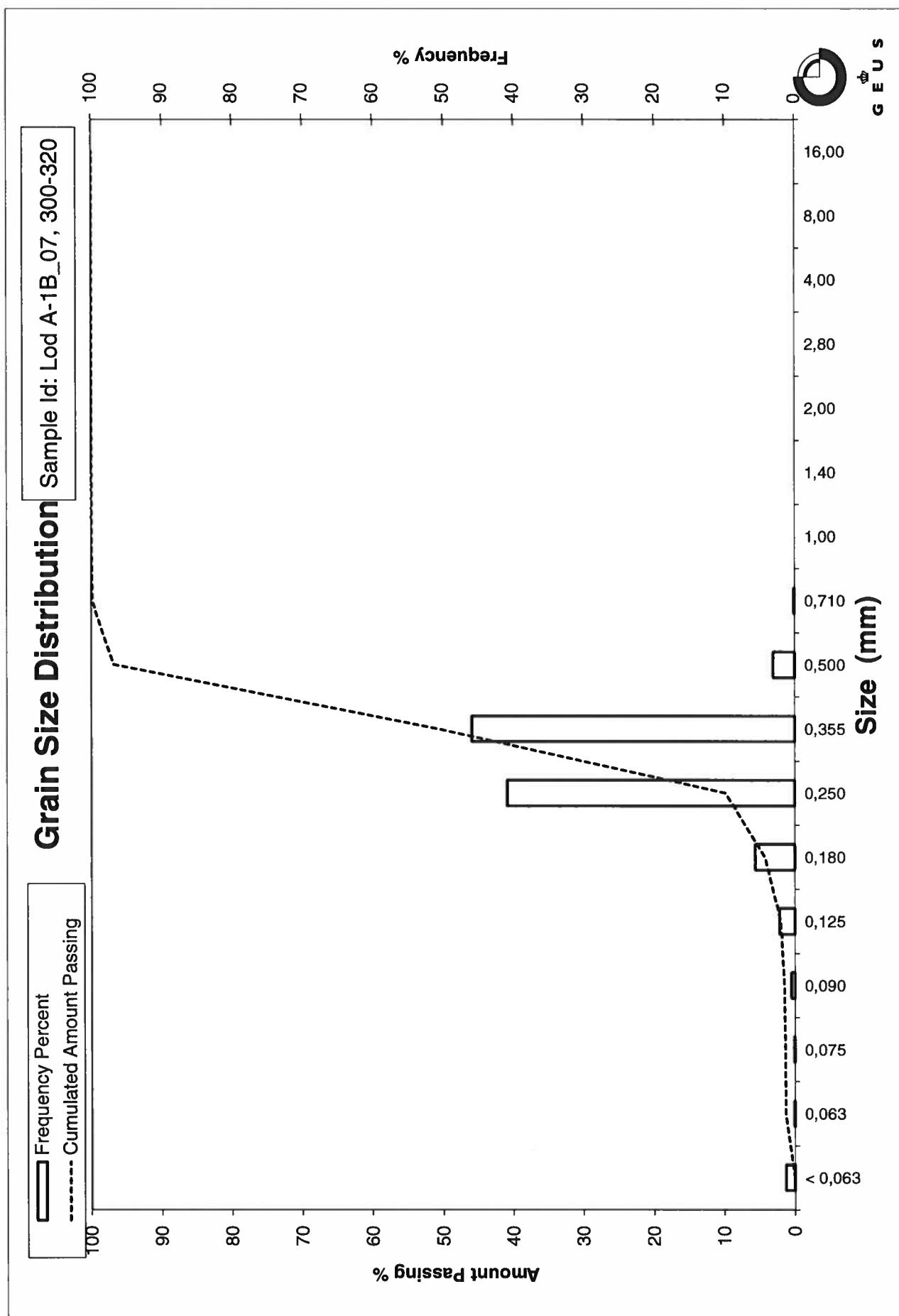
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_07, 400-420
Lab. Id: 200724
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 105,3 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,11	1,05	98,95
4,00	-2,00	0,90	0,85	98,09
2,80	-1,49	0,31	0,29	97,80
2,00	-1,00	0,49	0,47	97,33
1,40	-0,49	0,53	0,50	96,83
1,00	0,00	1,99	1,89	94,94
0,710	0,49	6,44	6,12	88,82
0,500	1,00	25,50	24,22	64,61
0,355	1,49	35,58	33,79	30,82
0,250	2,00	21,32	20,25	10,57
0,180	2,47	7,13	6,77	3,80
0,125	3,00	1,68	1,60	2,20
0,090	3,47	0,40	0,38	1,82
0,075	3,74	0,12	0,11	1,71
0,063	3,99	0,08	0,08	1,63
< 0,063	> 3,99	1,72	1,63	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,63
Sand, fine	(0,063 mm - 0,200 mm):	4,10
Sand, medium	(0,2 mm - 0,6 mm):	70,40
Sand, coarse	(0,6 mm - 2 mm):	21,19
Gravel	(> 2 mm):	2,67
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,01	-0,02
16%	84%	0,67	0,58
25%	75%	0,59	0,76
40%	60%	0,48	1,06
Median 50%	50%	0,44	1,19
75%	25%	0,32	1,62
84%	16%	0,28	1,85
90%	10%	0,24	2,03
95%	5%	0,19	2,38

Moments Statistics

Mean	1,21
Sorting	0,68
Skewness	0,01
Kurtosis	1,14
Uniformity Coefficient	1,97

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

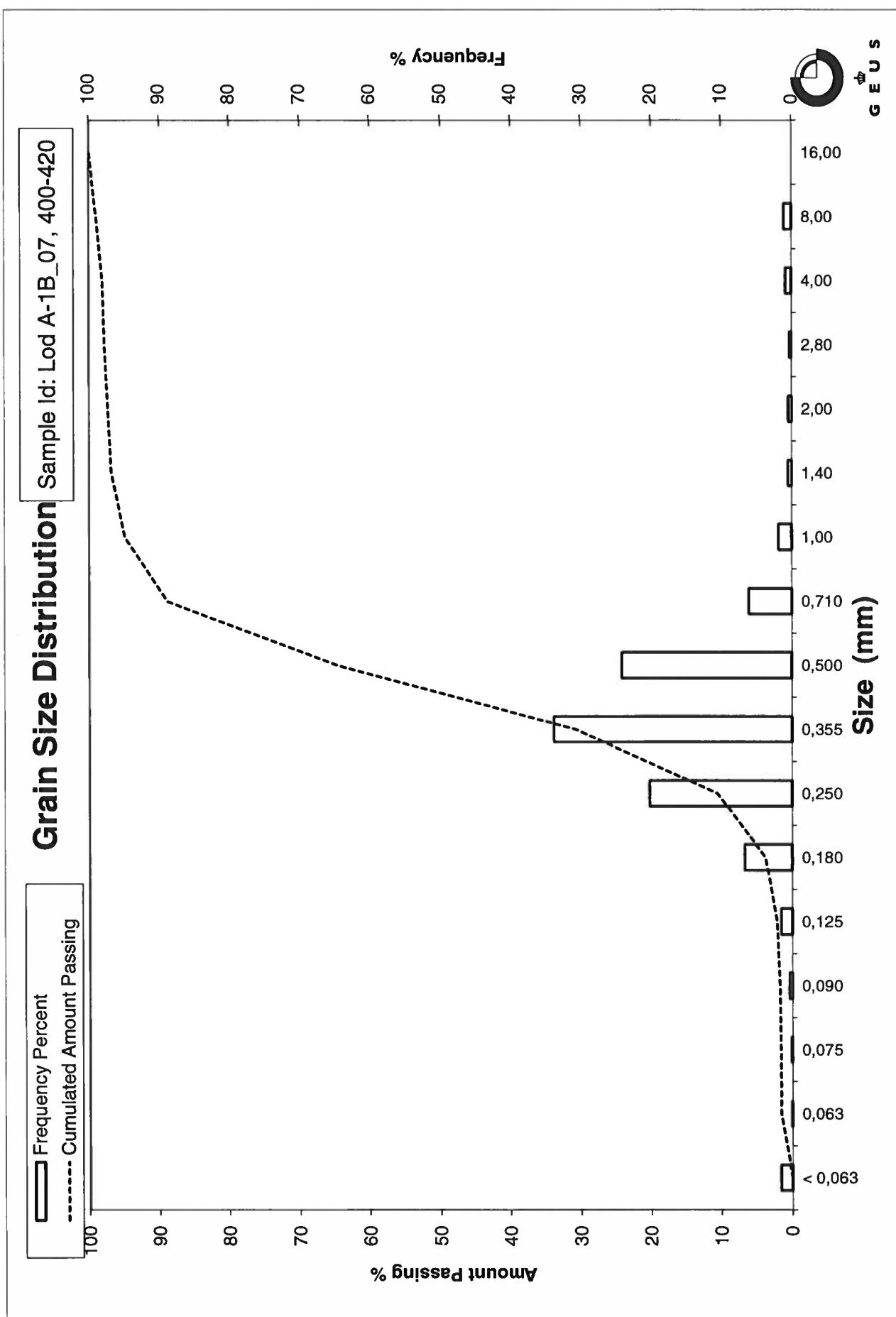
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($\phi 16\% + \phi 84\% - 2 * \phi 50\% / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\% / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_08, 0-17
Lab. Id: 200725
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 100,29 g

Size Fractions

Sieve Analysis

Gravel

Sand

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,43	0,43	99,57
2,00	-1,00	0,28	0,28	99,29
1,40	-0,49	0,31	0,31	98,98
1,00	0,00	0,48	0,48	98,50
0,710	0,49	1,01	1,01	97,50
0,500	1,00	6,81	6,79	90,71
0,355	1,49	24,70	24,63	66,08
0,250	2,00	43,10	42,98	23,10
0,180	2,47	18,70	18,65	4,46
0,125	3,00	2,88	2,87	1,59
0,090	3,47	0,41	0,41	1,18
0,075	3,74	0,06	0,06	1,12
0,063	3,99	0,02	0,02	1,10
< 0,063	> 3,99	1,10	1,10	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,10
Sand, fine	(0,063 mm - 0,200 mm): 8,69
Sand, medium	(0,2 mm - 0,6 mm): 84,16
Sand, coarse	(0,6 mm - 2 mm): 5,35
Gravel	(> 2 mm): 0,71
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,63	0,66
16%	84%	0,46	1,12
25%	75%	0,41	1,30
40%	60%	0,34	1,56
Median 50%	50%	0,32	1,66
75%	25%	0,25	1,97
84%	16%	0,22	2,16
90%	10%	0,20	2,32
95%	5%	0,18	2,46

Moments Statistics

Mean	1,65
Sorting	0,53
Skewness	-0,08
Kurtosis	1,09
Uniformity Coefficient	1,69

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

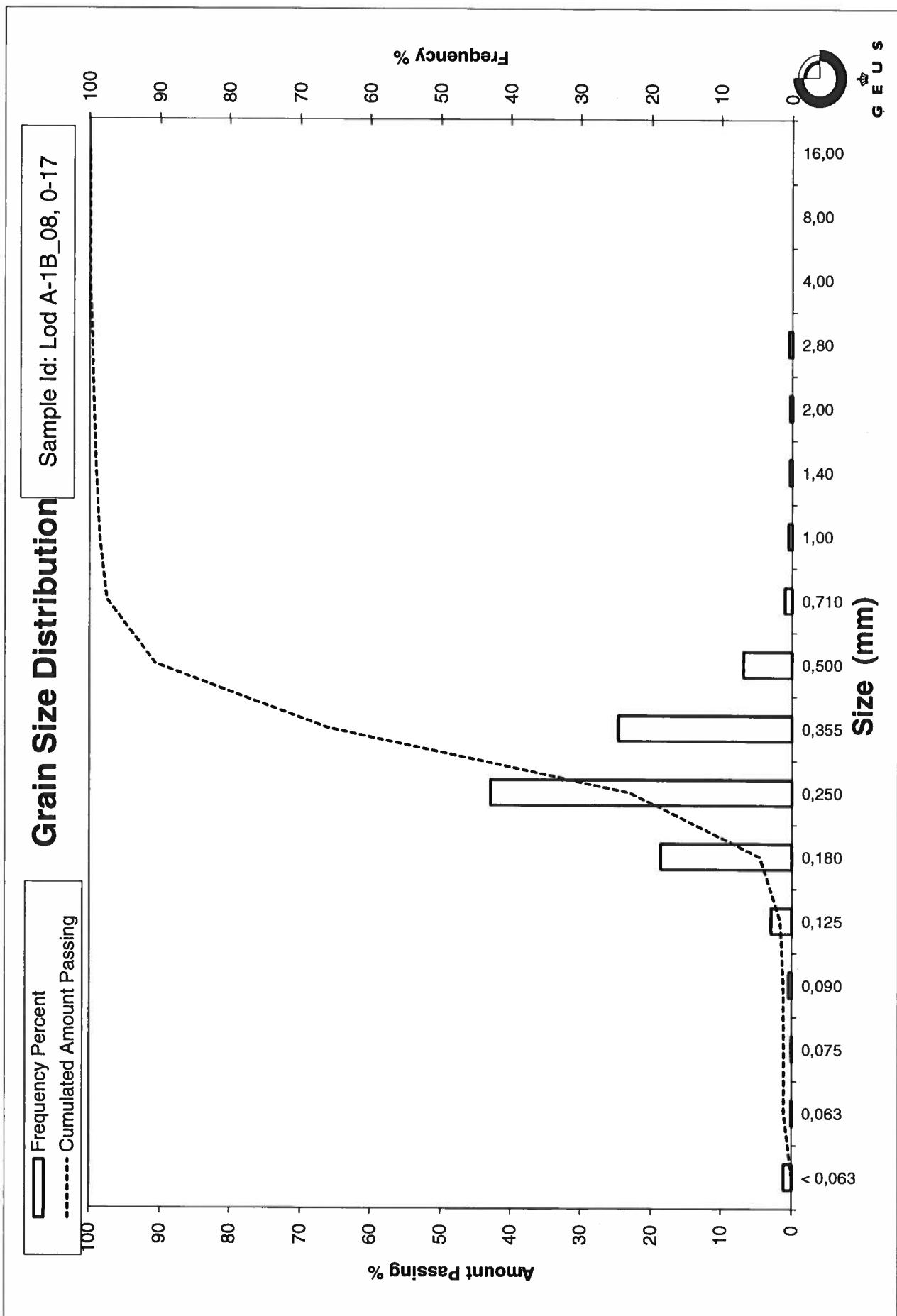
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_08, 90-110
Lab. Id: 200726
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 93,23 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,02	1,09	98,91
4,00	-2,00	0,00	0,00	98,91
2,80	-1,49	0,10	0,11	98,80
2,00	-1,00	0,06	0,06	98,73
1,40	-0,49	0,03	0,03	98,70
1,00	0,00	0,18	0,19	98,51
0,710	0,49	0,60	0,64	97,87
0,500	1,00	5,64	6,05	91,82
0,355	1,49	16,32	17,51	74,31
0,250	2,00	21,49	23,05	51,26
0,180	2,47	16,90	18,13	33,13
0,125	3,00	14,67	15,74	17,40
0,090	3,47	8,56	9,18	8,22
0,075	3,74	2,40	2,57	5,64
0,063	3,99	1,58	1,69	3,95
< 0,063	> 3,99	3,68	3,95	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 3,95
Sand, fine	(0,063 mm - 0,200 mm): 34,37
Sand, medium	(0,2 mm - 0,6 mm): 56,38
Sand, coarse	(0,6 mm - 2 mm): 4,04
Gravel	(> 2 mm): 1,27
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,61	0,71
16%	84%	0,44	1,20
25%	75%	0,36	1,47
40%	60%	0,29	1,79
Median 50%	50%	0,25	2,03
75%	25%	0,15	2,72
84%	16%	0,12	3,06
90%	10%	0,10	3,37
95%	5%	0,07	3,83

Moments Statistics

Mean	2,10
Sorting	0,94
Skewness	0,13
Kurtosis	1,02
Uniformity Coefficient	2,99

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

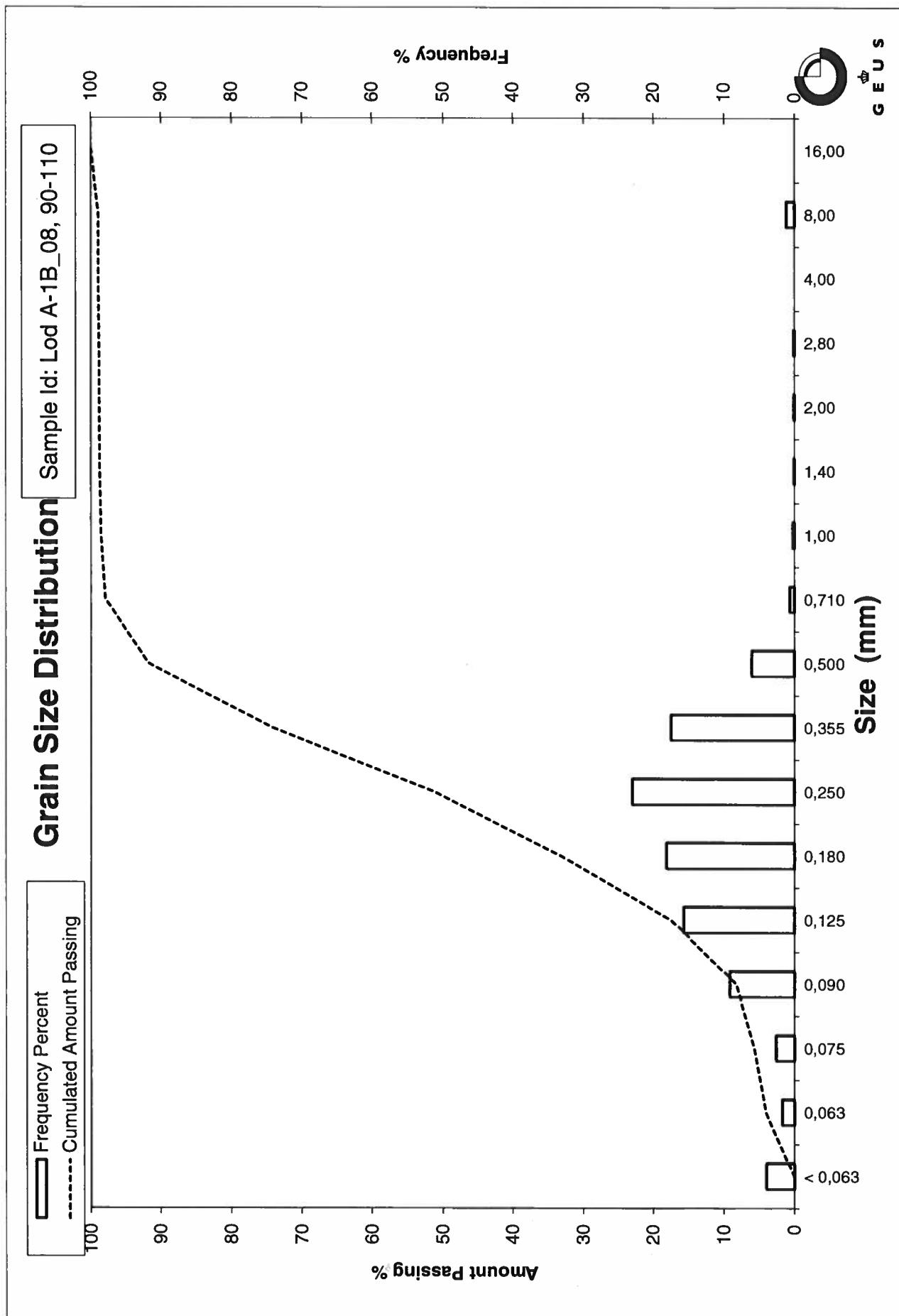
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_09, 0-20
Lab. Id: 200727
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 109,27 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,03	1,86	98,14
4,00	-2,00	2,18	2,00	96,15
2,80	-1,49	3,79	3,47	92,68
2,00	-1,00	5,13	4,69	87,98
1,40	-0,49	6,44	5,89	82,09
1,00	0,00	7,58	6,94	75,15
0,710	0,49	8,15	7,46	67,69
0,500	1,00	18,02	16,49	51,20
0,355	1,49	26,02	23,81	27,39
0,250	2,00	21,06	19,27	8,12
0,180	2,47	5,95	5,45	2,67
0,125	3,00	1,36	1,24	1,43
0,090	3,47	0,28	0,26	1,17
0,075	3,74	0,04	0,04	1,13
0,063	3,99	0,01	0,01	1,13
< 0,063	> 3,99	1,23	1,13	0,00

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,13
Sand, fine	(0,063 mm - 0,200 mm): 3,10
Sand, medium	(0,2 mm - 0,6 mm): 54,83
Sand, coarse	(0,6 mm - 2 mm): 28,93
Gravel	(> 2 mm): 12,02
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	3,60	-1,85
16%	84%	1,59	-0,67
25%	75%	0,99	0,01
40%	60%	0,61	0,71
Median 50%	50%	0,49	1,02
75%	25%	0,34	1,55
84%	16%	0,29	1,77
90%	10%	0,26	1,94
95%	5%	0,21	2,25

Moments Statistics

Mean	0,71
Sorting	1,23
Skewness	-0,39
Kurtosis	1,09
Uniformity Coefficient	2,35

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

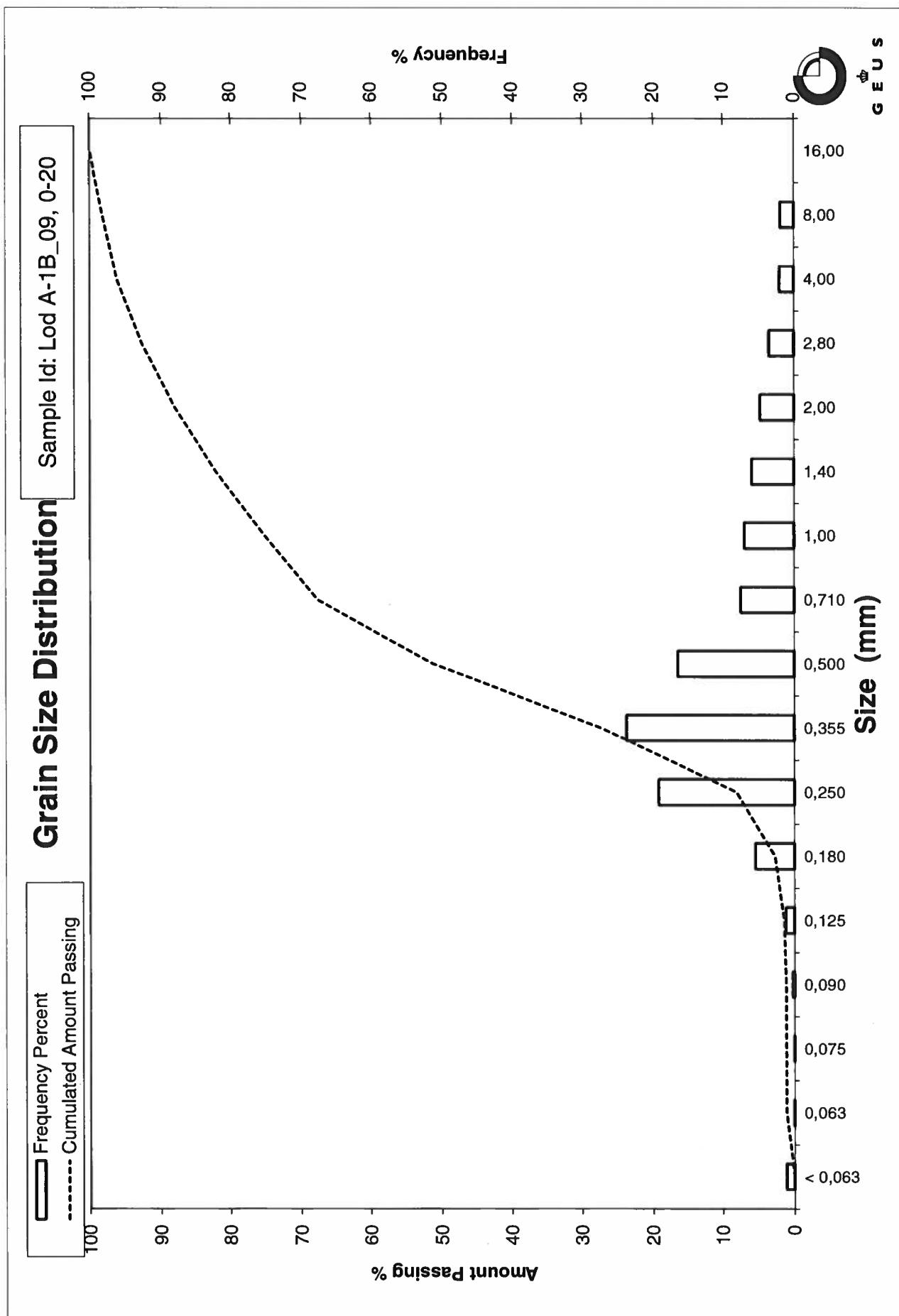
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_09, 70-90
Lab. Id: 200728
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 95,22 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,00	0,00	100,00
0,710	0,49	0,00	0,00	100,00
0,500	1,00	0,29	0,30	99,70
0,355	1,49	9,18	9,64	90,05
0,250	2,00	52,81	55,46	34,59
0,180	2,47	16,53	17,36	17,23
0,125	3,00	10,74	11,28	5,95
0,090	3,47	2,97	3,12	2,84
0,075	3,74	0,46	0,48	2,35
0,063	3,99	0,26	0,27	2,08
< 0,063	> 3,99	1,98	2,08	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 2,08
Sand, fine	(0,063 mm - 0,200 mm): 20,11
Sand, medium	(0,2 mm - 0,6 mm): 77,65
Sand, coarse	(0,6 mm - 2 mm): 0,16
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,43	1,22
16%	84%	0,34	1,54
25%	75%	0,33	1,61
40%	60%	0,30	1,75
Median 50%	50%	0,28	1,84
75%	25%	0,21	2,24
84%	16%	0,17	2,52
90%	10%	0,14	2,79
95%	5%	0,11	3,13

Moments Statistics

Mean	1,97
Sorting	0,53
Skewness	0,37
Kurtosis	1,25
Uniformity Coefficient	2,06

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

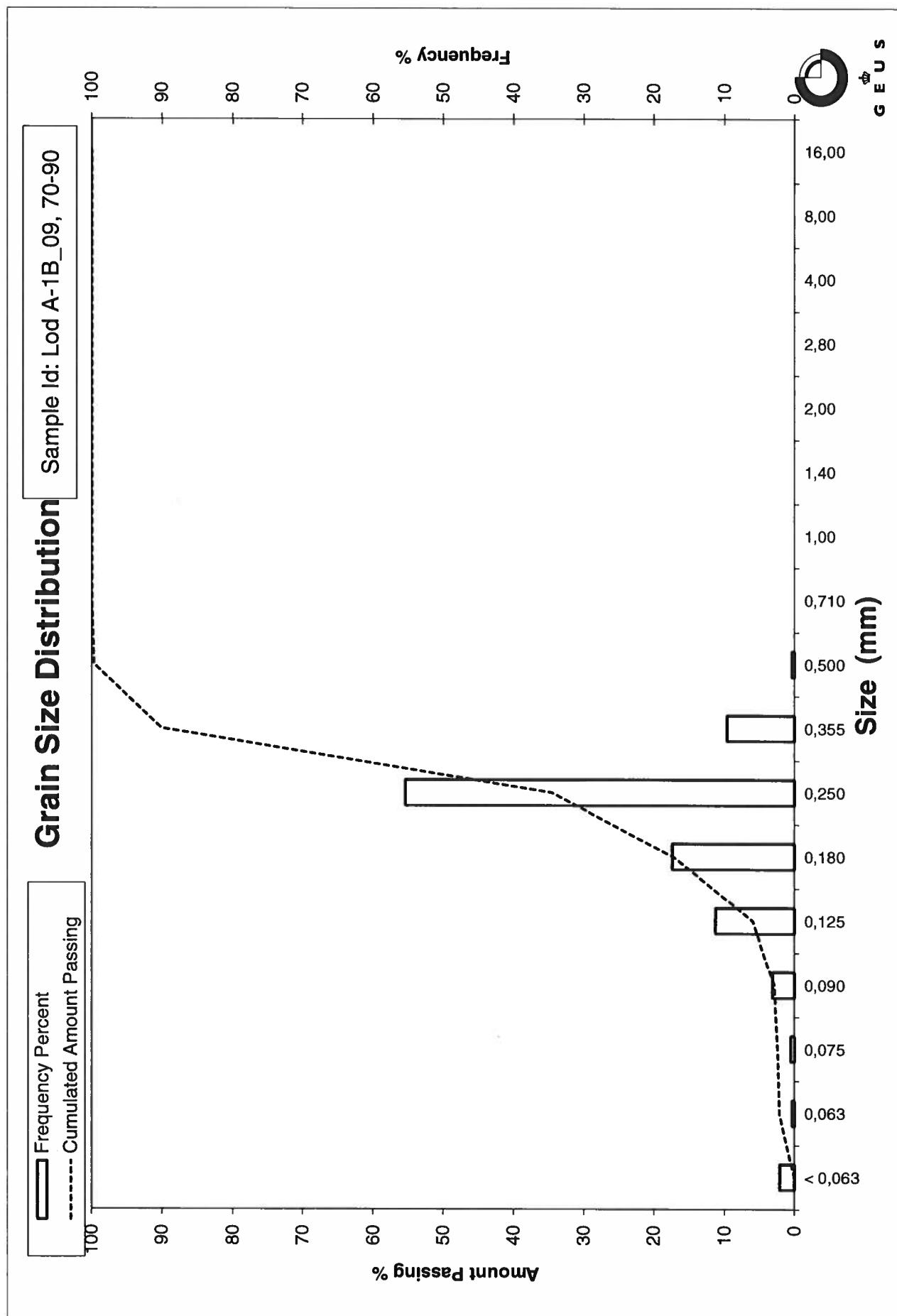
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_10, 0-20
Lab. Id: 200729
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 100,33 g

Size Fractions

Size mm	Size ϕ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,09	0,09	99,91
2,80	-1,49	0,29	0,29	99,62
2,00	-1,00	0,24	0,24	99,38
1,40	-0,49	0,55	0,55	98,83
1,00	0,00	1,74	1,73	97,10
0,710	0,49	10,04	10,01	87,09
0,500	1,00	19,00	18,94	68,16
0,355	1,49	33,68	33,57	34,59
0,250	2,00	18,63	18,57	16,02
0,180	2,47	8,46	8,43	7,58
0,125	3,00	3,34	3,33	4,26
0,090	3,47	0,72	0,72	3,54
0,075	3,74	0,53	0,53	3,01
0,063	3,99	0,05	0,05	2,96
< 0,063	> 3,99	2,97	2,96	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,96
Sand, fine	(0,063 mm - 0,200 mm):	7,03
Sand, medium	(0,2 mm - 0,6 mm):	67,18
Sand, coarse	(0,6 mm - 2 mm):	22,21
Gravel	(> 2 mm):	0,62
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	ϕ
5%	95%	0,94	0,09
16%	84%	0,68	0,57
25%	75%	0,58	0,80
40%	60%	0,46	1,11
Median 50%	50%	0,42	1,25
75%	25%	0,30	1,73
84%	16%	0,25	2,00
90%	10%	0,20	2,32
95%	5%	0,14	2,86

Moments Statistics

Mean	1,27
Sorting	0,78
Skewness	0,11
Kurtosis	1,21
Uniformity Coefficient	2,32

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

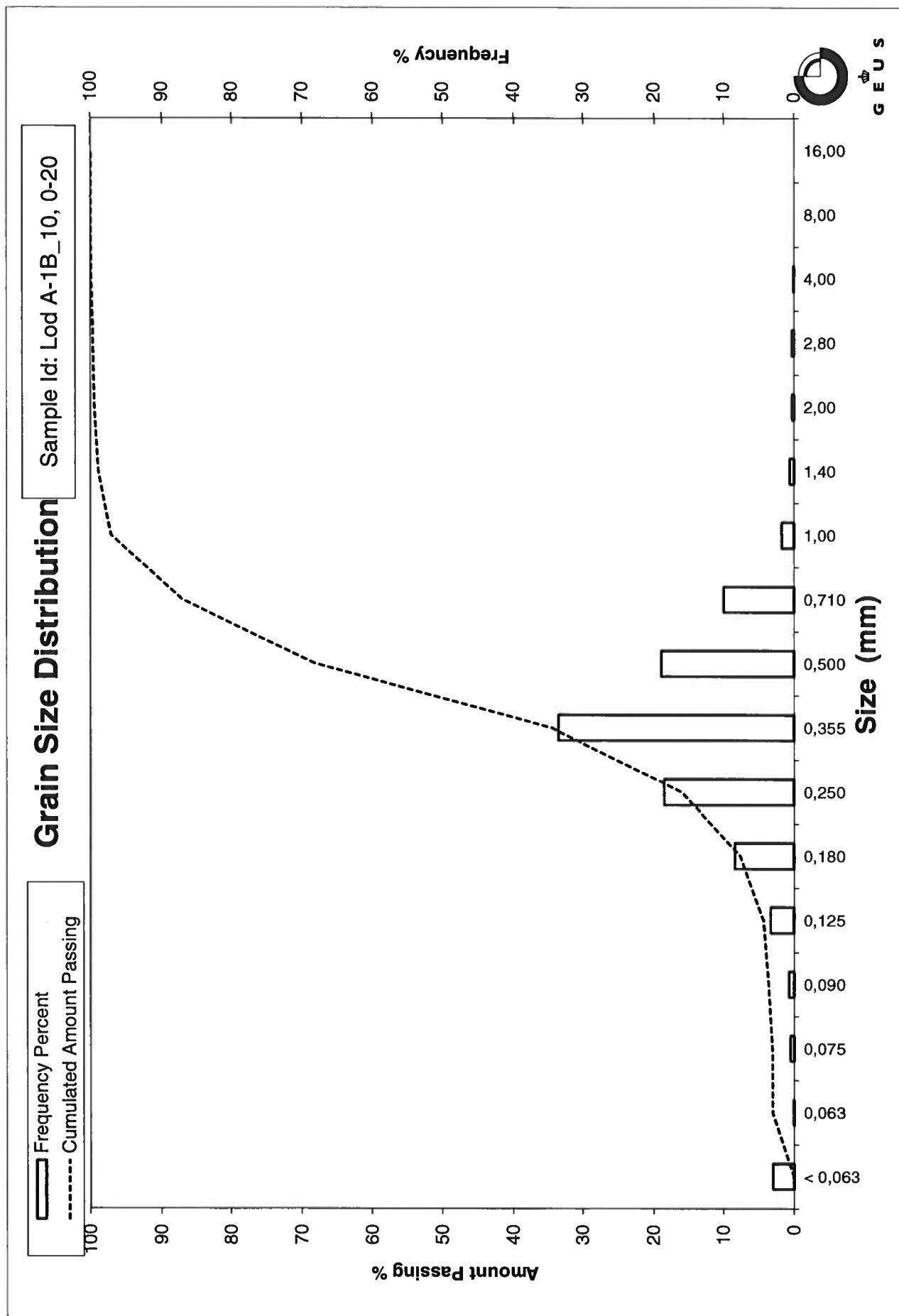
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_10, 100-120
Lab. Id: 200730
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 103,23 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,01	0,01	99,99
2,00	-1,00	0,24	0,23	99,76
1,40	-0,49	0,28	0,27	99,49
1,00	0,00	1,74	1,69	97,80
0,710	0,49	4,05	3,92	93,88
0,500	1,00	16,30	15,79	78,09
0,355	1,49	24,81	24,03	54,05
0,250	2,00	32,17	31,16	22,89
0,180	2,47	15,85	15,35	7,54
0,125	3,00	4,02	3,89	3,64
0,090	3,47	1,01	0,98	2,66
0,075	3,74	0,25	0,24	2,42
0,063	3,99	0,17	0,16	2,26
< 0,063	> 3,99	2,33	2,26	0,00

Gravel
Sand

Sieve Analysis

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 2,26
Sand, fine	(0,063 mm - 0,200 mm): 9,67
Sand, medium	(0,2 mm - 0,6 mm): 73,68
Sand, coarse	(0,6 mm - 2 mm): 14,15
Gravel	(> 2 mm): 0,24
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,79	0,33
16%	84%	0,58	0,79
25%	75%	0,48	1,05
40%	60%	0,39	1,36
Median 50%	50%	0,34	1,55
75%	25%	0,26	1,96
84%	16%	0,22	2,19
90%	10%	0,19	2,39
95%	5%	0,14	2,79

Moments Statistics

Mean	1,51
Sorting	0,72
Skewness	-0,04
Kurtosis	1,11
Uniformity Coefficient	2,04

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

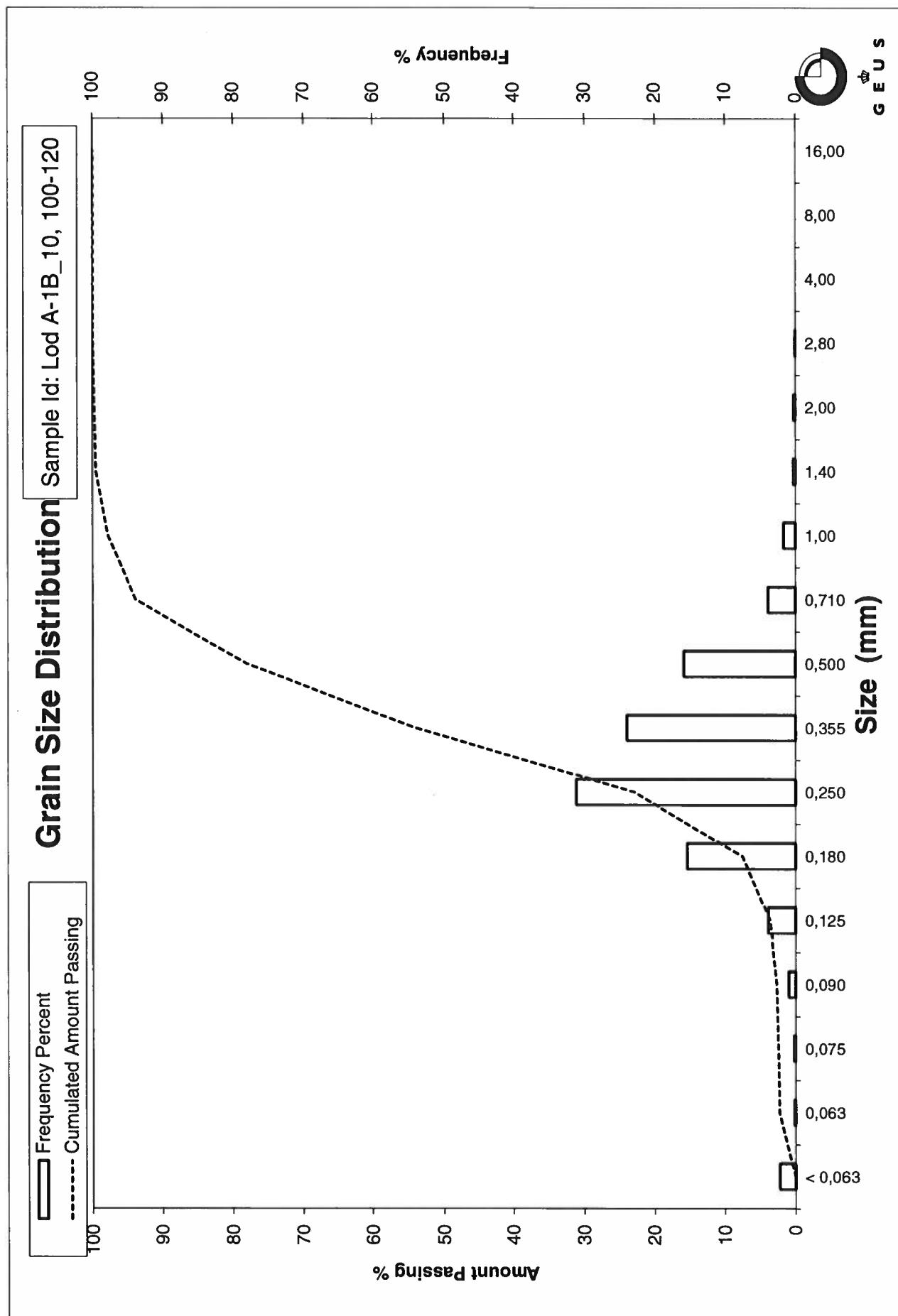
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_10, 200-220
Lab. Id: 200731
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 101,71 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,16	0,16	99,84
2,80	-1,49	0,24	0,24	99,61
2,00	-1,00	0,42	0,41	99,19
1,40	-0,49	1,14	1,12	98,07
1,00	0,00	2,10	2,06	96,01
0,710	0,49	4,10	4,03	91,98
0,500	1,00	16,22	15,95	76,03
0,355	1,49	22,43	22,05	53,98
0,250	2,00	33,41	32,85	21,13
0,180	2,47	14,41	14,17	6,96
0,125	3,00	3,36	3,30	3,66
0,090	3,47	0,76	0,75	2,91
0,075	3,74	0,17	0,17	2,74
0,063	3,99	0,12	0,12	2,63
< 0,063	> 3,99	2,67	2,63	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 2,63
Sand, fine	(0,063 mm - 0,200 mm): 8,38
Sand, medium	(0,2 mm - 0,6 mm): 72,61
Sand, coarse	(0,6 mm - 2 mm): 15,57
Gravel	(> 2 mm): 0,81
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,93	0,11
16%	84%	0,60	0,73
25%	75%	0,49	1,02
40%	60%	0,39	1,34
Median 50%	50%	0,34	1,55
75%	25%	0,26	1,93
84%	16%	0,22	2,15
90%	10%	0,20	2,36
95%	5%	0,15	2,76

Moments Statistics

Mean	1,48
Sorting	0,76
Skewness	-0,12
Kurtosis	1,19
Uniformity Coefficient	2,02

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

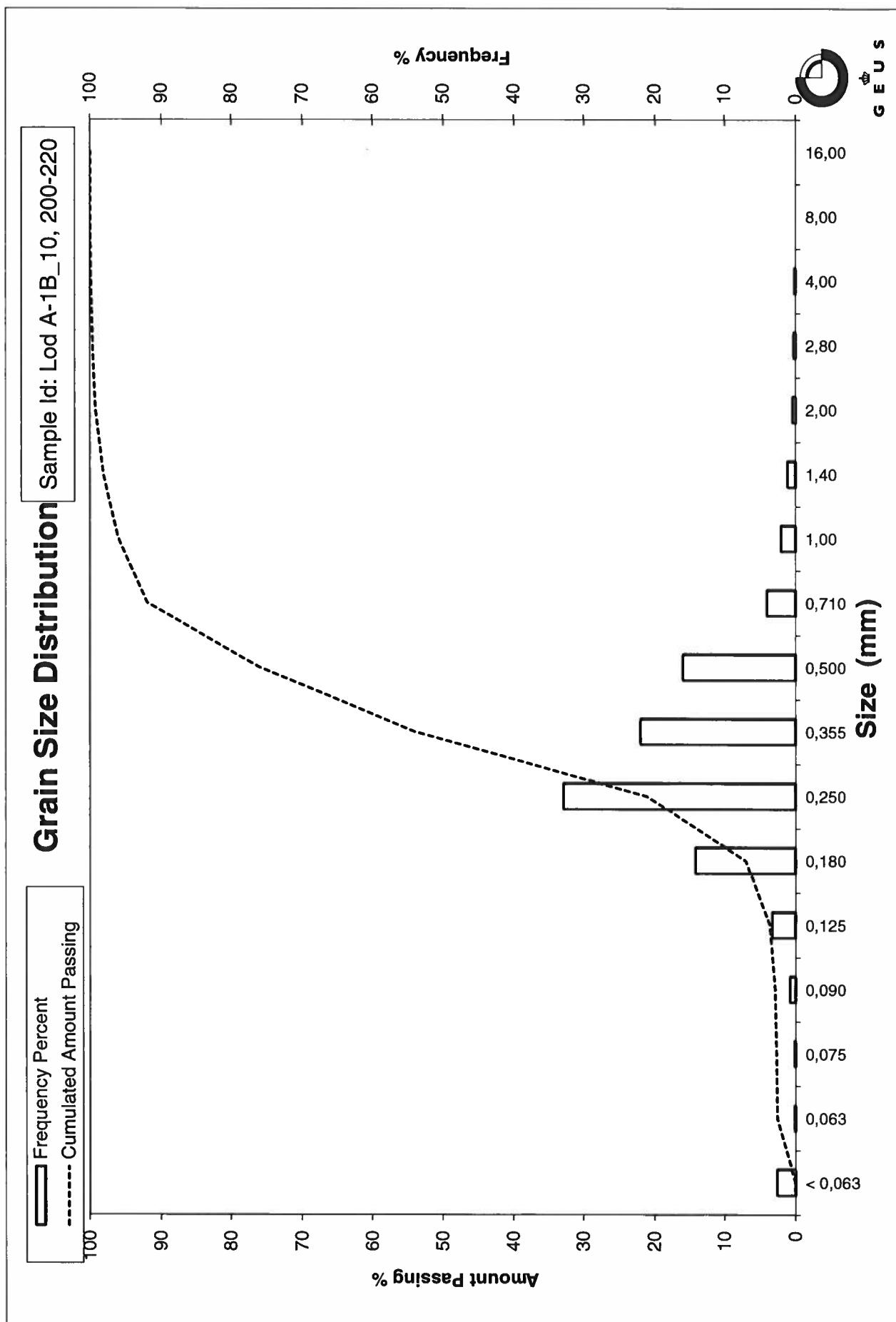
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_10, 280-300
Lab. Id: 200732
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 171,51 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	11,08	6,46	93,54
4,00	-2,00	30,34	17,69	75,85
2,80	-1,49	8,65	5,04	70,81
2,00	-1,00	4,53	2,64	68,17
1,40	-0,49	3,32	1,94	66,23
1,00	0,00	4,57	2,66	63,56
0,710	0,49	6,44	3,75	59,81
0,500	1,00	20,66	12,05	47,76
0,355	1,49	29,60	17,26	30,51
0,250	2,00	32,15	18,75	11,76
0,180	2,47	13,77	8,03	3,73
0,125	3,00	3,38	1,97	1,76
0,090	3,47	0,72	0,42	1,34
0,075	3,74	0,14	0,08	1,26
0,063	3,99	0,09	0,05	1,21
< 0,063	> 3,99	2,07	1,21	0,00

Gravel

Sand

Sieve Analysis

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,21
Sand, fine	(0,063 mm - 0,200 mm): 4,82
Sand, medium	(0,2 mm - 0,6 mm): 47,47
Sand, coarse	(0,6 mm - 2 mm): 14,66
Gravel	(> 2 mm): 31,83
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	9,81	-3,29
16%	84%	5,84	-2,55
25%	75%	3,80	-1,93
40%	60%	0,72	0,46
Median 50%	50%	0,54	0,89
75%	25%	0,32	1,63
84%	16%	0,27	1,87
90%	10%	0,23	2,09
95%	5%	0,19	2,39

Moments Statistics

Mean	0,07
Sorting	1,96
Skewness	-0,52
Kurtosis	0,66
Uniformity Coefficient	3,09

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

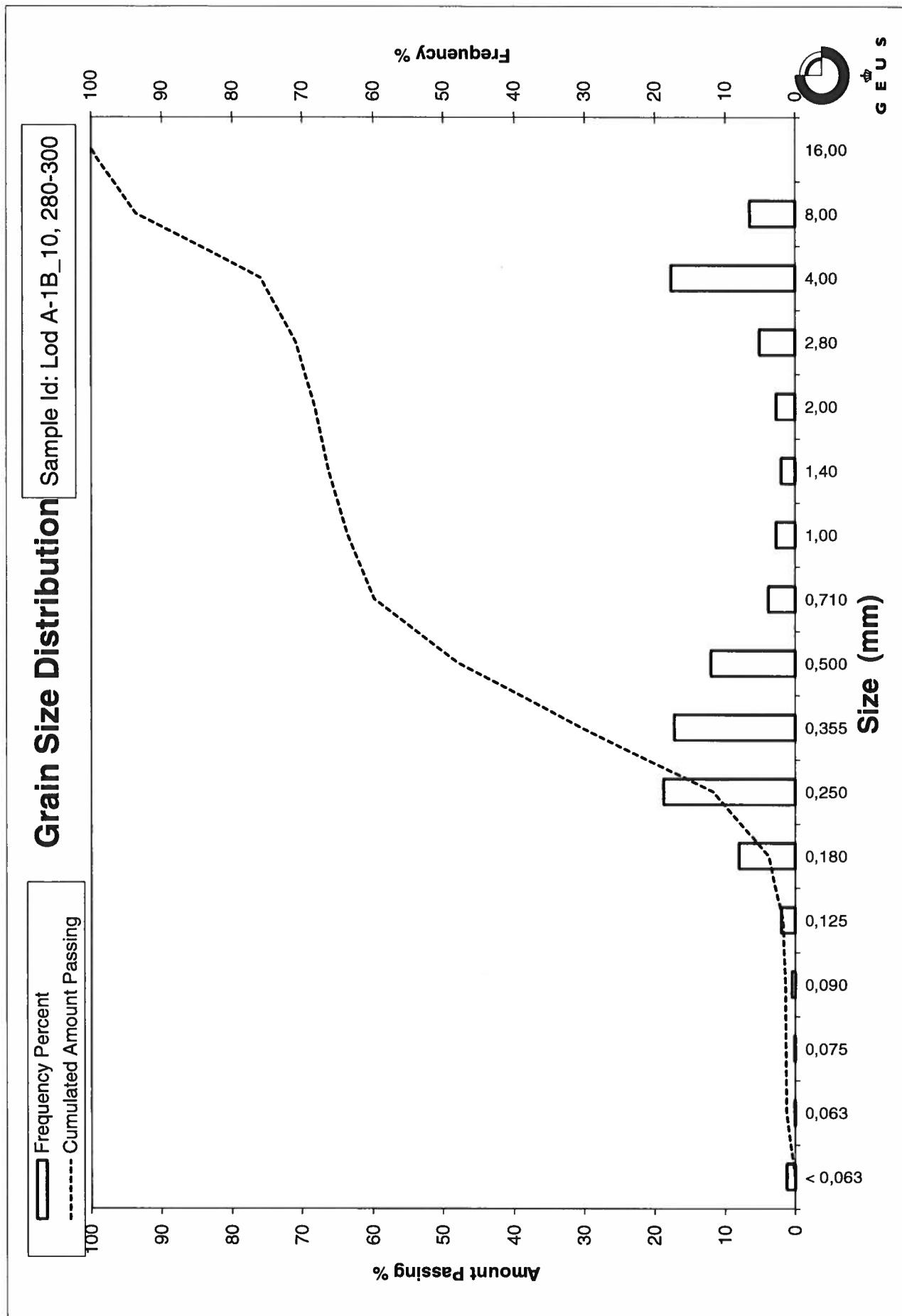
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_11, 100-120
Lab. Id: 200733
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 612,75 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	90,08	14,70	85,30
8,00	-3,00	130,12	21,24	64,06
4,00	-2,00	70,66	11,53	52,53
2,80	-1,49	32,58	5,32	47,21
2,00	-1,00	27,48	4,48	42,73
1,40	-0,49	25,58	4,17	38,56
1,00	0,00	30,15	4,92	33,64
0,710	0,49	39,39	6,43	27,21
0,500	1,00	66,10	10,79	16,42
0,355	1,49	55,45	9,05	7,37
0,250	2,00	23,88	3,90	3,47
0,180	2,47	7,20	1,17	2,30
0,125	3,00	4,76	0,78	1,52
0,090	3,47	1,32	0,21	1,31
0,075	3,74	0,70	0,11	1,19
0,063	3,99	0,62	0,10	1,09
< 0,063	> 3,99	6,69	1,09	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,09
Sand, fine	(0,063 mm - 0,200 mm): 1,54
Sand, medium	(0,2 mm - 0,6 mm): 18,92
Sand, coarse	(0,6 mm - 2 mm): 21,17
Gravel	(> 2 mm): 57,27
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	15,51	-3,96
25%	75%	12,12	-3,60
40%	60%	6,59	-2,72
Median 50%	50%	3,43	-1,78
75%	25%	0,67	0,58
84%	16%	0,49	1,02
90%	10%	0,40	1,33
95%	5%	0,29	1,78

Moments Statistics

Mean	-1,57
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	16,59

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

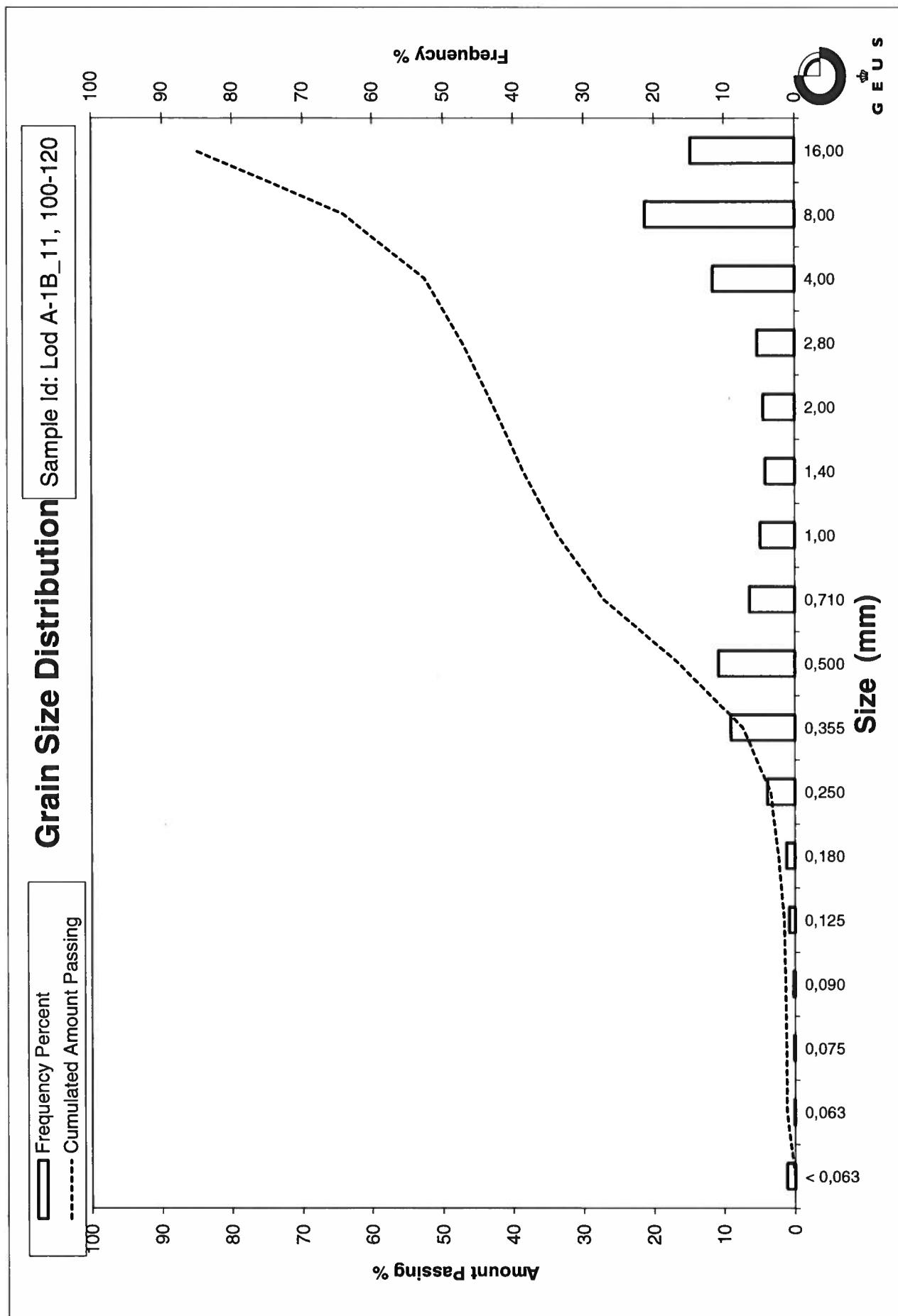
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_11, 190-210
Lab. Id: 200734
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 116,15 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	2,59	2,23	97,77
4,00	-2,00	1,50	1,29	96,48
2,80	-1,49	0,76	0,65	95,82
2,00	-1,00	1,09	0,94	94,89
1,40	-0,49	0,72	0,62	94,27
1,00	0,00	1,76	1,52	92,75
0,710	0,49	3,24	2,79	89,96
0,500	1,00	19,31	16,63	73,34
0,355	1,49	65,10	56,05	17,29
0,250	2,00	17,53	15,09	2,20
0,180	2,47	1,00	0,86	1,33
0,125	3,00	0,21	0,18	1,15
0,090	3,47	0,05	0,04	1,11
0,075	3,74	0,00	0,00	1,11
0,063	3,99	0,00	0,00	1,11
< 0,063	> 3,99	1,29	1,11	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,11
Sand, fine	(0,063 mm - 0,200 mm):	0,47
Sand, medium	(0,2 mm - 0,6 mm):	79,67
Sand, coarse	(0,6 mm - 2 mm):	13,63
Gravel	(> 2 mm):	5,11
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	2,10	-1,07
16%	84%	0,63	0,66
25%	75%	0,52	0,94
40%	60%	0,47	1,10
Median 50%	50%	0,44	1,19
75%	25%	0,37	1,42
84%	16%	0,35	1,53
90%	10%	0,30	1,72
95%	5%	0,27	1,89

Moments Statistics

Mean	1,12
Sorting	0,67
Skewness	-0,37
Kurtosis	2,56
Uniformity Coefficient	1,53

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6 \text{ (Folk and Ward 1957)}$$

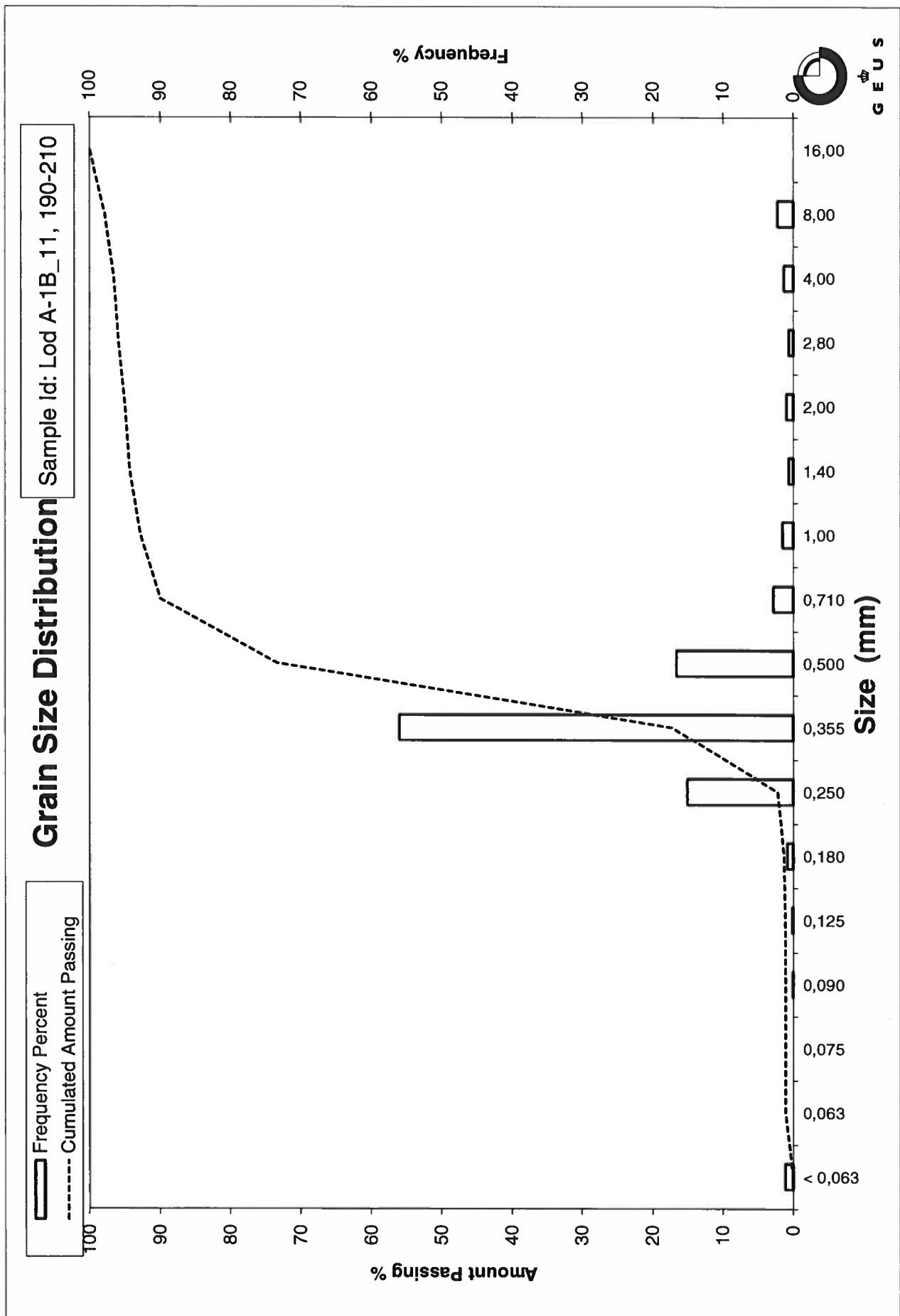
$$\text{Kurtosis } (\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_11, 310-330
Lab. Id: 200735
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 186,03 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	22,43	12,06	87,94
8,00	-3,00	2,56	1,38	86,57
4,00	-2,00	3,11	1,67	84,89
2,80	-1,49	0,85	0,46	84,44
2,00	-1,00	1,00	0,54	83,90
1,40	-0,49	0,81	0,44	83,47
1,00	0,00	1,45	0,78	82,69
0,710	0,49	4,37	2,35	80,34
0,500	1,00	27,08	14,56	65,78
0,355	1,49	61,17	32,88	32,90
0,250	2,00	49,27	26,48	6,41
0,180	2,47	4,34	2,33	4,08
0,125	3,00	1,42	0,76	3,32
0,090	3,47	0,54	0,29	3,03
0,075	3,74	0,16	0,09	2,94
0,063	3,99	0,13	0,07	2,87
< 0,063	> 3,99	5,34	2,87	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	2,87
Sand, fine	(0,063 mm - 0,200 mm):	1,88
Sand, medium	(0,2 mm - 0,6 mm):	67,96
Sand, coarse	(0,6 mm - 2 mm):	11,19
Gravel	(> 2 mm):	16,10
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	2,15	-1,10
25%	75%	0,63	0,66
40%	60%	0,47	1,08
Median 50%	50%	0,43	1,22
75%	25%	0,32	1,63
84%	16%	0,29	1,80
90%	10%	0,26	1,92
95%	5%	0,21	2,27

Moments Statistics

Mean	0,64
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	1,80

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

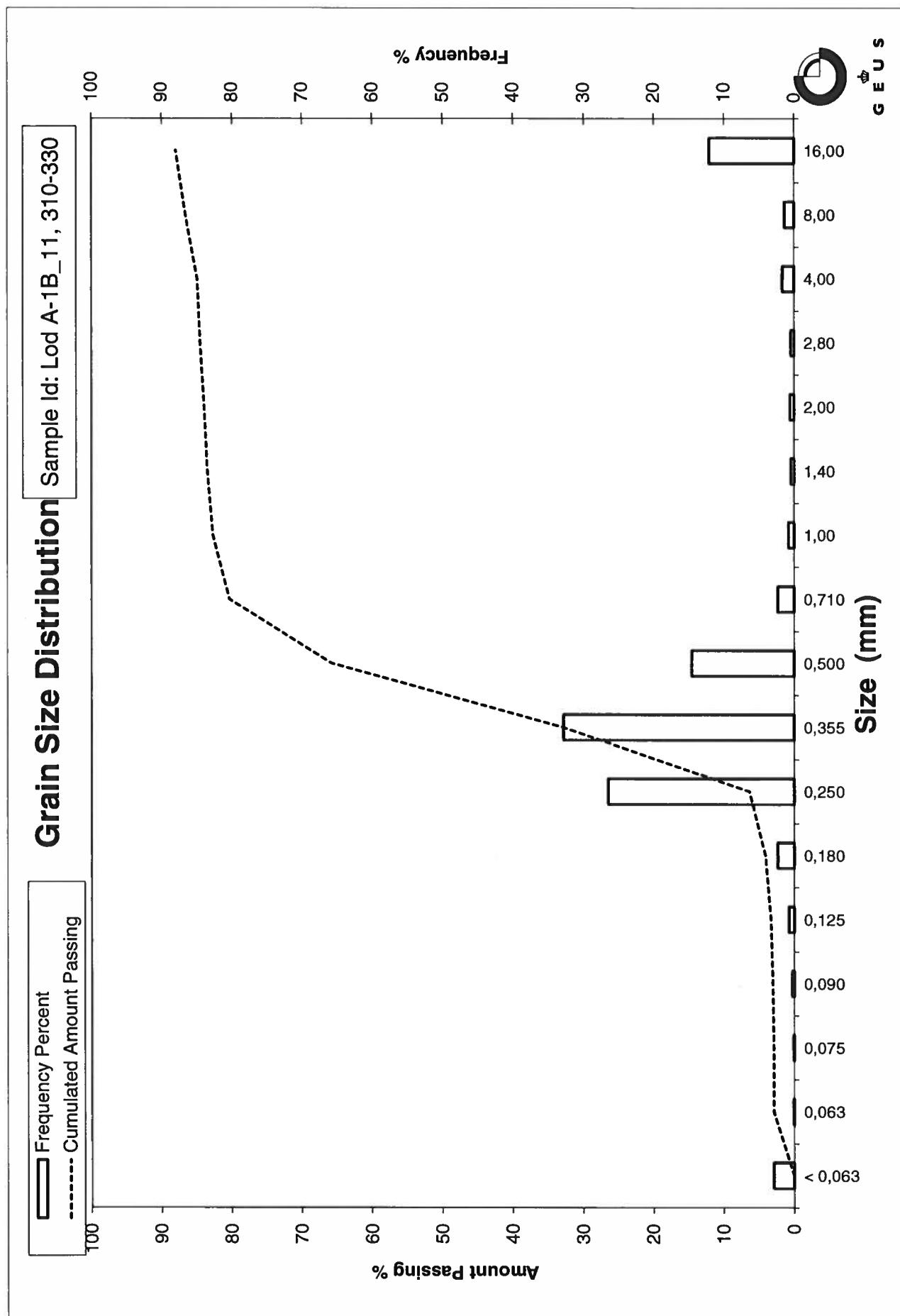
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_11, 400-420
Lab. Id: 200736
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 278,74 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	8,46	3,04	96,96
8,00	-3,00	15,51	5,56	91,40
4,00	-2,00	9,05	3,25	88,15
2,80	-1,49	4,11	1,48	86,68
2,00	-1,00	3,95	1,42	85,26
1,40	-0,49	4,57	1,64	83,62
1,00	0,00	12,03	4,32	79,31
0,710	0,49	19,04	6,83	72,48
0,500	1,00	46,34	16,63	55,85
0,355	1,49	98,00	35,16	20,69
0,250	2,00	42,46	15,23	5,46
0,180	2,47	7,13	2,56	2,90
0,125	3,00	2,71	0,97	1,93
0,090	3,47	0,74	0,27	1,66
0,075	3,74	0,19	0,07	1,59
0,063	3,99	0,17	0,06	1,54
< 0,063	> 3,99	4,28	1,54	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,54
Sand, fine	(0,063 mm - 0,200 mm): 2,10
Sand, medium	(0,2 mm - 0,6 mm): 60,14
Sand, coarse	(0,6 mm - 2 mm): 21,49
Gravel	(> 2 mm): 14,74
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	13,17	-3,72
16%	84%	1,54	-0,62
25%	75%	0,82	0,29
40%	60%	0,55	0,86
Median 50%	50%	0,48	1,07
75%	25%	0,37	1,42
84%	16%	0,32	1,63
90%	10%	0,28	1,83
95%	5%	0,24	2,07

Moments Statistics

Mean	0,69
Sorting	1,44
Skewness	-0,58
Kurtosis	2,10
Uniformity Coefficient	1,96

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

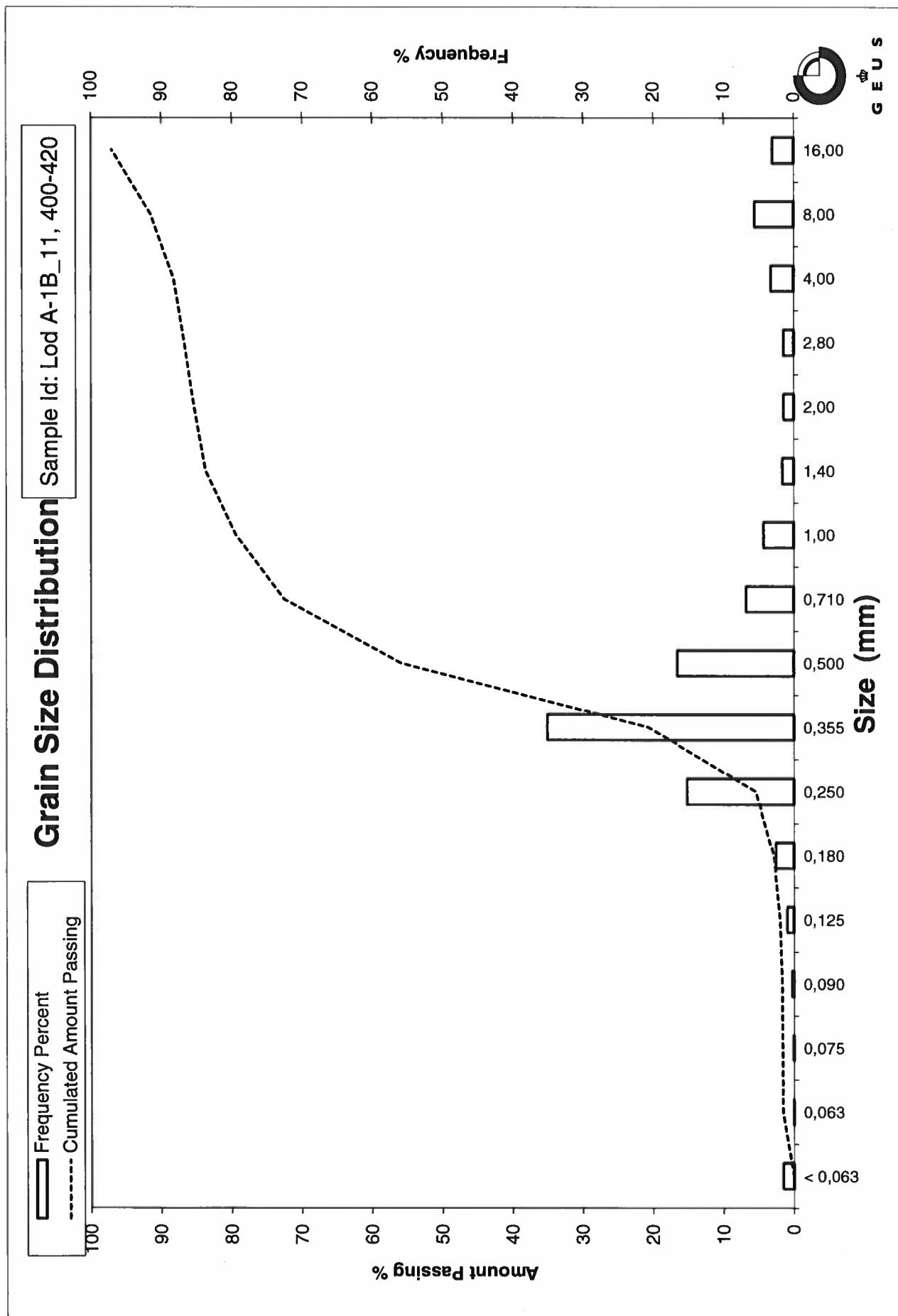
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_12, 0-20
Lab. Id: 200737
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 109 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	1,51	1,39	98,61
2,80	-1,49	0,32	0,29	98,32
2,00	-1,00	1,02	0,94	97,39
1,40	-0,49	1,43	1,31	96,07
1,00	0,00	2,80	2,57	93,50
0,710	0,49	6,37	5,84	87,66
0,500	1,00	20,61	18,91	68,75
0,355	1,49	35,82	32,86	35,89
0,250	2,00	25,62	23,50	12,39
0,180	2,47	7,26	6,66	5,72
0,125	3,00	3,53	3,24	2,49
0,090	3,47	1,03	0,94	1,54
0,075	3,74	0,21	0,19	1,35
0,063	3,99	0,13	0,12	1,23
< 0,063	> 3,99	1,34	1,23	0,00

Gravel
Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,23
Sand, fine	(0,063 mm - 0,200 mm): 6,40
Sand, medium	(0,2 mm - 0,6 mm): 70,13
Sand, coarse	(0,6 mm - 2 mm): 19,63
Gravel	(> 2 mm): 2,61
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,23	-0,30
16%	84%	0,67	0,58
25%	75%	0,57	0,81
40%	60%	0,46	1,12
Median 50%	50%	0,42	1,26
75%	25%	0,31	1,71
84%	16%	0,27	1,91
90%	10%	0,22	2,15
95%	5%	0,17	2,58

Moments Statistics

Mean	1,25
Sorting	0,77
Skewness	-0,06
Kurtosis	1,32
Uniformity Coefficient	2,05

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

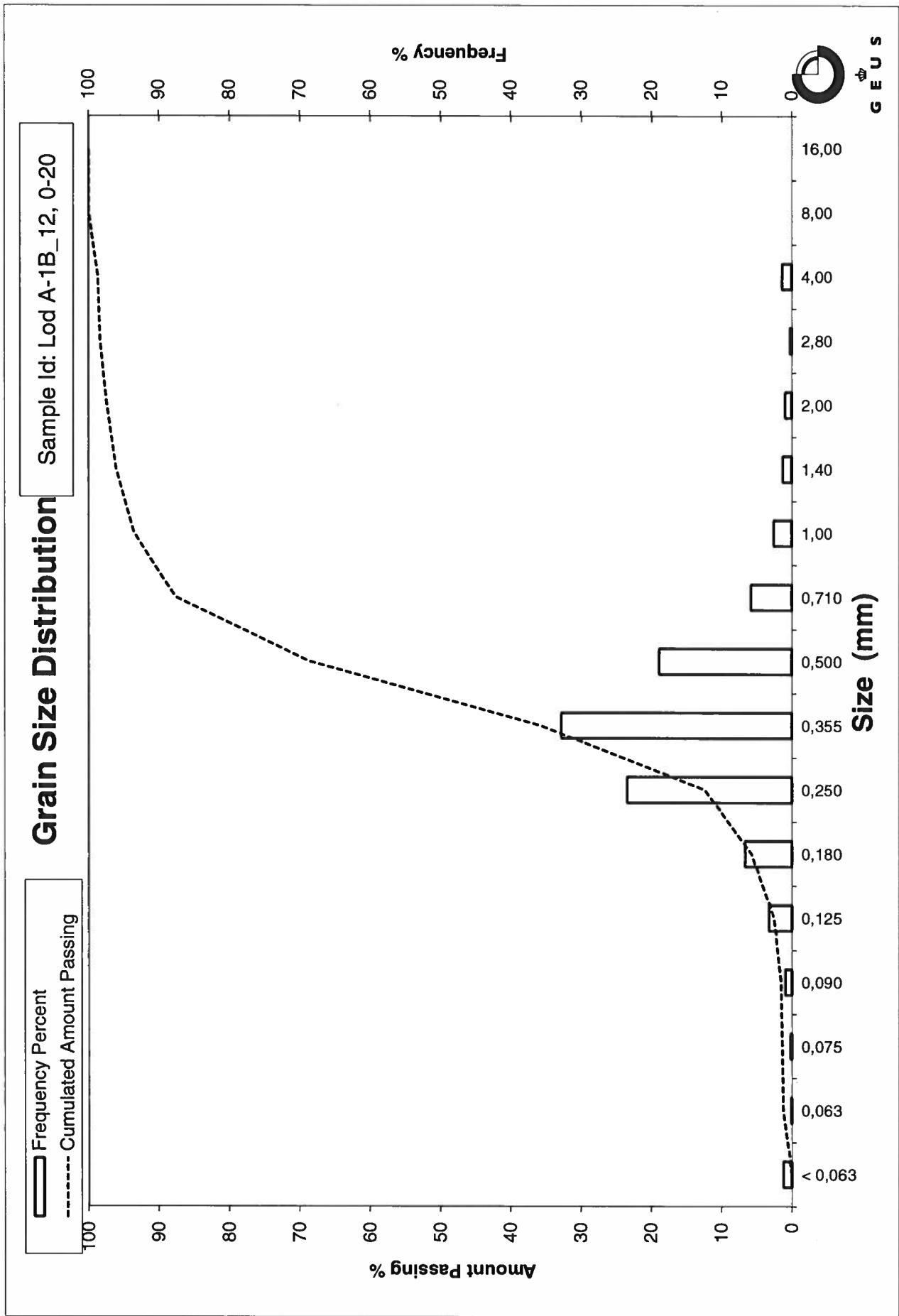
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_12, 100-120
Lab. Id: 200738
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 109,43 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	5,22	4,77	95,23
4,00	-2,00	0,00	0,00	95,23
2,80	-1,49	0,45	0,41	94,82
2,00	-1,00	0,38	0,35	94,47
1,40	-0,49	0,47	0,43	94,04
1,00	0,00	2,02	1,85	92,20
0,710	0,49	4,92	4,50	87,70
0,500	1,00	28,07	25,65	62,05
0,355	1,49	39,52	36,11	25,93
0,250	2,00	16,39	14,98	10,96
0,180	2,47	9,58	8,75	2,20
0,125	3,00	1,26	1,15	1,05
0,090	3,47	0,14	0,13	0,92
0,075	3,74	0,03	0,03	0,90
0,063	3,99	0,00	0,00	0,90
< 0,063	> 3,99	0,98	0,90	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,90
Sand, fine	(0,063 mm - 0,200 mm): 3,81
Sand, medium	(0,2 mm - 0,6 mm): 69,56
Sand, coarse	(0,6 mm - 2 mm): 20,21
Gravel	(> 2 mm): 5,53
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	3,33	-1,74
16%	84%	0,68	0,56
25%	75%	0,61	0,72
40%	60%	0,49	1,02
Median 50%	50%	0,45	1,15
75%	25%	0,35	1,52
84%	16%	0,29	1,81
90%	10%	0,24	2,04
95%	5%	0,20	2,30

Moments Statistics

Mean	1,17
Sorting	0,93
Skewness	-0,18
Kurtosis	2,07
Uniformity Coefficient	2,03

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

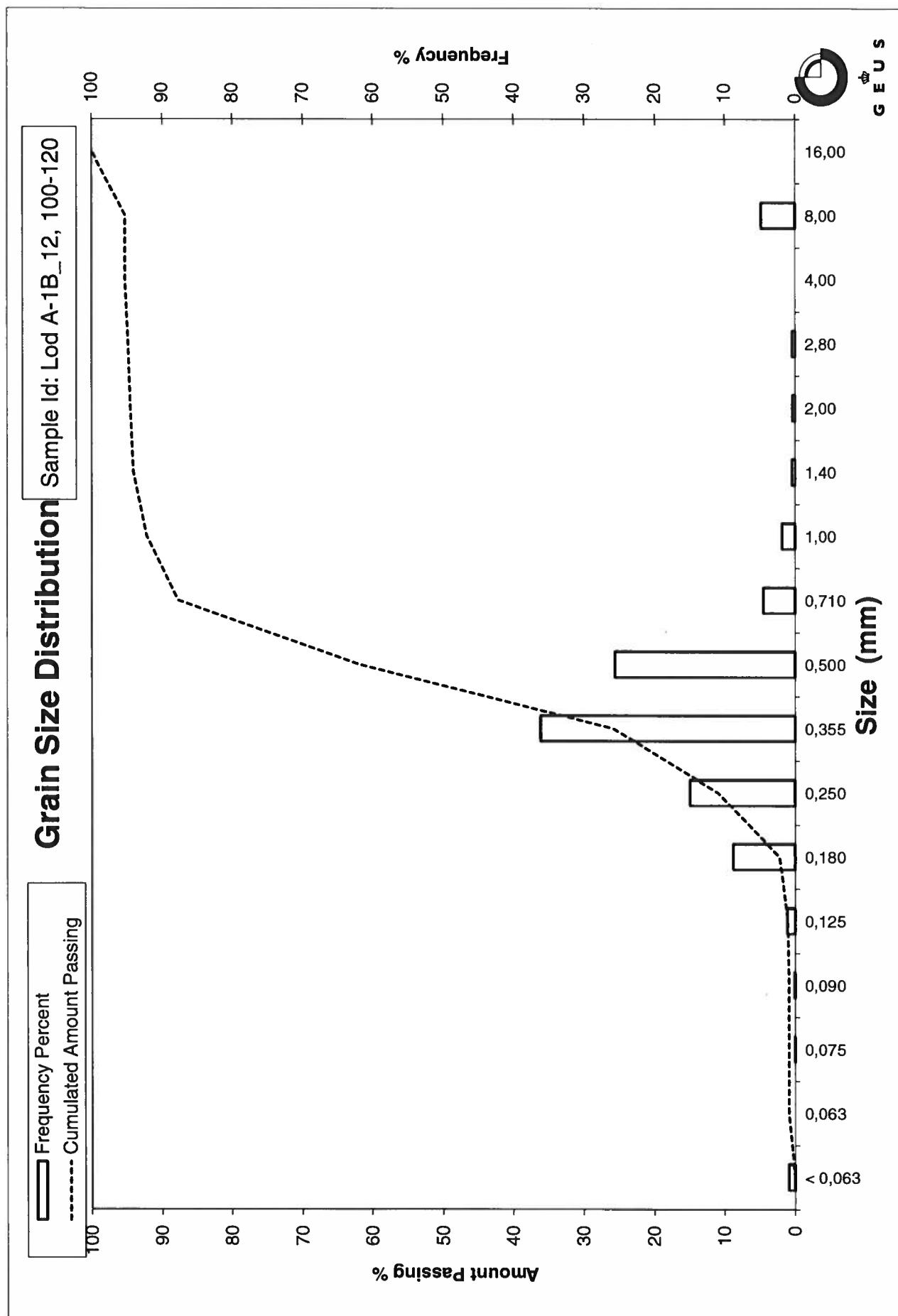
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_12, 200-220
Lab. Id: 200739
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 96,45 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,75	0,78	99,22
8,00	-3,00	0,00	0,00	99,22
4,00	-2,00	0,00	0,00	99,22
2,80	-1,49	0,06	0,06	99,16
2,00	-1,00	0,08	0,08	99,08
1,40	-0,49	0,10	0,10	98,97
1,00	0,00	0,22	0,23	98,75
0,710	0,49	0,52	0,54	98,21
0,500	1,00	3,03	3,14	95,06
0,355	1,49	22,96	23,81	71,26
0,250	2,00	48,14	49,91	21,35
0,180	2,47	16,04	16,63	4,72
0,125	3,00	2,34	2,43	2,29
0,090	3,47	0,53	0,55	1,74
0,075	3,74	0,10	0,10	1,64
0,063	3,99	0,06	0,06	1,58
< 0,063	> 3,99	1,52	1,58	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,58
Sand, fine	(0,063 mm - 0,200 mm): 7,89
Sand, medium	(0,2 mm - 0,6 mm): 87,09
Sand, coarse	(0,6 mm - 2 mm): 2,52
Gravel	(> 2 mm): 0,92
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,50	1,00
16%	84%	0,43	1,21
25%	75%	0,38	1,40
40%	60%	0,33	1,59
Median 50%	50%	0,31	1,69
75%	25%	0,26	1,96
84%	16%	0,23	2,14
90%	10%	0,20	2,31
95%	5%	0,18	2,46

Moments Statistics

Mean	1,68
Sorting	0,45
Skewness	0,01
Kurtosis	1,09
Uniformity Coefficient	1,64

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

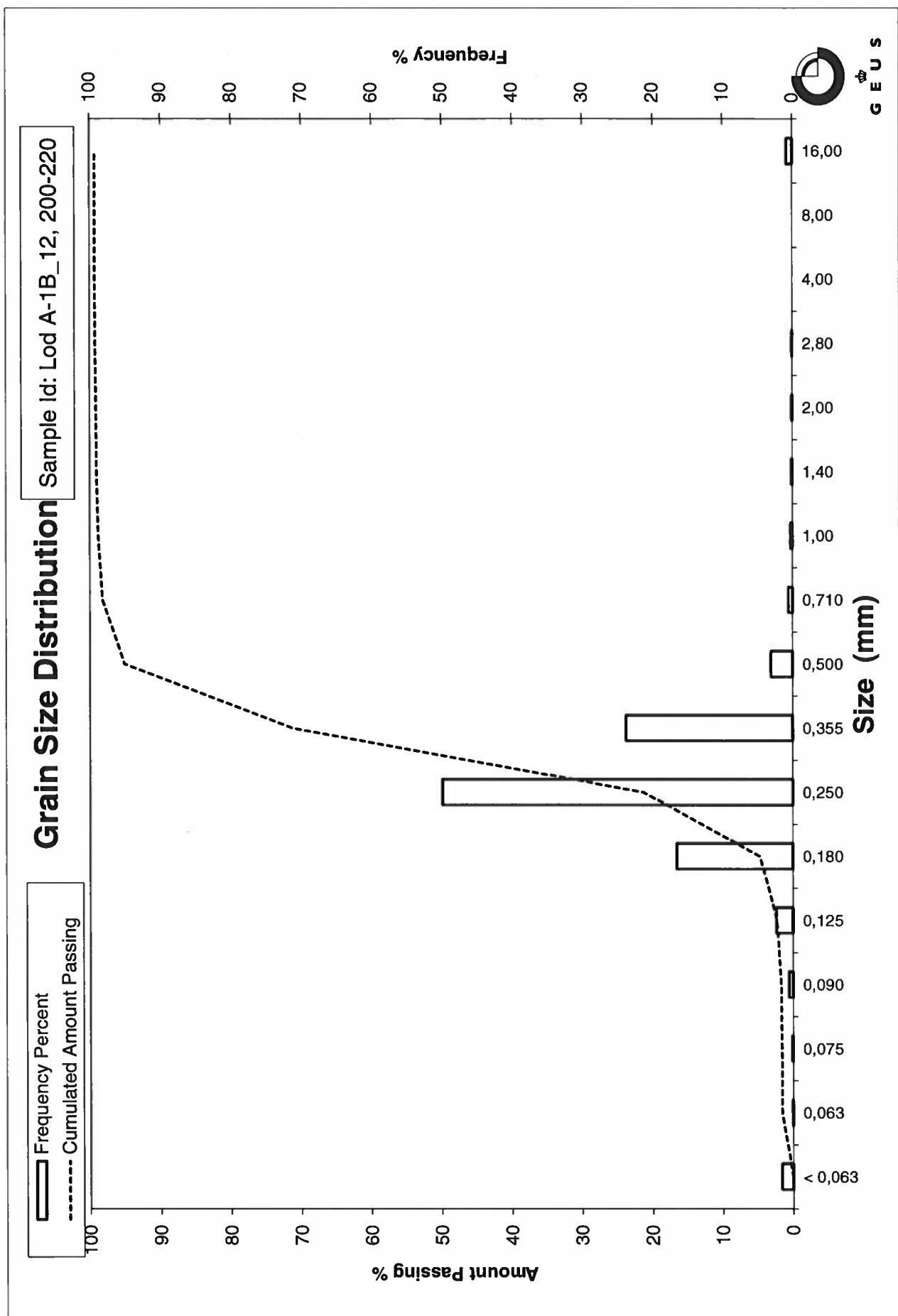
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_12, 300-320
Lab. Id: 200740
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 102,04 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,05	0,05	99,95
2,00	-1,00	0,06	0,06	99,89
1,40	-0,49	0,06	0,06	99,83
1,00	0,00	0,29	0,28	99,55
0,710	0,49	0,89	0,87	98,68
0,500	1,00	5,92	5,80	92,88
0,355	1,49	55,03	53,93	38,95
0,250	2,00	31,57	30,94	8,01
0,180	2,47	4,73	4,64	3,37
0,125	3,00	1,23	1,21	2,17
0,090	3,47	0,40	0,39	1,77
0,075	3,74	0,12	0,12	1,66
0,063	3,99	0,07	0,07	1,59
< 0,063	> 3,99	1,62	1,59	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,59
Sand, fine	(0,063 mm - 0,200 mm):	3,11
Sand, medium	(0,2 mm - 0,6 mm):	90,94
Sand, coarse	(0,6 mm - 2 mm):	4,25
Gravel	(> 2 mm):	0,11
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,58	0,79
16%	84%	0,48	1,07
25%	75%	0,45	1,15
40%	60%	0,41	1,28
Median 50%	50%	0,38	1,38
75%	25%	0,31	1,70
84%	16%	0,28	1,85
90%	10%	0,26	1,96
95%	5%	0,20	2,29

Moments Statistics

Mean	1,43
Sorting	0,42
Skewness	0,22
Kurtosis	1,10
Uniformity Coefficient	1,60

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

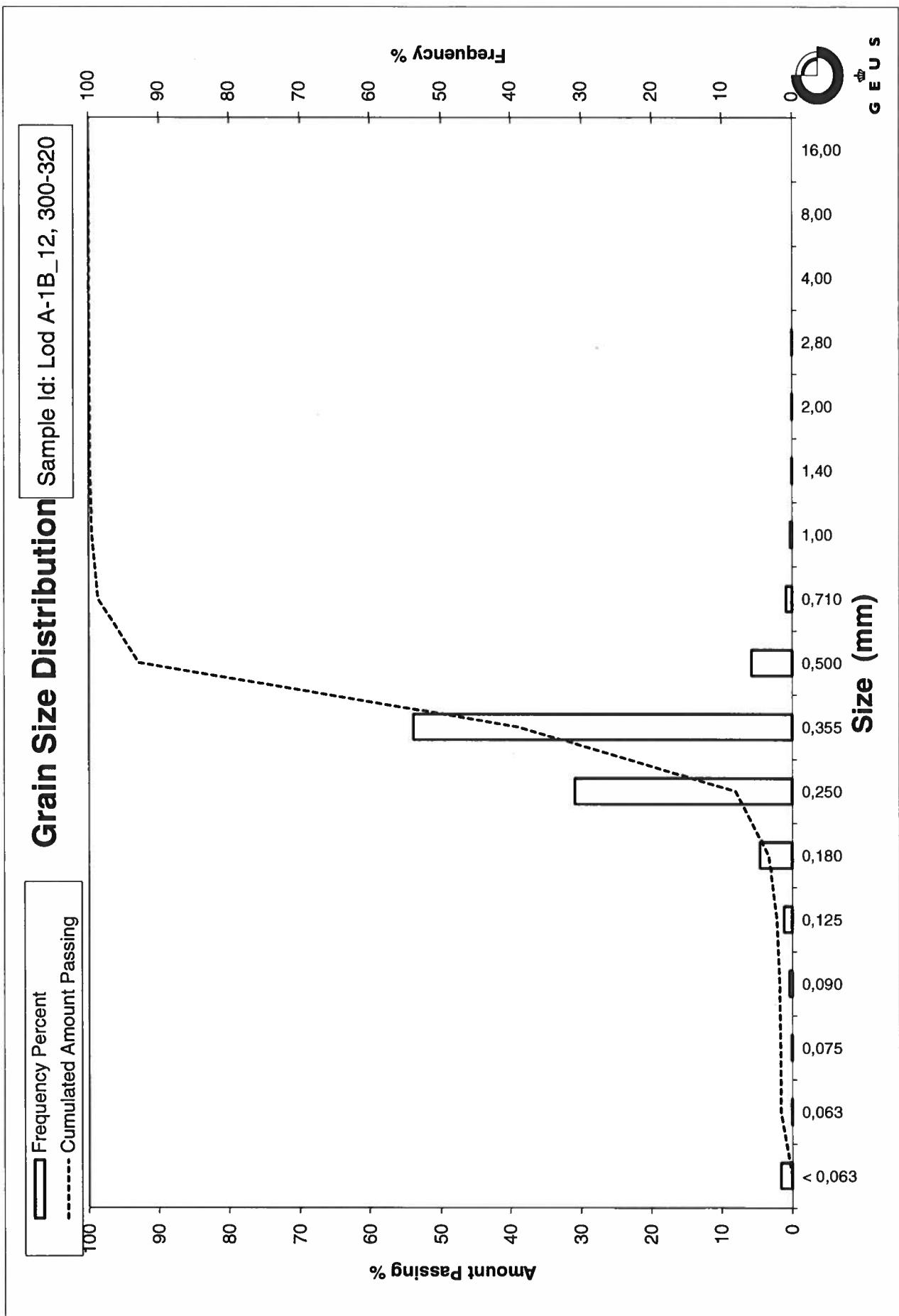
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_13, 0-20
Lab. Id: 200741
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 97,93 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,93	0,95	99,05
4,00	-2,00	0,82	0,84	98,21
2,80	-1,49	1,17	1,19	97,02
2,00	-1,00	0,76	0,78	96,24
1,40	-0,49	0,77	0,79	95,46
1,00	0,00	0,92	0,94	94,52
0,710	0,49	1,07	1,09	93,42
0,500	1,00	2,99	3,05	90,37
0,355	1,49	6,33	6,46	83,91
0,250	2,00	7,06	7,21	76,70
0,180	2,47	5,35	5,46	71,23
0,125	3,00	11,67	11,92	59,32
0,090	3,47	19,36	19,77	39,55
0,075	3,74	9,68	9,88	29,66
0,063	3,99	9,30	9,50	20,17
< 0,063	> 3,99	19,75	20,17	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 20,17
Sand, fine	(0,063 mm - 0,200 mm): 52,63
Sand, medium	(0,2 mm - 0,6 mm): 19,03
Sand, coarse	(0,6 mm - 2 mm): 4,42
Gravel	(> 2 mm): 3,76
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,21	-0,27
16%	84%	0,36	1,49
25%	75%	0,23	2,13
40%	60%	0,13	2,96
Median 50%	50%	0,11	3,20
75%	25%	0,07	3,86
84%	16%	-----	-----
90%	10%	-----	-----
95%	5%	-----	-----

Moments Statistics

Mean	2,34
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	-----

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

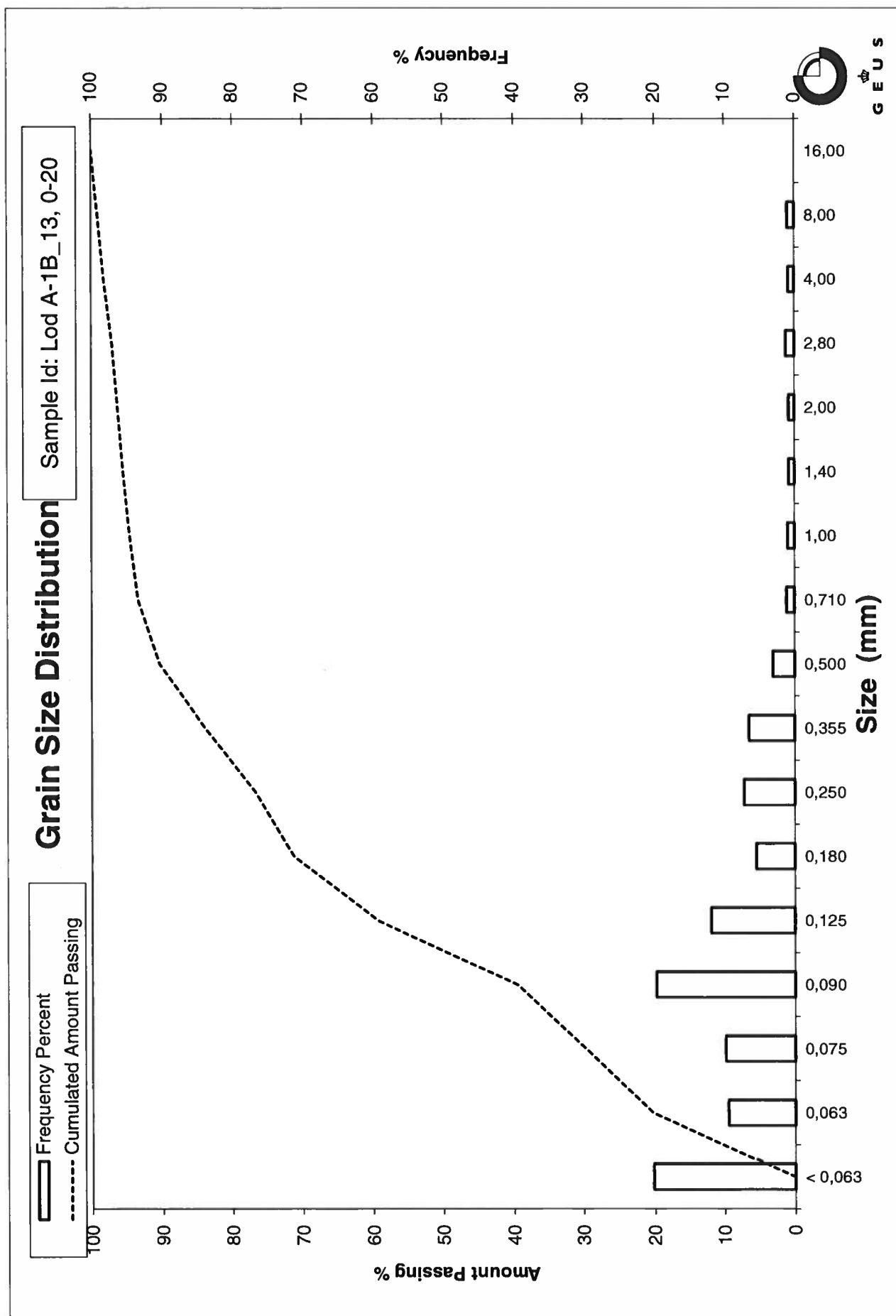
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_13, 100-120
Lab. Id: 200742
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 93,38 g

Size Fractions

Sieve Analysis	
Gravel	
Sand	

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,03	0,03	99,97
0,710	0,49	0,07	0,07	99,89
0,500	1,00	0,19	0,20	99,69
0,355	1,49	0,75	0,80	98,89
0,250	2,00	1,62	1,73	97,15
0,180	2,47	3,91	4,19	92,96
0,125	3,00	22,96	24,59	68,38
0,090	3,47	22,70	24,31	44,07
0,075	3,74	9,02	9,66	34,41
0,063	3,99	8,35	8,94	25,47
< 0,063	> 3,99	23,78	25,47	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 25,47
Sand, fine	(0,063 mm - 0,200 mm): 68,69
Sand, medium	(0,2 mm - 0,6 mm): 5,63
Sand, coarse	(0,6 mm - 2 mm): 0,21
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,21	2,22
16%	84%	0,16	2,64
25%	75%	0,14	2,84
40%	60%	0,11	3,15
Median 50%	50%	0,10	3,34
75%	25%	-----	-----
84%	16%	-----	-----
90%	10%	-----	-----
95%	5%	-----	-----

Moments Statistics

Mean	2,99
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	-----

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

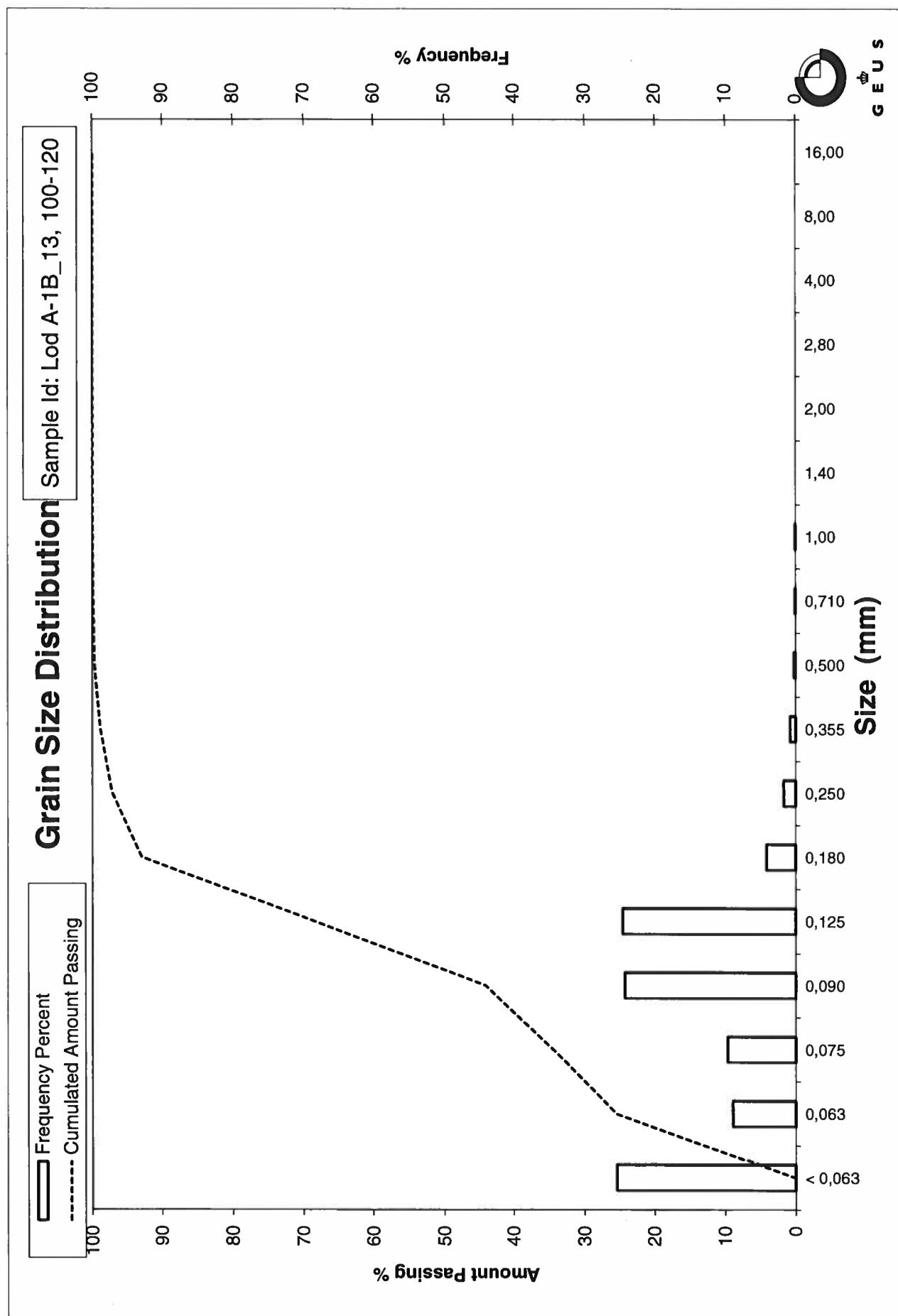
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_13, 190-210
Lab. Id: 200743
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 93,09 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,00	0,00	100,00
0,710	0,49	0,00	0,00	100,00
0,500	1,00	0,06	0,06	99,94
0,355	1,49	0,19	0,20	99,73
0,250	2,00	0,27	0,29	99,44
0,180	2,47	0,37	0,40	99,04
0,125	3,00	3,55	3,81	95,23
0,090	3,47	18,99	20,40	74,83
0,075	3,74	12,13	13,03	61,80
0,063	3,99	16,35	17,56	44,24
< 0,063	> 3,99	41,18	44,24	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 44,24
Sand, fine	(0,063 mm - 0,200 mm): 54,92
Sand, medium	(0,2 mm - 0,6 mm): 0,81
Sand, coarse	(0,6 mm - 2 mm): 0,03
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,12	3,00
16%	84%	0,11	3,24
25%	75%	0,09	3,47
40%	60%	0,07	3,76
Median 50%	50%	0,07	3,90
75%	25%	-----	-----
84%	16%	-----	-----
90%	10%	-----	-----
95%	5%	-----	-----

Moments Statistics

Mean	3,57
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	-----

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

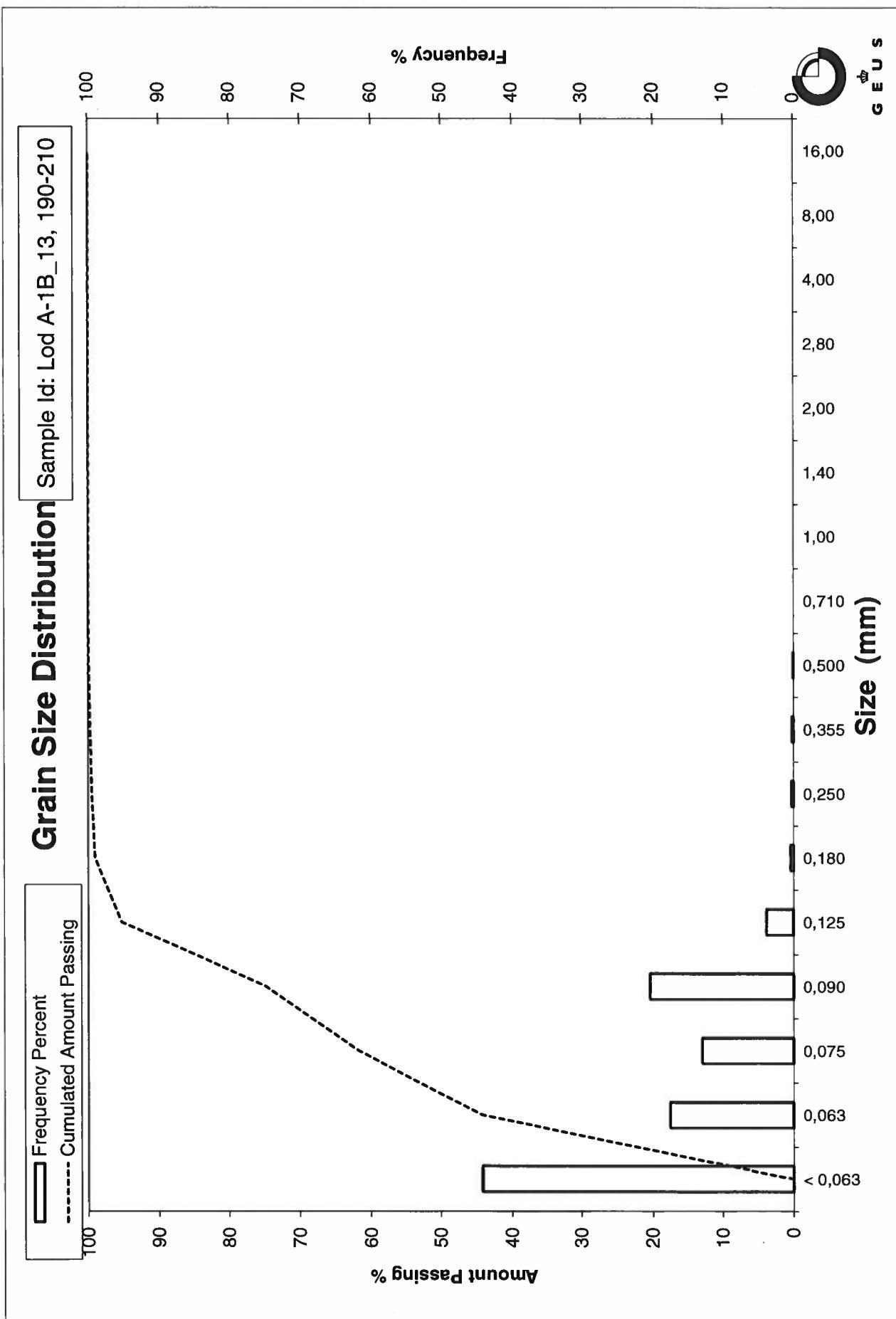
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_13, 250-270
Lab. Id: 200744
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 104,13 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	3,00	2,88	97,12
4,00	-2,00	0,65	0,62	96,49
2,80	-1,49	0,18	0,17	96,32
2,00	-1,00	0,45	0,43	95,89
1,40	-0,49	0,46	0,44	95,45
1,00	0,00	1,53	1,47	93,98
0,710	0,49	2,64	2,54	91,44
0,500	1,00	5,05	4,85	86,59
0,355	1,49	8,63	8,29	78,31
0,250	2,00	23,08	22,16	56,14
0,180	2,47	29,25	28,09	28,05
0,125	3,00	18,22	17,50	10,55
0,090	3,47	4,90	4,71	5,85
0,075	3,74	1,20	1,15	4,70
0,063	3,99	0,82	0,79	3,91
< 0,063	> 3,99	4,07	3,91	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 3,91
Sand, fine	(0,063 mm - 0,200 mm): 32,17
Sand, medium	(0,2 mm - 0,6 mm): 52,83
Sand, coarse	(0,6 mm - 2 mm): 6,99
Gravel	(> 2 mm): 4,11
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,28	-0,35
16%	84%	0,45	1,14
25%	75%	0,34	1,56
40%	60%	0,27	1,90
Median 50%	50%	0,23	2,09
75%	25%	0,17	2,55
84%	16%	0,14	2,81
90%	10%	0,12	3,05
95%	5%	0,08	3,66

Moments Statistics

Mean	2,01
Sorting	1,03
Skewness	-0,18
Kurtosis	1,66
Uniformity Coefficient	2,22

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

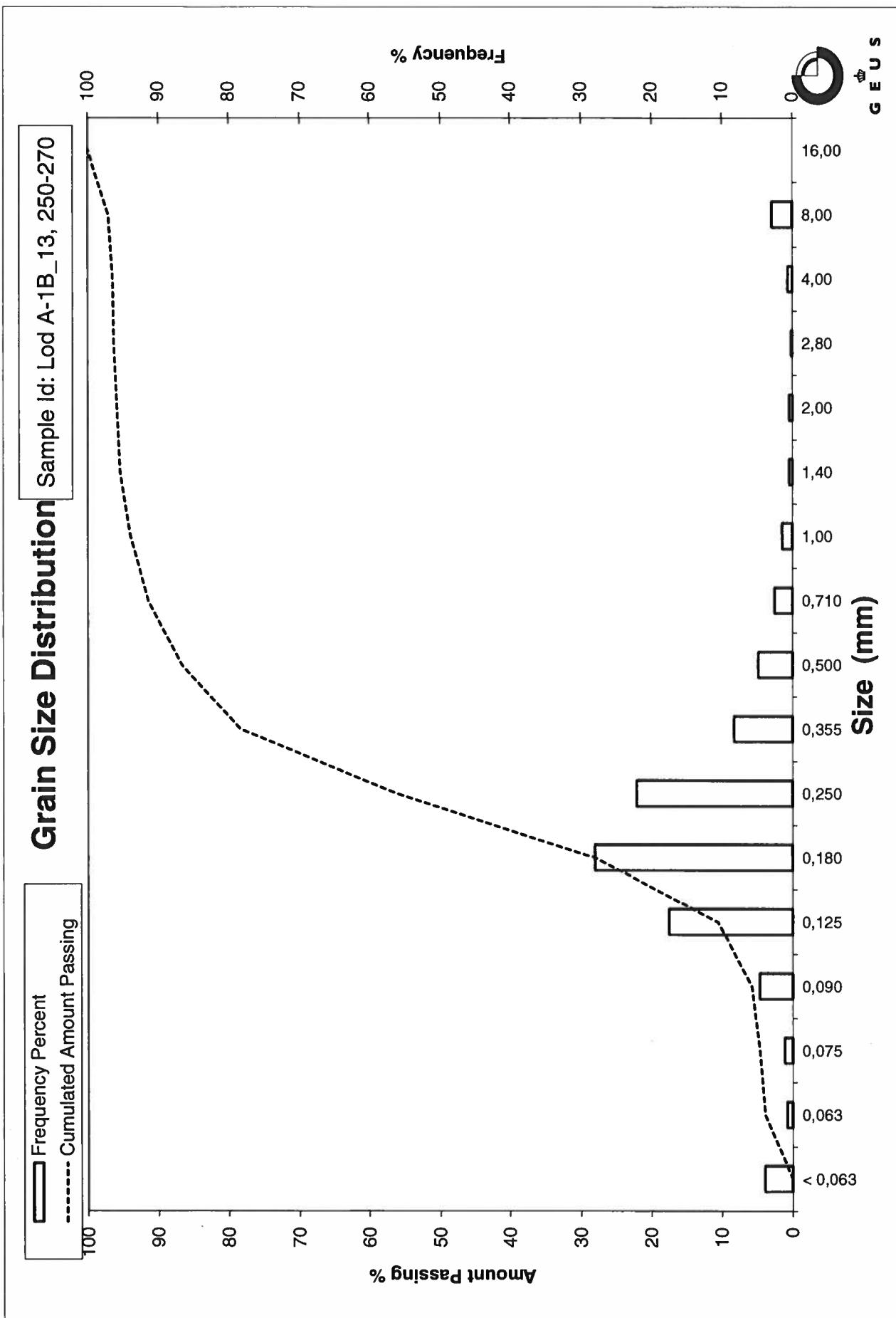
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_14, 0-20
Lab. Id: 200745
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 100,22 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,11	0,11	99,89
2,80	-1,49	0,25	0,25	99,64
2,00	-1,00	0,13	0,13	99,51
1,40	-0,49	0,18	0,18	99,33
1,00	0,00	0,44	0,44	98,89
0,710	0,49	1,32	1,32	97,58
0,500	1,00	10,90	10,88	86,70
0,355	1,49	44,33	44,23	42,47
0,250	2,00	31,05	30,98	11,48
0,180	2,47	4,04	4,03	7,45
0,125	3,00	2,38	2,37	5,08
0,090	3,47	1,93	1,93	3,15
0,075	3,74	0,58	0,58	2,57
0,063	3,99	0,44	0,44	2,14
< 0,063	> 3,99	2,14	2,14	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 2,14
Sand, fine	(0,063 mm - 0,200 mm): 6,47
Sand, medium	(0,2 mm - 0,6 mm): 83,27
Sand, coarse	(0,6 mm - 2 mm): 7,63
Gravel	(> 2 mm): 0,49
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,66	0,60
16%	84%	0,49	1,03
25%	75%	0,46	1,12
40%	60%	0,41	1,28
Median 50%	50%	0,38	1,40
75%	25%	0,30	1,76
84%	16%	0,27	1,91
90%	10%	0,22	2,16
95%	5%	0,12	3,02

Moments Statistics

Mean	1,45
Sorting	0,59
Skewness	0,25
Kurtosis	1,54
Uniformity Coefficient	1,84

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

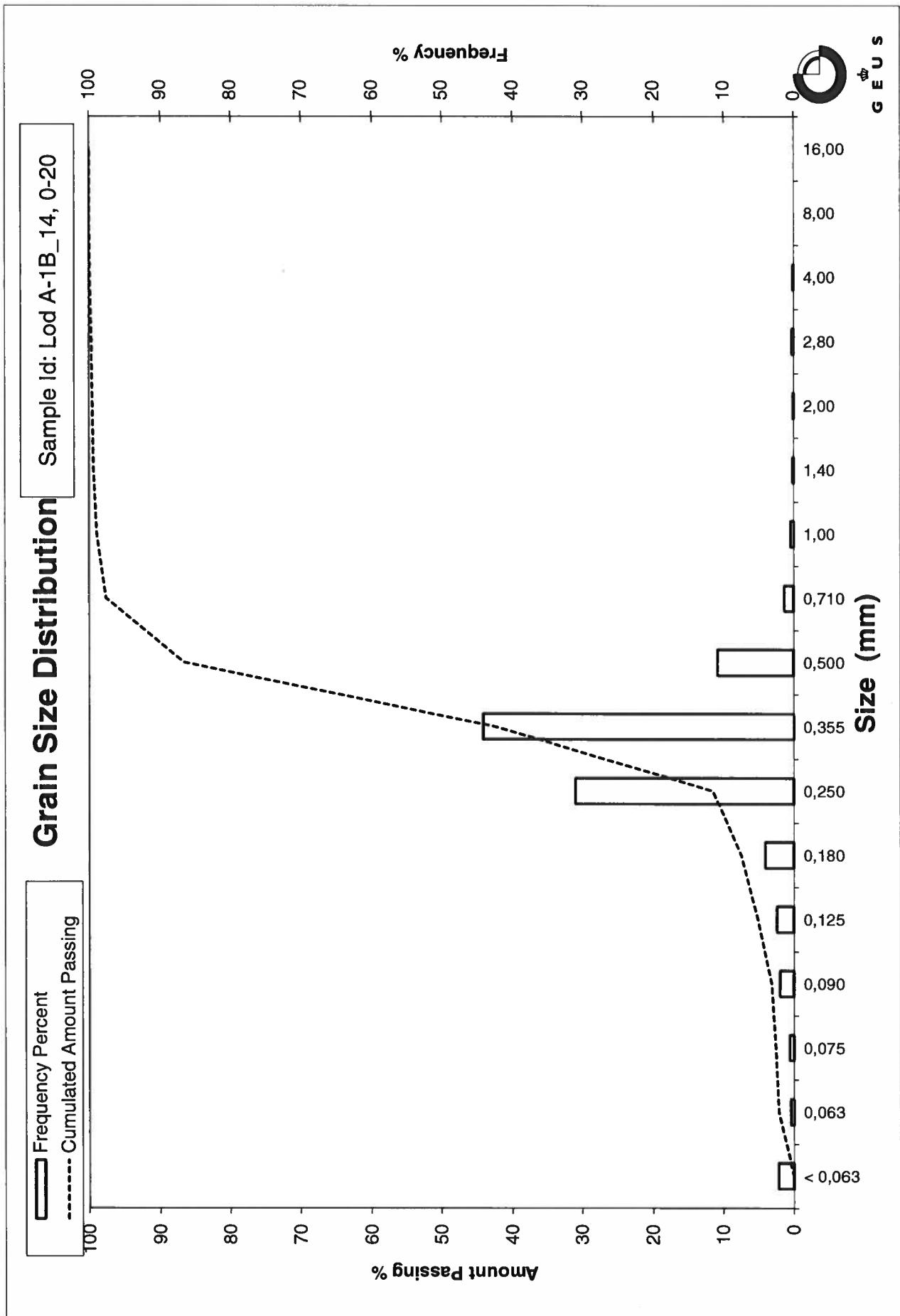
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_14, 90-110
Lab. Id: 200746
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 101,84 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,15	0,15	99,85
2,00	-1,00	0,02	0,02	99,83
1,40	-0,49	0,01	0,01	99,82
1,00	0,00	0,40	0,39	99,43
0,710	0,49	1,48	1,45	97,98
0,500	1,00	18,23	17,90	80,08
0,355	1,49	52,20	51,26	28,82
0,250	2,00	21,74	21,35	7,47
0,180	2,47	2,89	2,84	4,63
0,125	3,00	1,13	1,11	3,53
0,090	3,47	1,06	1,04	2,48
0,075	3,74	0,44	0,43	2,05
0,063	3,99	0,28	0,27	1,78
< 0,063	> 3,99	1,81	1,78	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,78
Sand, fine	(0,063 mm - 0,200 mm): 3,67
Sand, medium	(0,2 mm - 0,6 mm): 83,16
Sand, coarse	(0,6 mm - 2 mm): 11,23
Gravel	(> 2 mm): 0,17
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,68	0,57
16%	84%	0,55	0,87
25%	75%	0,49	1,04
40%	60%	0,44	1,17
Median 50%	50%	0,41	1,27
75%	25%	0,34	1,57
84%	16%	0,29	1,78
90%	10%	0,26	1,93
95%	5%	0,19	2,40

Moments Statistics

Mean	1,31
Sorting	0,50
Skewness	0,18
Kurtosis	1,42
Uniformity Coefficient	1,69

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

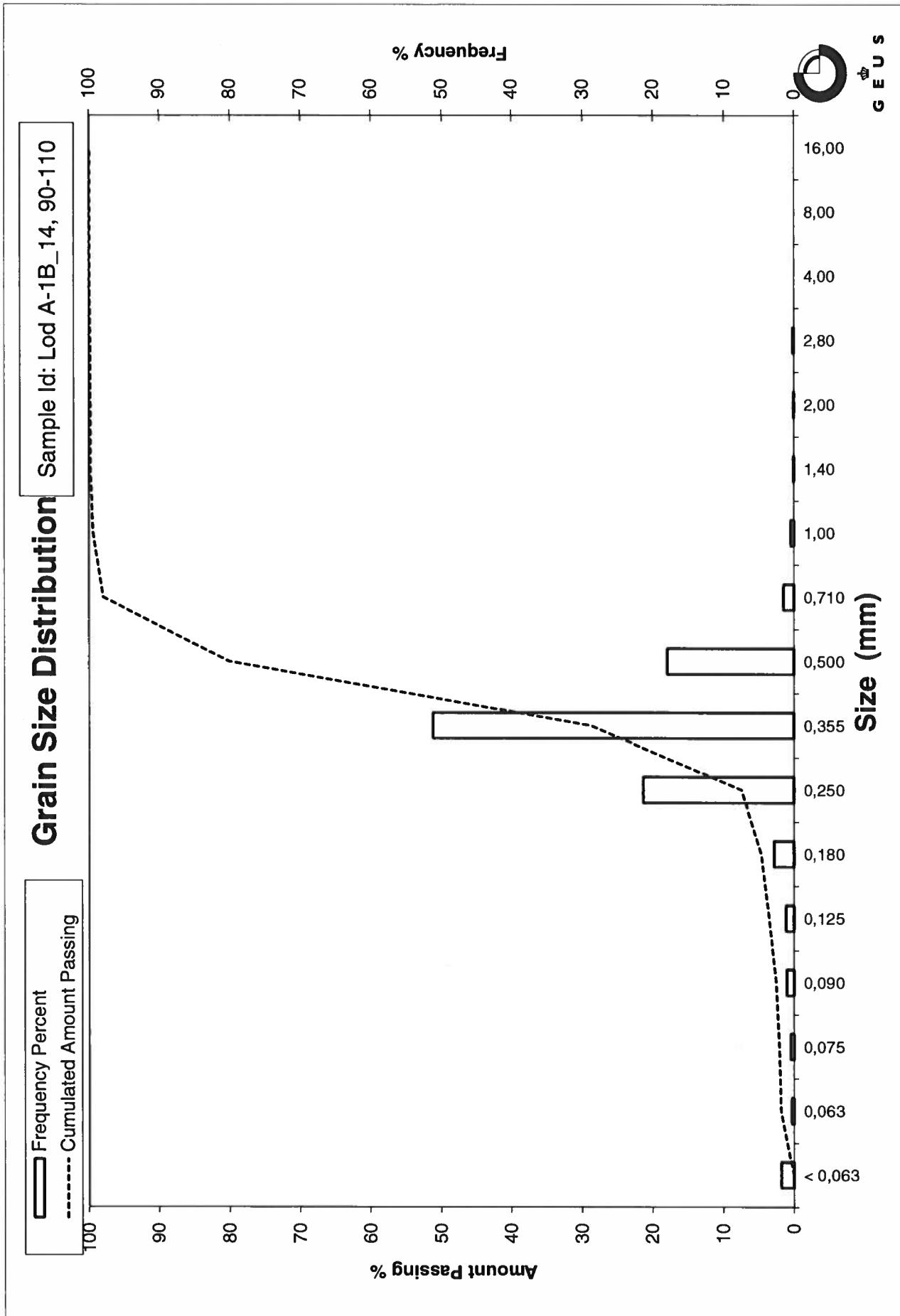
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2*\phi_{50\%}) / (2*(\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2*\phi_{50\%}) / (2*(\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_14, 160-180
Lab. Id: 200747
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 102 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,06	0,06	99,94
0,710	0,49	0,09	0,09	99,85
0,500	1,00	0,86	0,84	99,01
0,355	1,49	39,51	38,74	60,27
0,250	2,00	54,39	53,32	6,95
0,180	2,47	5,53	5,42	1,53
0,125	3,00	0,72	0,71	0,82
0,090	3,47	0,08	0,08	0,75
0,075	3,74	0,00	0,00	0,75
0,063	3,99	0,00	0,00	0,75
< 0,063	> 3,99	0,76	0,75	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,75
Sand, fine	(0,063 mm - 0,200 mm): 2,33
Sand, medium	(0,2 mm - 0,6 mm): 96,33
Sand, coarse	(0,6 mm - 2 mm): 0,59
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,48	1,04
16%	84%	0,44	1,17
25%	75%	0,41	1,29
40%	60%	0,35	1,50
Median 50%	50%	0,33	1,58
75%	25%	0,29	1,81
84%	16%	0,27	1,90
90%	10%	0,26	1,97
95%	5%	0,22	2,15

Moments Statistics

Mean	1,55
Sorting	0,35
Skewness	-0,04
Kurtosis	0,87
Uniformity Coefficient	1,38

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

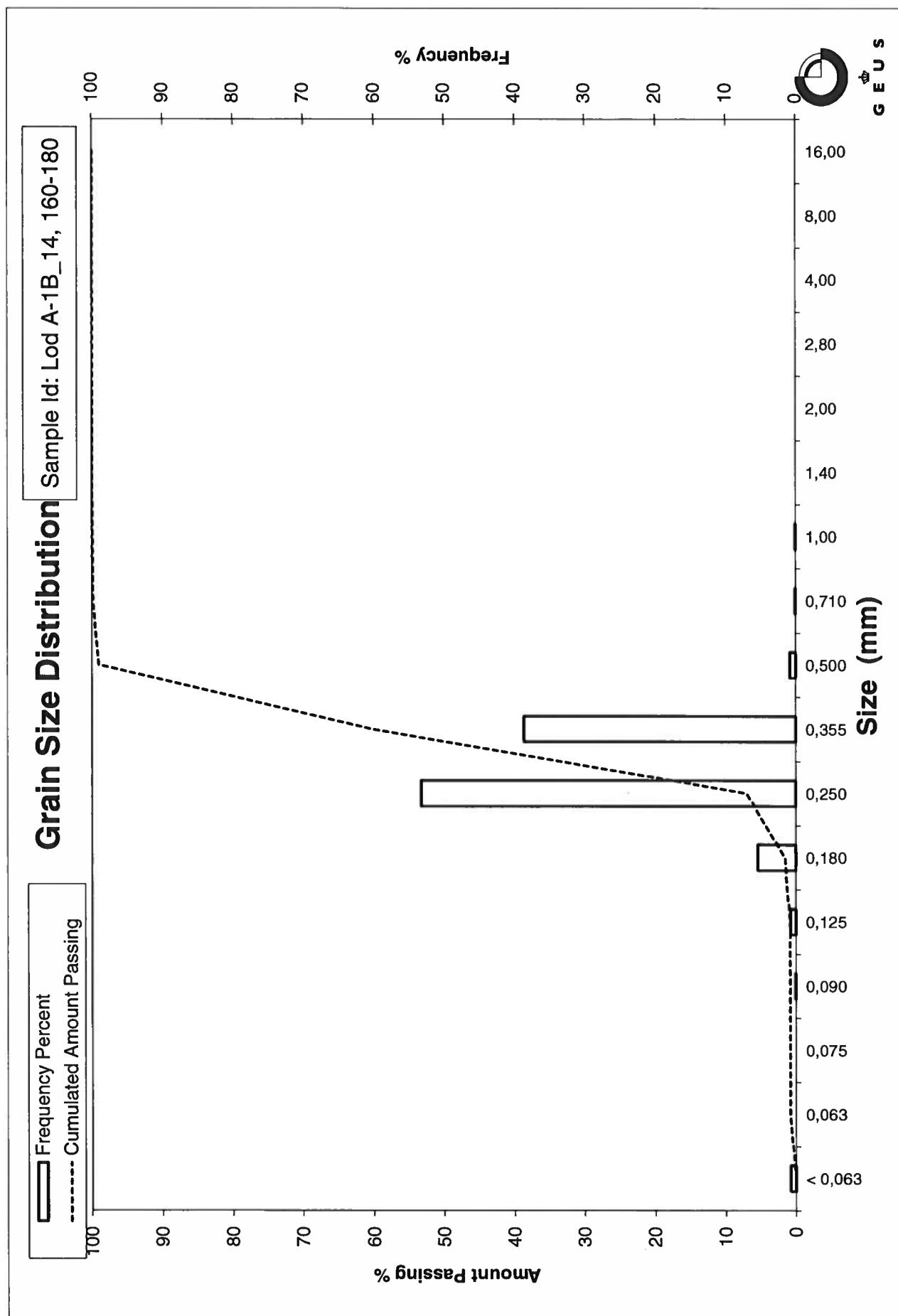
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_15, 0-20
Lab. Id: 200748
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 102,16 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,22	0,22	99,78
2,80	-1,49	0,69	0,68	99,11
2,00	-1,00	0,93	0,91	98,20
1,40	-0,49	0,81	0,79	97,41
1,00	0,00	2,11	2,07	95,34
0,710	0,49	2,96	2,90	92,44
0,500	1,00	8,44	8,26	84,18
0,355	1,49	21,11	20,66	63,52
0,250	2,00	36,56	35,79	27,73
0,180	2,47	21,09	20,64	7,09
0,125	3,00	4,65	4,55	2,54
0,090	3,47	1,06	1,04	1,50
0,075	3,74	0,18	0,18	1,32
0,063	3,99	0,09	0,09	1,23
< 0,063	> 3,99	1,26	1,23	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,23
Sand, fine	(0,063 mm - 0,200 mm): 11,75
Sand, medium	(0,2 mm - 0,6 mm): 75,13
Sand, coarse	(0,6 mm - 2 mm): 10,08
Gravel	(> 2 mm): 1,80
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,97	0,05
16%	84%	0,50	1,00
25%	75%	0,44	1,20
40%	60%	0,34	1,54
Median 50%	50%	0,32	1,67
75%	25%	0,24	2,05
84%	16%	0,21	2,25
90%	10%	0,19	2,40
95%	5%	0,15	2,69

Moments Statistics

Mean	1,64
Sorting	0,71
Skewness	-0,14
Kurtosis	1,27
Uniformity Coefficient	1,82

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)

Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)

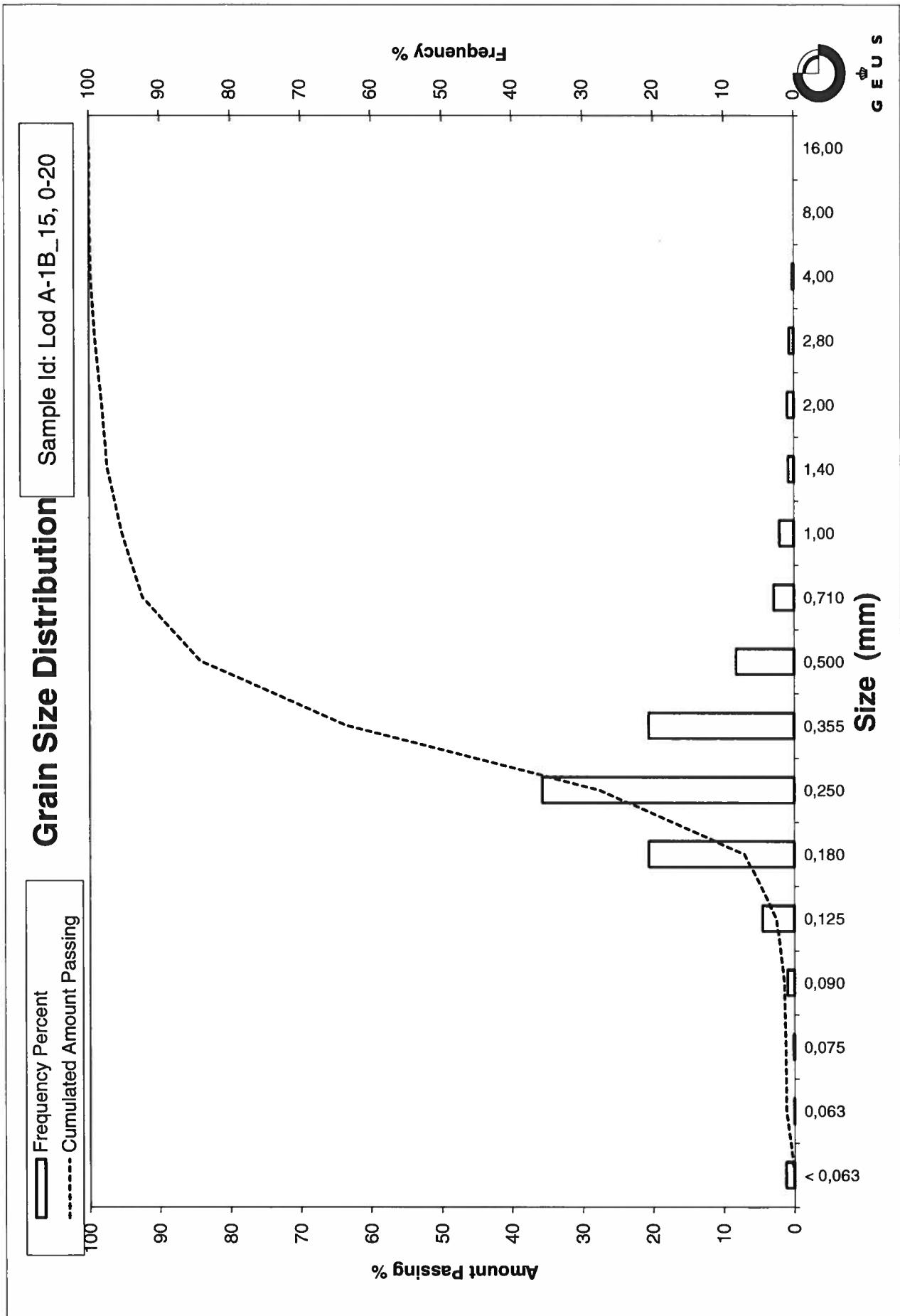
Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)

Skewness $(\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_15, 90-110
Lab. Id: 200749
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks: >16mm heraf 97g >32mm



Total Weight 735,59 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	316,33	43,00	57,00
8,00	-3,00	126,40	17,18	39,81
4,00	-2,00	40,69	5,53	34,28
2,80	-1,49	21,22	2,88	31,40
2,00	-1,00	15,20	2,07	29,33
1,40	-0,49	13,04	1,77	27,56
1,00	0,00	18,67	2,54	25,02
0,710	0,49	14,72	2,00	23,02
0,500	1,00	25,54	3,47	19,55
0,355	1,49	45,10	6,13	13,41
0,250	2,00	65,88	8,96	4,46
0,180	2,47	21,12	2,87	1,59
0,125	3,00	3,74	0,51	1,08
0,090	3,47	1,28	0,17	0,91
0,075	3,74	0,37	0,05	0,85
0,063	3,99	0,23	0,03	0,82
< 0,063	> 3,99	6,05	0,82	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,82
Sand, fine	(0,063 mm - 0,200 mm): 1,59
Sand, medium	(0,2 mm - 0,6 mm): 18,79
Sand, coarse	(0,6 mm - 2 mm): 8,13
Gravel	(> 2 mm): 70,67
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	-----	-----
25%	75%	-----	-----
40%	60%	-----	-----
Median 50%	50%	12,74	-3,67
75%	25%	1,00	0,00
84%	16%	0,42	1,26
90%	10%	0,31	1,67
95%	5%	0,26	1,96

Moments Statistics

Mean	-1,20
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	-----

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

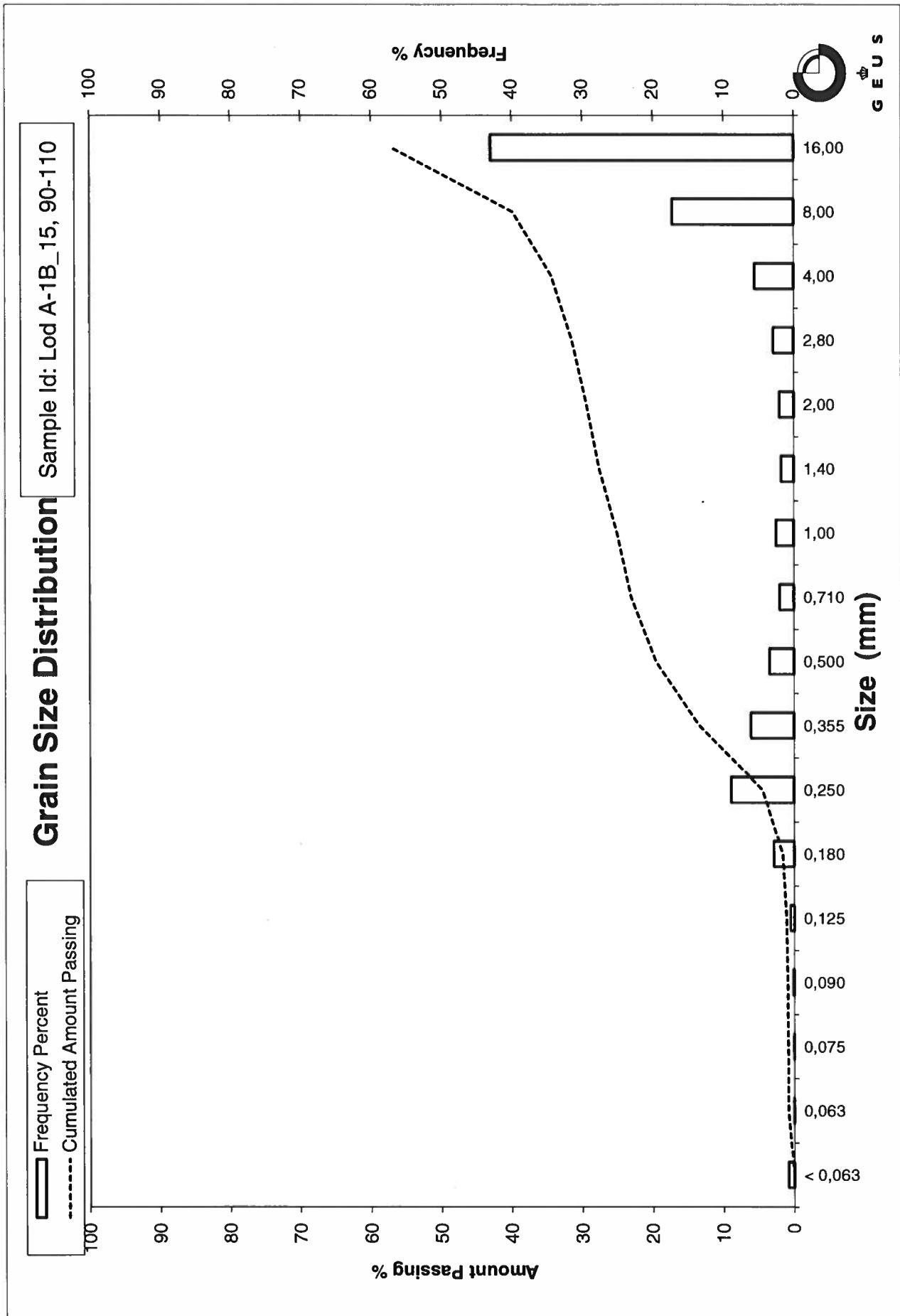
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod A-1B_15, 200-220
Lab. Id: 200750
Projekt: Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 97,94 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,03	0,03	99,97
2,80	-1,49	0,05	0,05	99,92
2,00	-1,00	0,02	0,02	99,90
1,40	-0,49	0,05	0,05	99,85
1,00	0,00	0,17	0,17	99,67
0,710	0,49	0,91	0,93	98,74
0,500	1,00	7,46	7,62	91,13
0,355	1,49	13,64	13,93	77,20
0,250	2,00	19,42	19,83	57,37
0,180	2,47	33,75	34,46	22,91
0,125	3,00	15,90	16,23	6,68
0,090	3,47	1,98	2,02	4,66
0,075	3,74	0,32	0,33	4,33
0,063	3,99	0,22	0,22	4,10
< 0,063	> 3,99	4,02	4,10	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 4,10
Sand, fine	(0,063 mm - 0,200 mm): 28,65
Sand, medium	(0,2 mm - 0,6 mm): 62,00
Sand, coarse	(0,6 mm - 2 mm): 5,14
Gravel	(> 2 mm): 0,10
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve 5%	95%	0,61	0,72
16%	84%	0,43	1,23
25%	75%	0,34	1,54
40%	60%	0,26	1,92
Median 50%	50%	0,24	2,09
75%	25%	0,18	2,44
84%	16%	0,16	2,67
90%	10%	0,14	2,88
95%	5%	0,10	3,38

Moments Statistics

Mean	2,00
Sorting	0,76
Skewness	-0,11
Kurtosis	1,21
Uniformity Coefficient	1,94

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

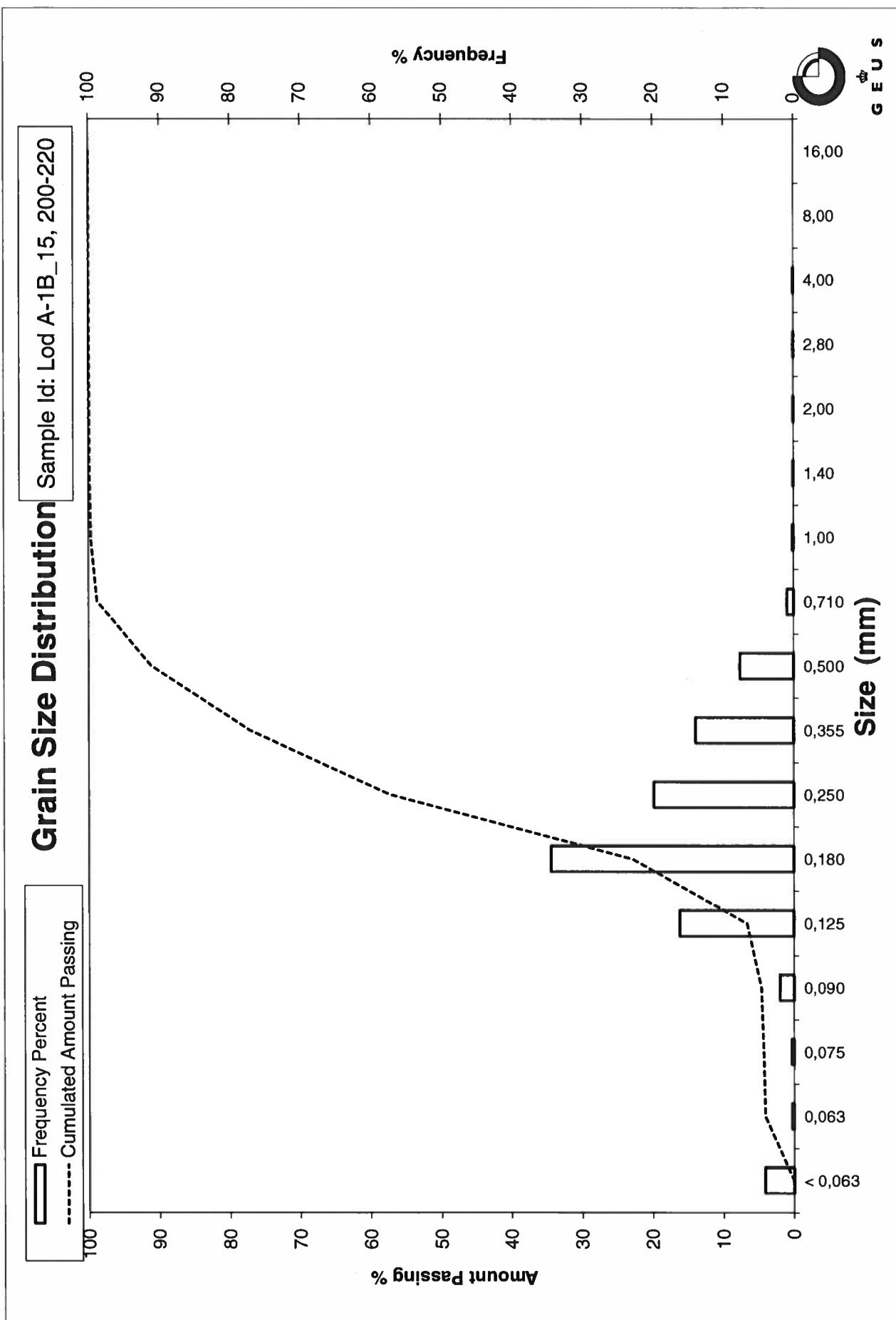
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_16, 0-20
Lab. Id: 200751
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks: 8mm består af skaller



Total Weight 107,17 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	3,03	2,83	97,17
4,00	-2,00	1,20	1,12	96,05
2,80	-1,49	1,82	1,70	94,35
2,00	-1,00	2,19	2,04	92,31
1,40	-0,49	2,00	1,87	90,45
1,00	0,00	3,52	3,28	87,16
0,710	0,49	4,87	4,54	82,62
0,500	1,00	15,39	14,36	68,26
0,355	1,49	30,45	28,41	39,84
0,250	2,00	32,03	29,89	9,96
0,180	2,47	8,80	8,21	1,74
0,125	3,00	1,49	1,39	0,35
0,090	3,47	0,17	0,16	0,20
0,075	3,74	0,00	0,00	0,20
0,063	3,99	0,00	0,00	0,20
< 0,063	> 3,99	0,21	0,20	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,20
Sand, fine	(0,063 mm - 0,200 mm):	3,90
Sand, medium	(0,2 mm - 0,6 mm):	71,00
Sand, coarse	(0,6 mm - 2 mm):	17,22
Gravel	(> 2 mm):	7,69
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	3,26	-1,70
16%	84%	0,80	0,33
25%	75%	0,60	0,74
40%	60%	0,46	1,13
Median 50%	50%	0,41	1,30
75%	25%	0,30	1,72
84%	16%	0,27	1,88
90%	10%	0,25	2,00
95%	5%	0,21	2,27

Moments Statistics

Mean	1,17
Sorting	0,99
Skewness	-0,38
Kurtosis	1,66
Uniformity Coefficient	1,83

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

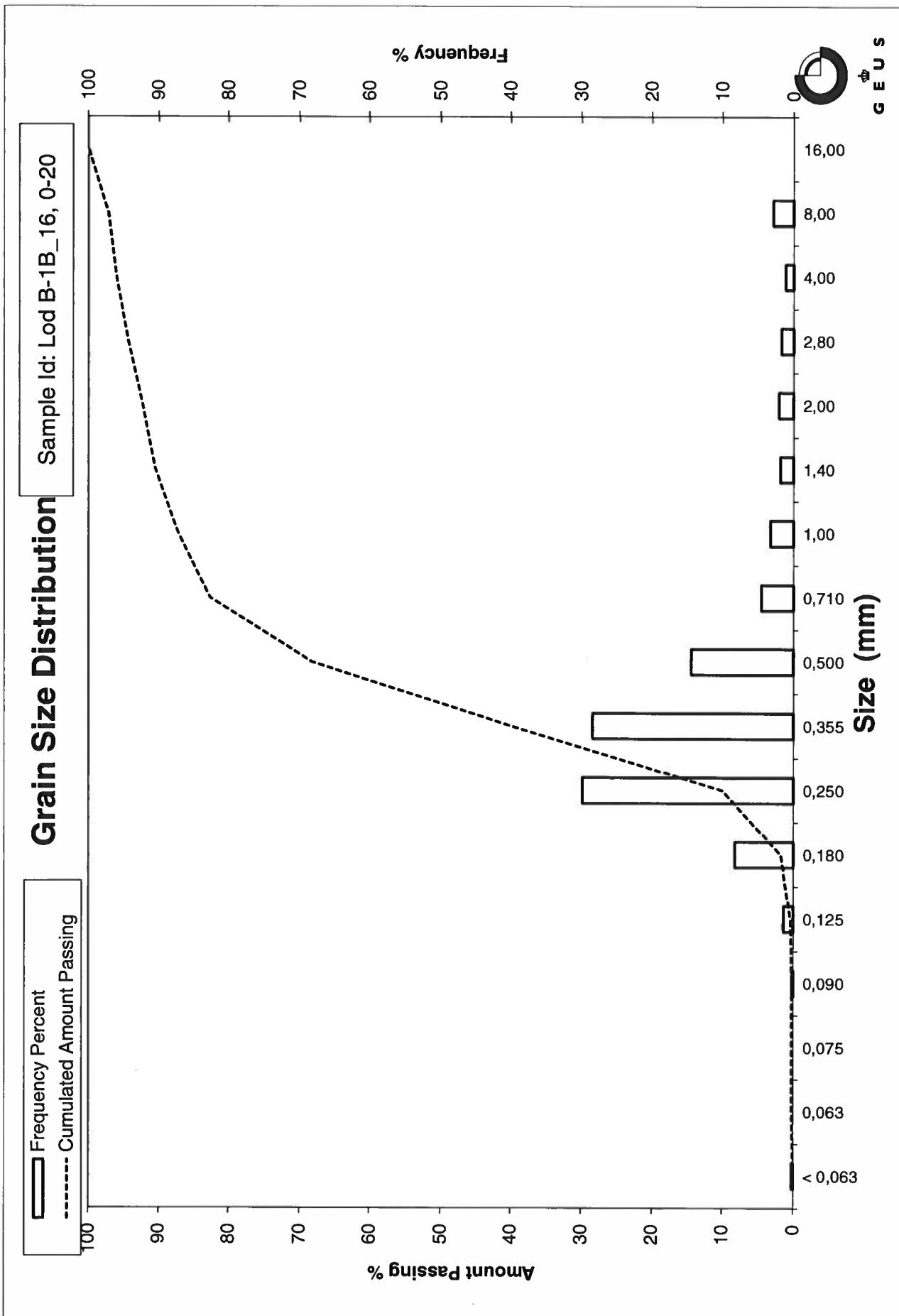
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_16, 100-120
Lab. Id: 200752
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 104,93 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,10	0,10	99,90
2,80	-1,49	0,43	0,41	99,49
2,00	-1,00	0,33	0,31	99,18
1,40	-0,49	0,59	0,56	98,62
1,00	0,00	1,08	1,03	97,59
0,710	0,49	2,20	2,10	95,49
0,500	1,00	9,70	9,24	86,25
0,355	1,49	26,57	25,32	60,93
0,250	2,00	44,87	42,76	18,16
0,180	2,47	15,24	14,52	3,64
0,125	3,00	2,72	2,59	1,05
0,090	3,47	0,36	0,34	0,71
0,075	3,74	0,07	0,07	0,64
0,063	3,99	0,03	0,03	0,61
< 0,063	> 3,99	0,64	0,61	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,61
Sand, fine	(0,063 mm - 0,200 mm): 7,18
Sand, medium	(0,2 mm - 0,6 mm): 82,86
Sand, coarse	(0,6 mm - 2 mm): 8,53
Gravel	(> 2 mm): 0,82
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,70	0,52
16%	84%	0,49	1,04
25%	75%	0,44	1,20
40%	60%	0,35	1,50
Median 50%	50%	0,33	1,61
75%	25%	0,27	1,91
84%	16%	0,24	2,06
90%	10%	0,21	2,25
95%	5%	0,19	2,42

Moments Statistics

Mean	1,57
Sorting	0,54
Skewness	-0,13
Kurtosis	1,10
Uniformity Coefficient	1,67

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

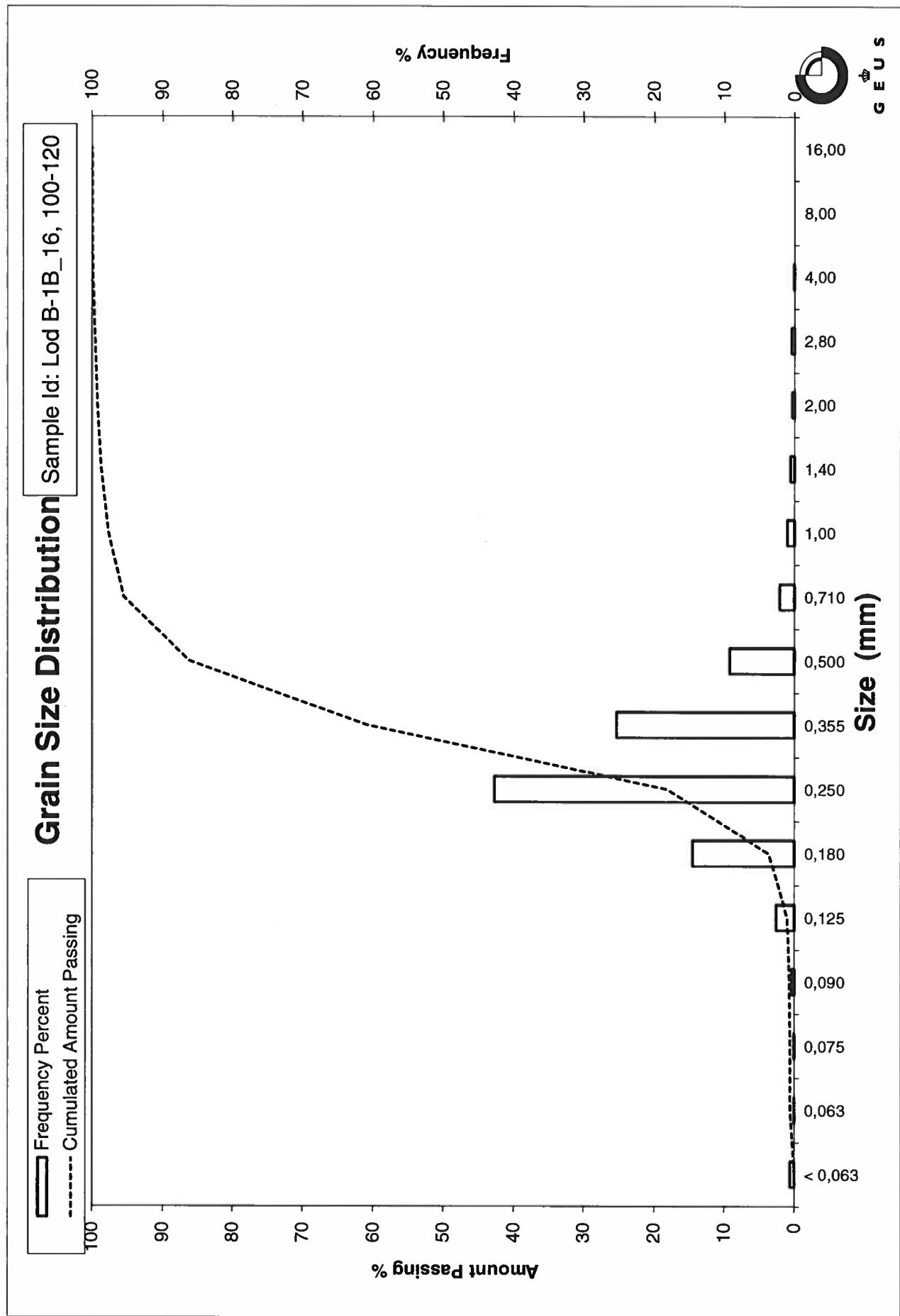
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_16, 200-220
Lab. Id: 200753
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 99,18 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,68	0,69	99,31
4,00	-2,00	0,00	0,00	99,31
2,80	-1,49	0,01	0,01	99,30
2,00	-1,00	0,06	0,06	99,24
1,40	-0,49	0,15	0,15	99,09
1,00	0,00	0,30	0,30	98,79
0,710	0,49	0,71	0,72	98,07
0,500	1,00	3,64	3,67	94,40
0,355	1,49	18,49	18,64	75,76
0,250	2,00	44,31	44,68	31,08
0,180	2,47	23,71	23,91	7,18
0,125	3,00	5,92	5,97	1,21
0,090	3,47	0,86	0,87	0,34
0,075	3,74	0,19	0,19	0,15
0,063	3,99	0,10	0,10	0,05
< 0,063	> 3,99	0,05	0,05	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,05
Sand, fine	(0,063 mm - 0,200 mm): 13,96
Sand, medium	(0,2 mm - 0,6 mm): 82,14
Sand, coarse	(0,6 mm - 2 mm): 3,09
Gravel	(> 2 mm): 0,76
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve 5%	95%	0,53	0,90
16%	84%	0,42	1,25
25%	75%	0,35	1,50
40%	60%	0,32	1,65
Median 50%	50%	0,29	1,76
75%	25%	0,23	2,11
84%	16%	0,21	2,28
90%	10%	0,19	2,41
95%	5%	0,16	2,64

Moments Statistics

Mean	1,77
Sorting	0,52
Skewness	0,01
Kurtosis	1,18
Uniformity Coefficient	1,69

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6 \text{ (Folk and Ward 1957)}$$

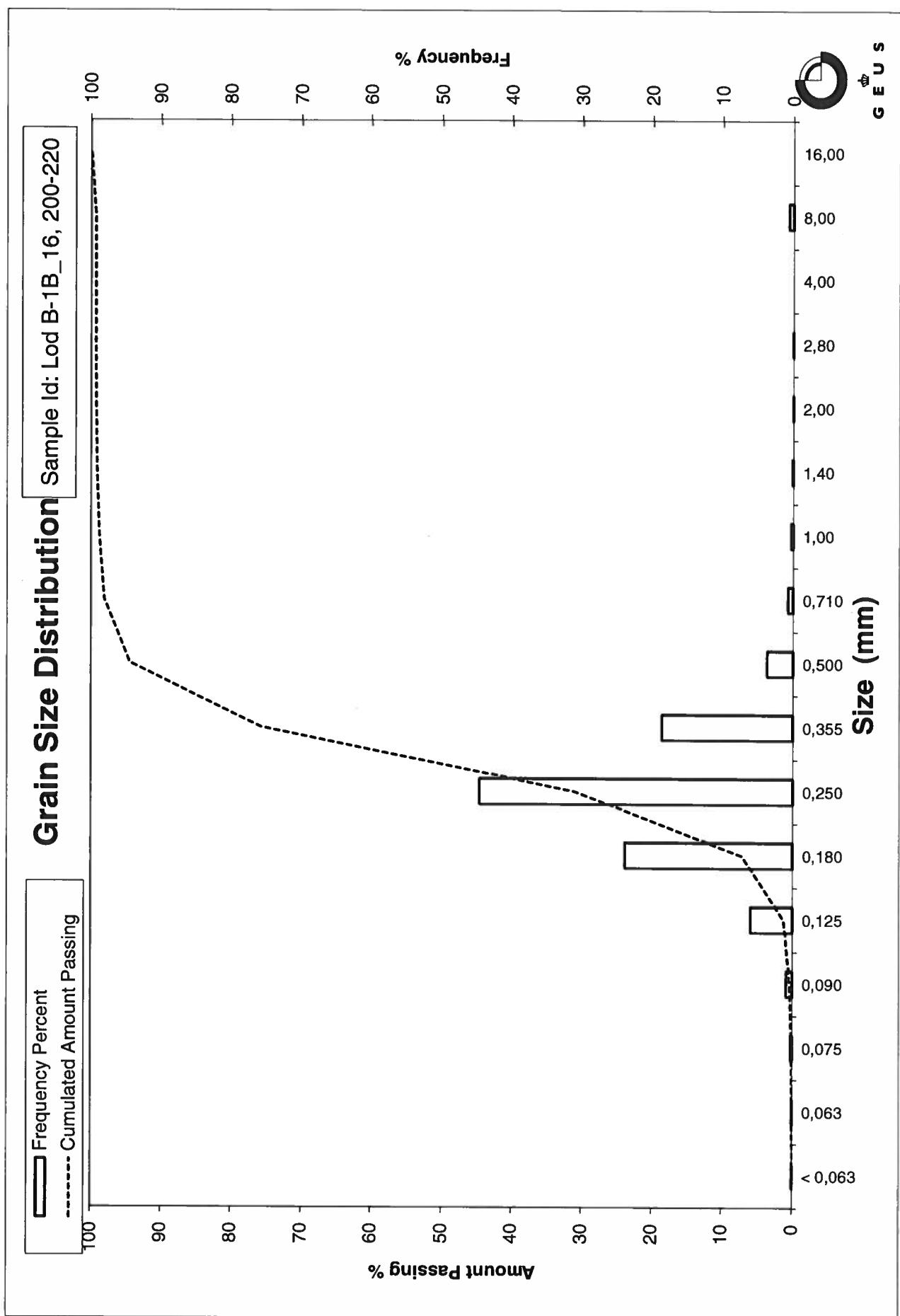
$$\text{Kurtosis } (\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi_{16\%} + \phi_{84\%} - 2 * \phi_{50\%}) / (2 * (\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2 * \phi_{50\%}) / (2 * (\phi_{95\%} - \phi_{5\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_16, 300-320
Lab. Id: 200754
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 99,5 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,57	1,58	98,42
4,00	-2,00	1,21	1,22	97,21
2,80	-1,49	0,40	0,40	96,80
2,00	-1,00	0,73	0,73	96,07
1,40	-0,49	0,70	0,70	95,37
1,00	0,00	0,84	0,84	94,52
0,710	0,49	1,65	1,66	92,86
0,500	1,00	7,01	7,05	85,82
0,355	1,49	17,23	17,32	68,50
0,250	2,00	34,06	34,23	34,27
0,180	2,47	24,59	24,71	9,56
0,125	3,00	7,34	7,38	2,18
0,090	3,47	1,04	1,05	1,14
0,075	3,74	0,13	0,13	1,01
0,063	3,99	0,04	0,04	0,96
< 0,063	> 3,99	0,96	0,96	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,96
Sand, fine	(0,063 mm - 0,200 mm): 15,65
Sand, medium	(0,2 mm - 0,6 mm): 72,56
Sand, coarse	(0,6 mm - 2 mm): 6,90
Gravel	(> 2 mm): 3,93
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,23	-0,29
16%	84%	0,48	1,04
25%	75%	0,41	1,29
40%	60%	0,33	1,60
Median 50%	50%	0,30	1,75
75%	25%	0,22	2,16
84%	16%	0,20	2,33
90%	10%	0,18	2,46
95%	5%	0,15	2,78

Moments Statistics

Mean	1,71
Sorting	0,79
Skewness	-0,21
Kurtosis	1,44
Uniformity Coefficient	1,81

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

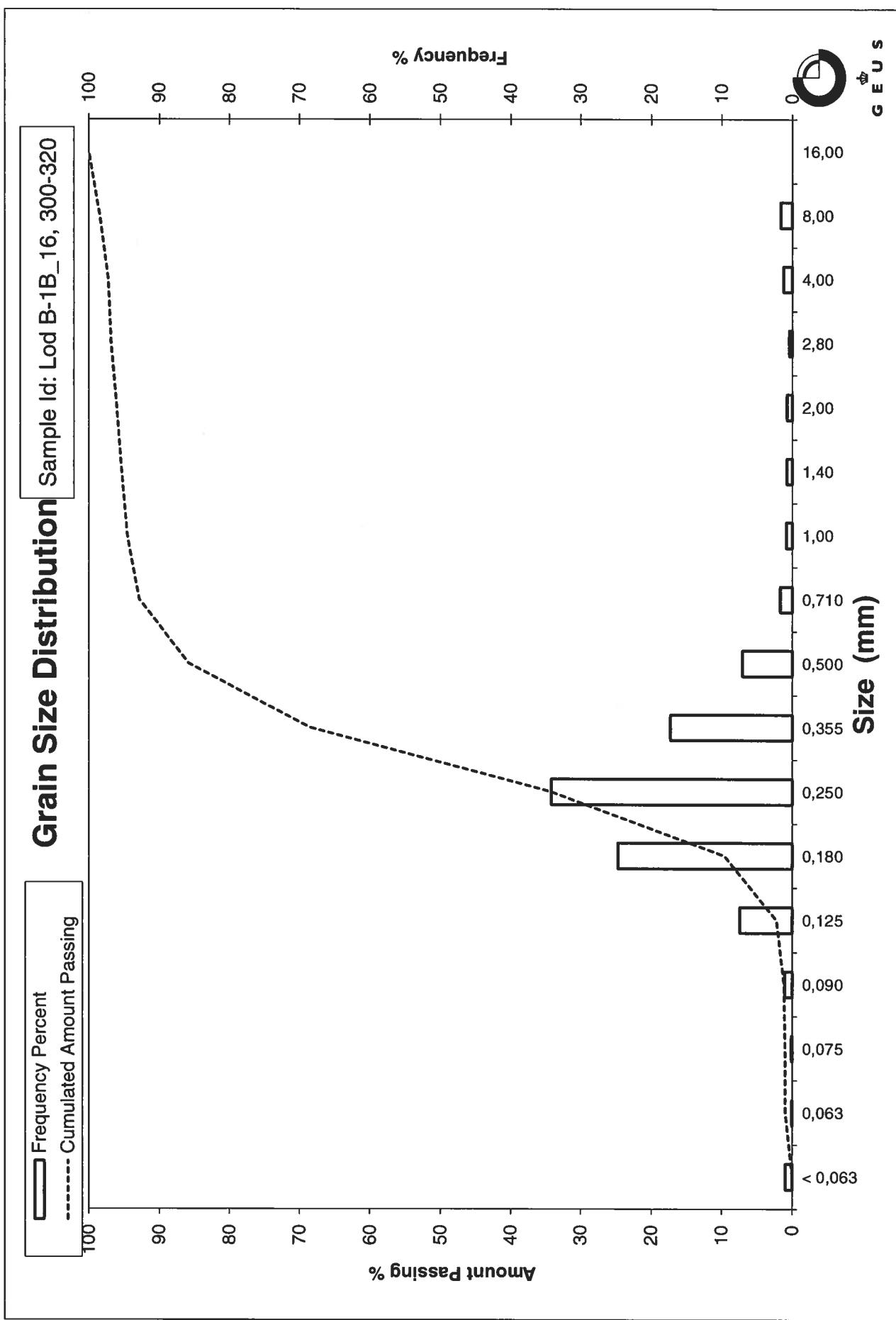
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_16, 400-420
Lab. Id: 200755
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 95,31 g

Size Fractions

Sieve Analysis	
Gravel	
Sand	

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,00	0,00	100,00
0,710	0,49	0,02	0,02	99,98
0,500	1,00	0,09	0,09	99,88
0,355	1,49	0,72	0,76	99,13
0,250	2,00	10,67	11,20	87,93
0,180	2,47	48,65	51,04	36,89
0,125	3,00	27,39	28,74	8,15
0,090	3,47	5,03	5,28	2,87
0,075	3,74	1,04	1,09	1,78
0,063	3,99	0,57	0,60	1,19
< 0,063	> 3,99	1,13	1,19	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,19
Sand, fine	(0,063 mm - 0,200 mm): 50,29
Sand, medium	(0,2 mm - 0,6 mm): 48,46
Sand, coarse	(0,6 mm - 2 mm): 0,07
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,32	1,66
16%	84%	0,24	2,03
25%	75%	0,23	2,11
40%	60%	0,21	2,24
Median 50%	50%	0,20	2,34
75%	25%	0,16	2,67
84%	16%	0,14	2,84
90%	10%	0,13	2,96
95%	5%	0,10	3,26

Moments Statistics

Mean	2,40
Sorting	0,44
Skewness	0,20
Kurtosis	1,17
Uniformity Coefficient	1,65

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

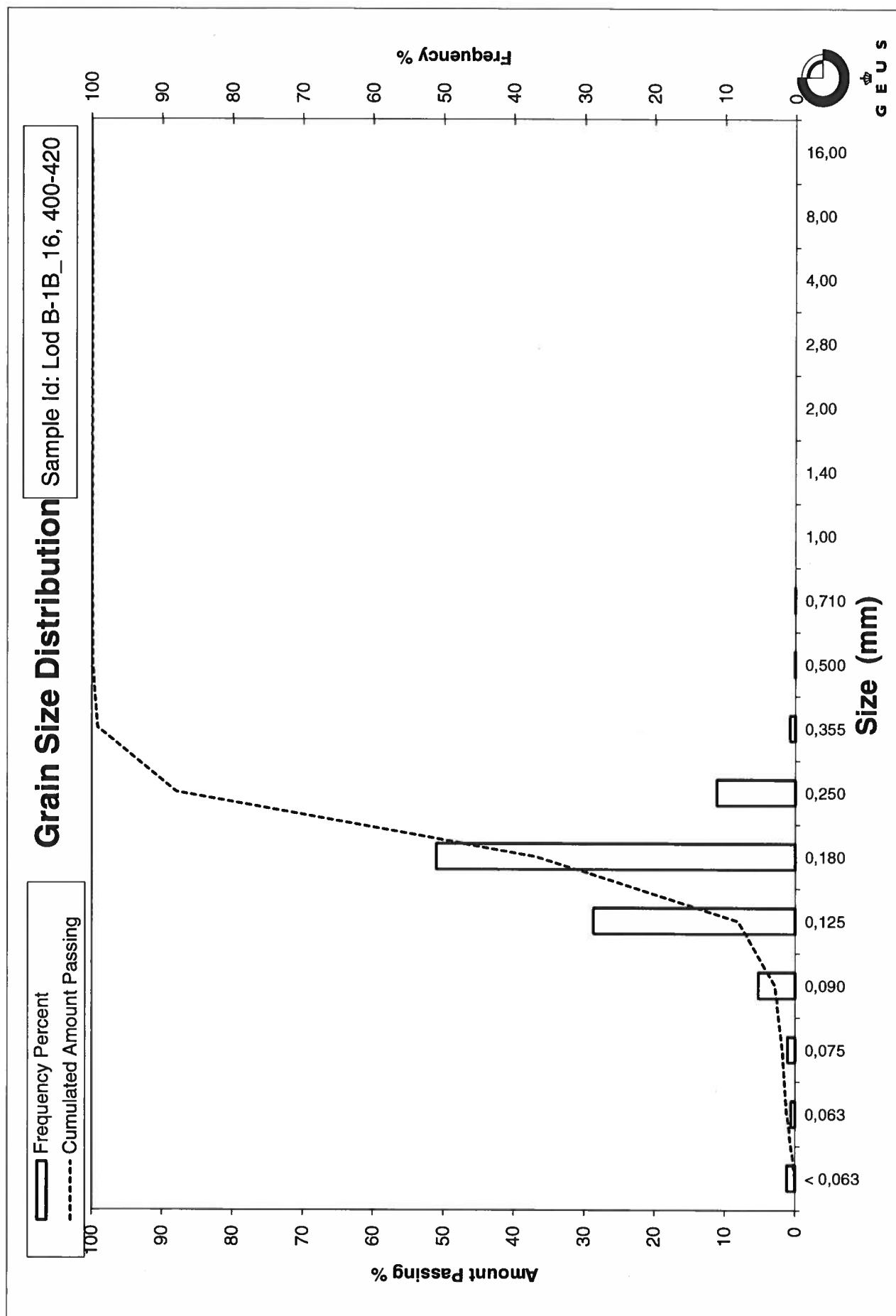
Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3$ (Folk and Ward 1957)
 Sorting $(\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6$ (Folk and Ward 1957)
 Kurtosis $(\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%}))$ (Folk and Ward 1957)
 Skewness $(\phi_{16\%} + \phi_{84\%} - 2*\phi_{50\%}) / (2*(\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2*\phi_{50\%}) / (2*(\phi_{95\%} - \phi_{5\%}))$ (Folk and Ward 1957)
 Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgr-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_16, 460-480
Lab. Id: 200756
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 98,71 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,07	0,07	99,93
2,80	-1,49	0,18	0,18	99,75
2,00	-1,00	0,17	0,17	99,57
1,40	-0,49	0,27	0,27	99,30
1,00	0,00	0,56	0,57	98,73
0,710	0,49	1,07	1,08	97,65
0,500	1,00	4,37	4,43	93,22
0,355	1,49	10,21	10,34	82,88
0,250	2,00	28,76	29,14	53,74
0,180	2,47	34,38	34,83	18,91
0,125	3,00	14,25	14,44	4,48
0,090	3,47	2,66	2,69	1,78
0,075	3,74	0,36	0,36	1,42
0,063	3,99	0,15	0,15	1,27
< 0,063	> 3,99	1,25	1,27	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,27
Sand, fine	(0,063 mm - 0,200 mm):	27,60
Sand, medium	(0,2 mm - 0,6 mm):	66,47
Sand, coarse	(0,6 mm - 2 mm):	4,24
Gravel	(> 2 mm):	0,43
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,58	0,78
16%	84%	0,37	1,43
25%	75%	0,33	1,61
40%	60%	0,27	1,88
Median 50%	50%	0,24	2,04
75%	25%	0,19	2,38
84%	16%	0,17	2,57
90%	10%	0,15	2,78
95%	5%	0,13	2,98

Moments Statistics

Mean	2,01
Sorting	0,62
Skewness	-0,12
Kurtosis	1,18
Uniformity Coefficient	1,87

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

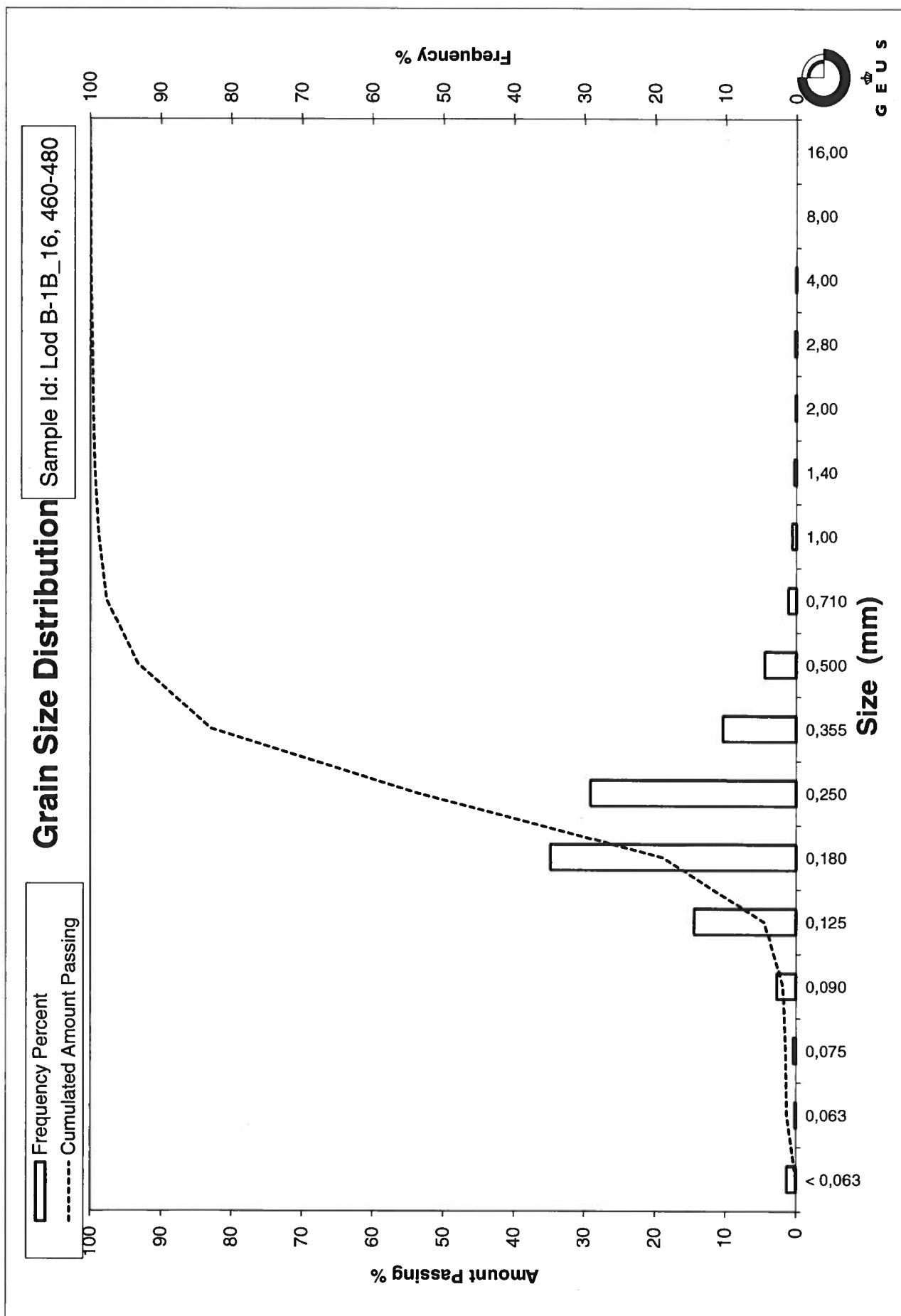
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d60\% / d10\%) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_17, 0-20
Lab. Id: 200757
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 341,82 g

Size Fractions

Sieve Analysis	
Gravel	
Sand	

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	6,73	1,97	98,03
8,00	-3,00	16,22	4,75	93,29
4,00	-2,00	23,01	6,73	86,55
2,80	-1,49	14,93	4,37	82,19
2,00	-1,00	18,09	5,29	76,89
1,40	-0,49	17,93	5,24	71,65
1,00	0,00	28,65	8,38	63,27
0,710	0,49	27,26	7,98	55,29
0,500	1,00	39,26	11,49	43,81
0,355	1,49	70,61	20,66	23,15
0,250	2,00	59,17	17,31	5,84
0,180	2,47	15,02	4,39	1,44
0,125	3,00	2,04	0,60	0,85
0,090	3,47	0,27	0,08	0,77
0,075	3,74	0,00	0,00	0,77
0,063	3,99	0,00	0,00	0,77
< 0,063	> 3,99	2,62	0,77	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,77
Sand, fine	(0,063 mm - 0,200 mm): 1,93
Sand, medium	(0,2 mm - 0,6 mm): 46,58
Sand, coarse	(0,6 mm - 2 mm): 27,62
Gravel	(> 2 mm): 23,11
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	10,89	-3,44
16%	84%	3,30	-1,72
25%	75%	1,78	-0,83
40%	60%	0,88	0,18
Median 50%	50%	0,61	0,71
75%	25%	0,37	1,44
84%	16%	0,31	1,68
90%	10%	0,28	1,86
95%	5%	0,24	2,08

Moments Statistics

Mean	0,22
Sorting	1,69
Skewness	-0,46
Kurtosis	0,99
Uniformity Coefficient	3,20

The analysis is executed according to DS 405.9
extended by sieves to the ½ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

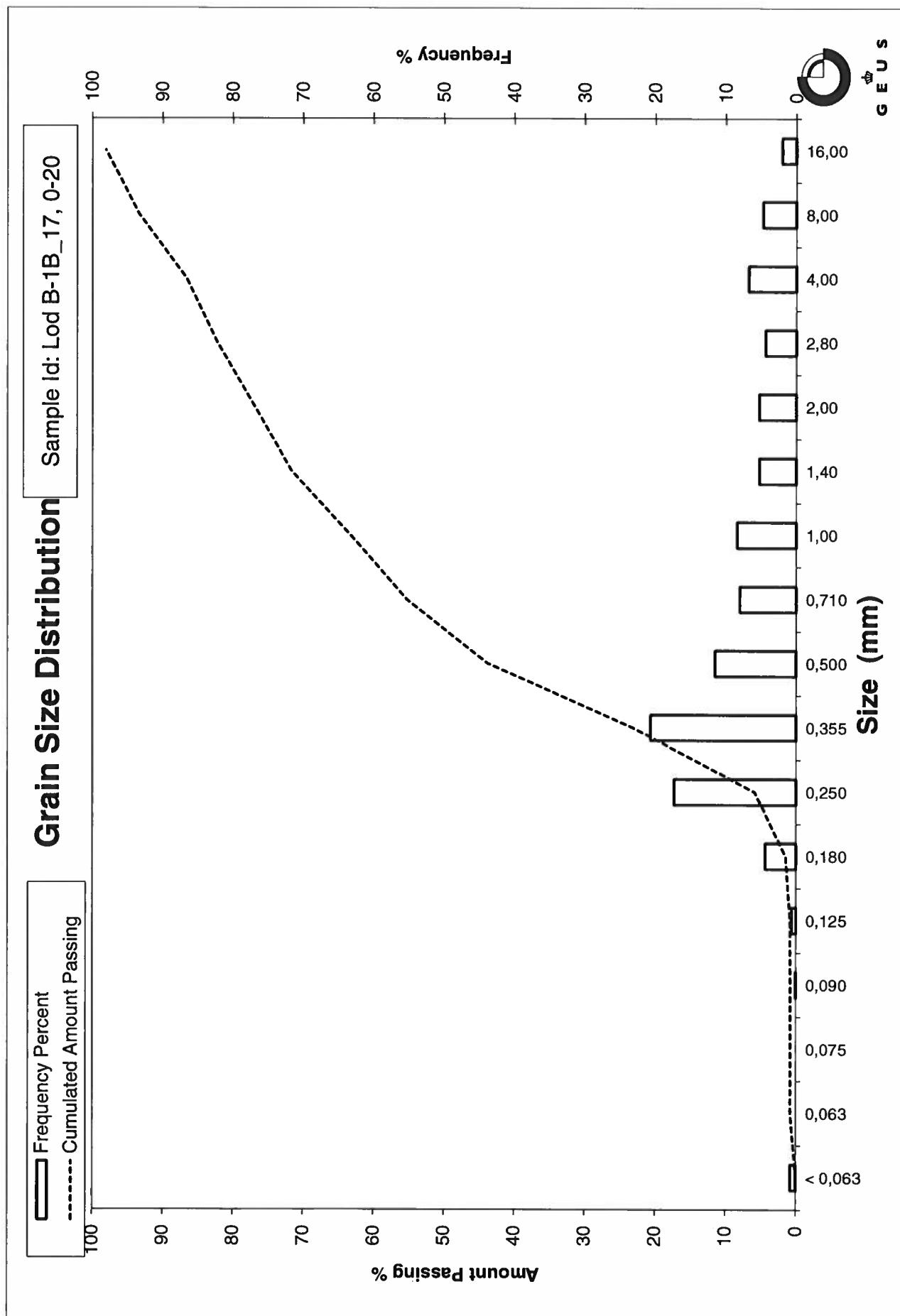
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on
"Amount in sieve". Uniformity coefficient is based on
"Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_17, 30-50
Lab. Id: 200758
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 106,18 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,11	0,10	99,90
1,40	-0,49	0,17	0,16	99,74
1,00	0,00	0,52	0,49	99,25
0,710	0,49	1,53	1,44	97,81
0,500	1,00	7,51	7,07	90,73
0,355	1,49	33,11	31,18	59,55
0,250	2,00	46,92	44,19	15,36
0,180	2,47	12,39	11,67	3,69
0,125	3,00	2,07	1,95	1,74
0,090	3,47	0,41	0,39	1,36
0,075	3,74	0,09	0,08	1,27
0,063	3,99	0,04	0,04	1,23
< 0,063	> 3,99	1,31	1,23	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,23
Sand, fine	(0,063 mm - 0,200 mm): 5,79
Sand, medium	(0,2 mm - 0,6 mm): 87,07
Sand, coarse	(0,6 mm - 2 mm): 5,80
Gravel	(> 2 mm): 0,10
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,63	0,67
16%	84%	0,47	1,09
25%	75%	0,43	1,23
40%	60%	0,36	1,49
Median 50%	50%	0,33	1,59
75%	25%	0,27	1,87
84%	16%	0,25	1,99
90%	10%	0,22	2,20
95%	5%	0,19	2,41

Moments Statistics

Mean	1,56
Sorting	0,49
Skewness	-0,08
Kurtosis	1,10
Uniformity Coefficient	1,64

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

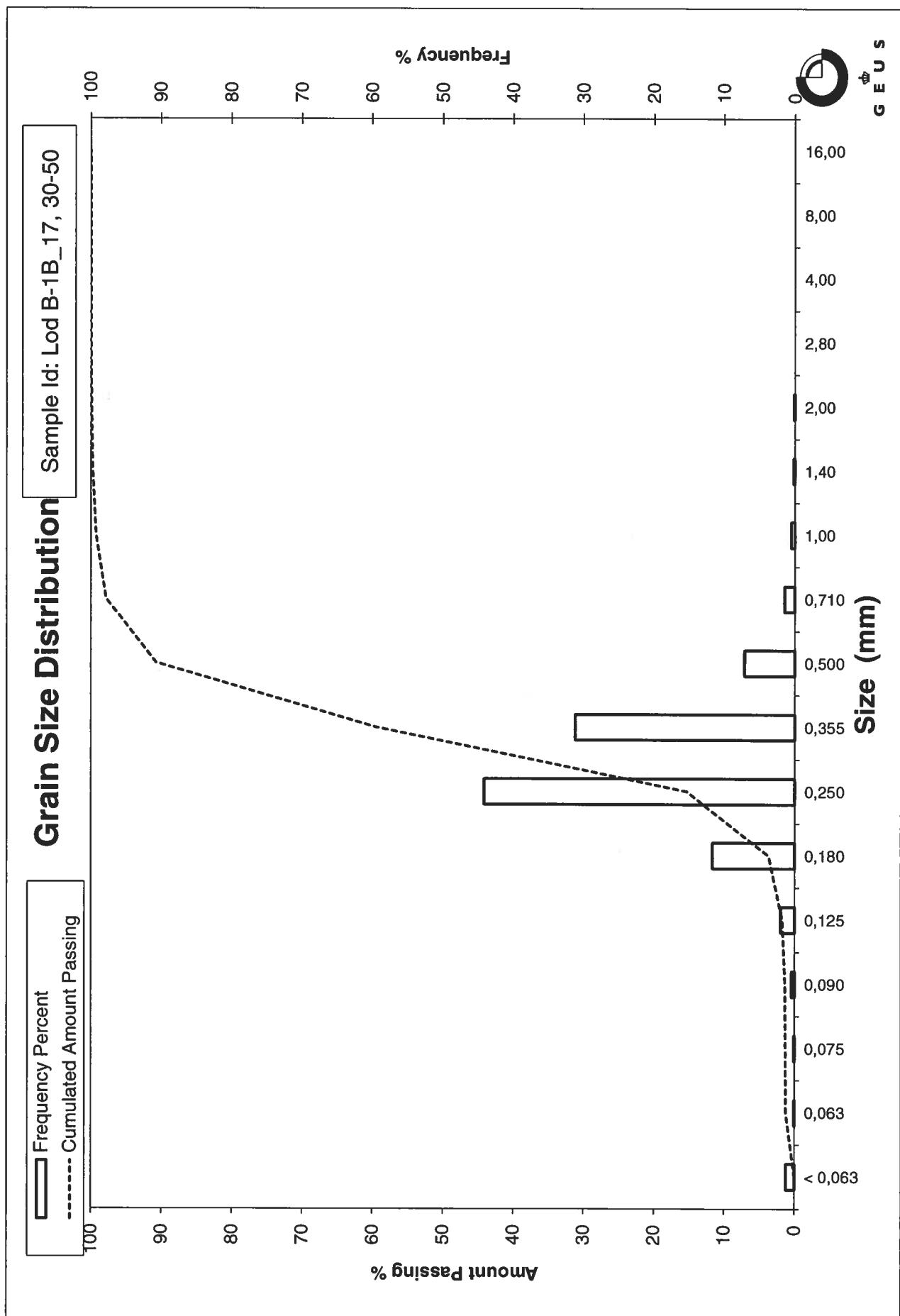
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_17, 100-120
Lab. Id: 200759
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 101,7 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,03	0,03	99,97
0,710	0,49	0,11	0,11	99,86
0,500	1,00	1,16	1,14	98,72
0,355	1,49	14,89	14,64	84,08
0,250	2,00	51,93	51,06	33,02
0,180	2,47	26,75	26,30	6,72
0,125	3,00	3,91	3,84	2,87
0,090	3,47	1,36	1,34	1,53
0,075	3,74	0,29	0,29	1,25
0,063	3,99	0,15	0,15	1,10
< 0,063	> 3,99	1,12	1,10	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,10
Sand, fine	(0,063 mm - 0,200 mm): 13,13
Sand, medium	(0,2 mm - 0,6 mm): 85,03
Sand, coarse	(0,6 mm - 2 mm): 0,74
Gravel	(> 2 mm): 0,00
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,46	1,11
16%	84%	0,35	1,49
25%	75%	0,34	1,57
40%	60%	0,31	1,71
Median 50%	50%	0,28	1,81
75%	25%	0,23	2,13
84%	16%	0,20	2,29
90%	10%	0,19	2,41
95%	5%	0,16	2,69

Moments Statistics

Mean	1,86
Sorting	0,44
Skewness	0,16
Kurtosis	1,16
Uniformity Coefficient	1,62

The analysis is executed according to DS 405.9
extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles
are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

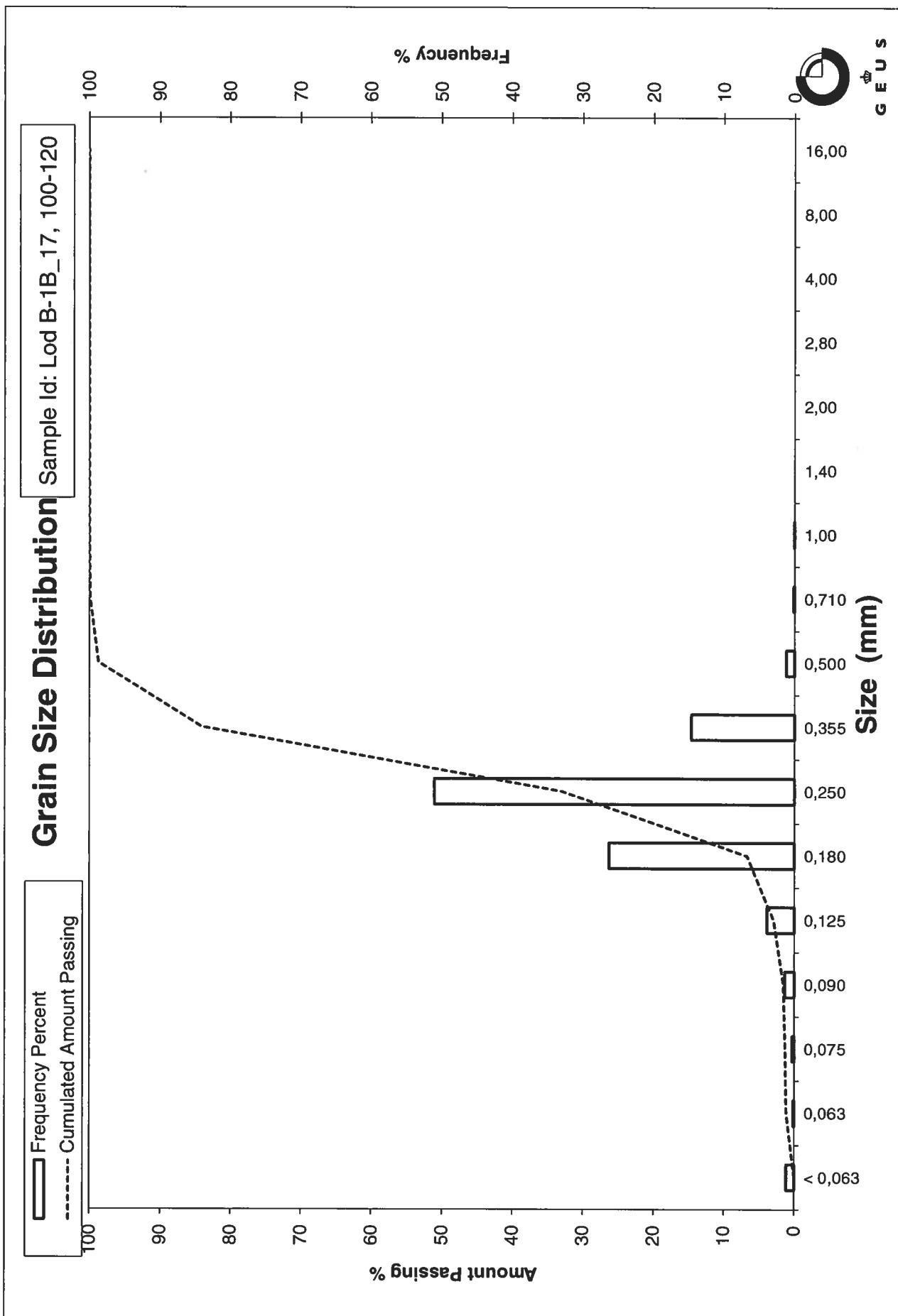
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_17, 200-220
Lab. Id: 200760
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 101,71 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,03	0,03	99,97
1,40	-0,49	0,18	0,18	99,79
1,00	0,00	1,08	1,06	98,73
0,710	0,49	1,92	1,89	96,84
0,500	1,00	7,00	6,88	89,96
0,355	1,49	28,61	28,13	61,83
0,250	2,00	45,60	44,83	17,00
0,180	2,47	12,57	12,36	4,64
0,125	3,00	2,40	2,36	2,28
0,090	3,47	0,83	0,82	1,46
0,075	3,74	0,24	0,24	1,23
0,063	3,99	0,15	0,15	1,08
< 0,063	> 3,99	1,10	1,08	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %	
Silt and clay	(< 0,063 mm):	1,08
Sand, fine	(0,063 mm - 0,200 mm):	7,09
Sand, medium	(0,2 mm - 0,6 mm):	85,07
Sand, coarse	(0,6 mm - 2 mm):	6,73
Gravel	(> 2 mm):	0,03
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,65	0,61
16%	84%	0,47	1,09
25%	75%	0,42	1,24
40%	60%	0,35	1,51
Median 50%	50%	0,33	1,61
75%	25%	0,27	1,90
84%	16%	0,24	2,03
90%	10%	0,21	2,25
95%	5%	0,18	2,46

Moments Statistics

Mean	1,58
Sorting	0,51
Skewness	-0,09
Kurtosis	1,16
Uniformity Coefficient	1,67

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

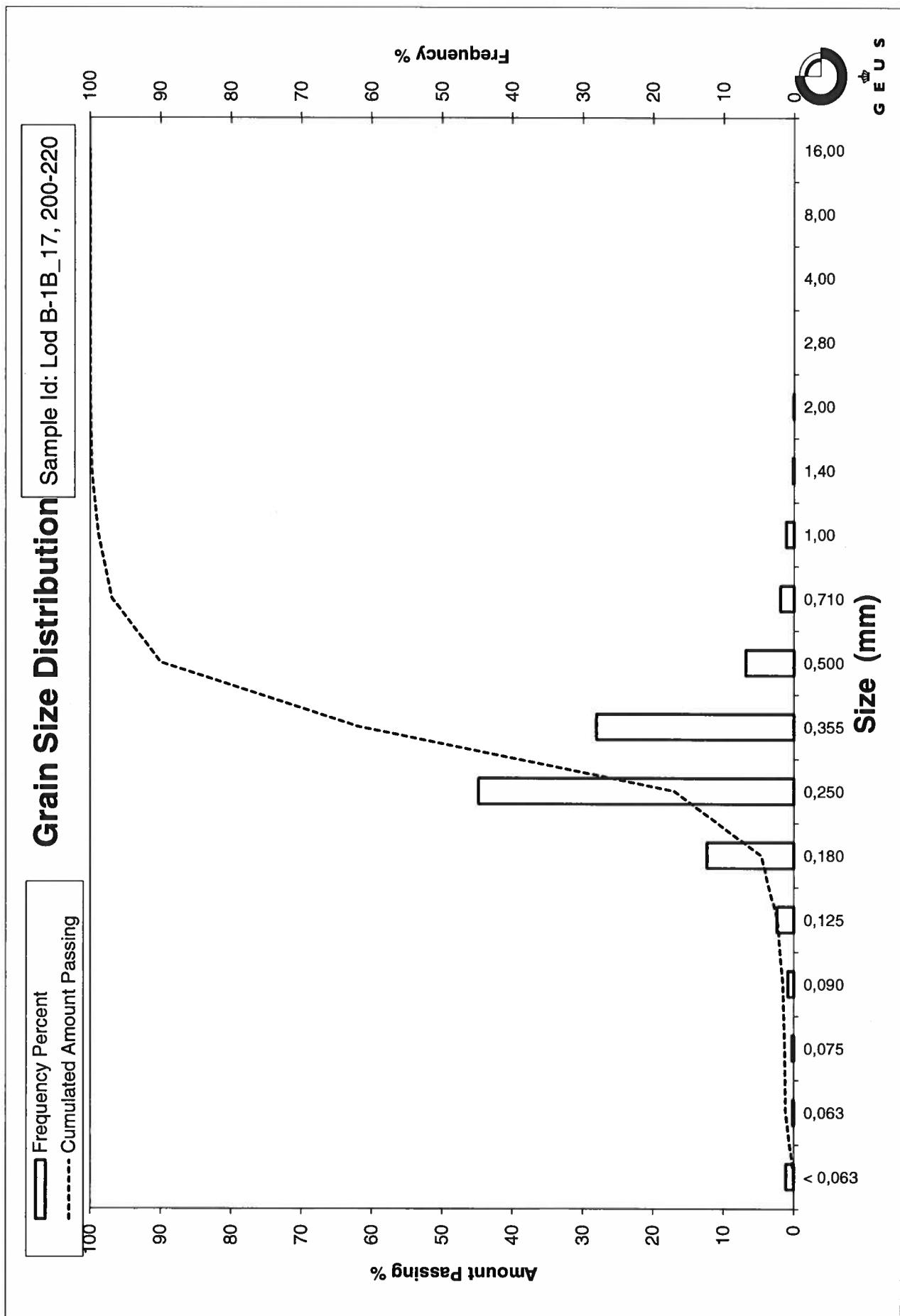
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_17, 300-320
Lab. Id: 200761
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 98,85 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,03	0,03	99,97
2,00	-1,00	0,01	0,01	99,96
1,40	-0,49	0,00	0,00	99,96
1,00	0,00	0,18	0,18	99,78
0,710	0,49	0,41	0,41	99,36
0,500	1,00	3,90	3,95	95,42
0,355	1,49	26,62	26,93	68,49
0,250	2,00	46,46	47,00	21,49
0,180	2,47	15,18	15,36	6,13
0,125	3,00	3,44	3,48	2,65
0,090	3,47	1,02	1,03	1,62
0,075	3,74	0,19	0,19	1,43
0,063	3,99	0,08	0,08	1,35
< 0,063	> 3,99	1,33	1,35	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,35
Sand, fine	(0,063 mm - 0,200 mm): 9,17
Sand, medium	(0,2 mm - 0,6 mm): 86,78
Sand, coarse	(0,6 mm - 2 mm): 2,66
Gravel	(> 2 mm): 0,04
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,50	1,01
16%	84%	0,44	1,19
25%	75%	0,39	1,36
40%	60%	0,34	1,57
Median 50%	50%	0,31	1,67
75%	25%	0,26	1,96
84%	16%	0,22	2,15
90%	10%	0,20	2,34
95%	5%	0,16	2,62

Moments Statistics

Mean	1,67
Sorting	0,49
Skewness	0,09
Kurtosis	1,11
Uniformity Coefficient	1,70

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

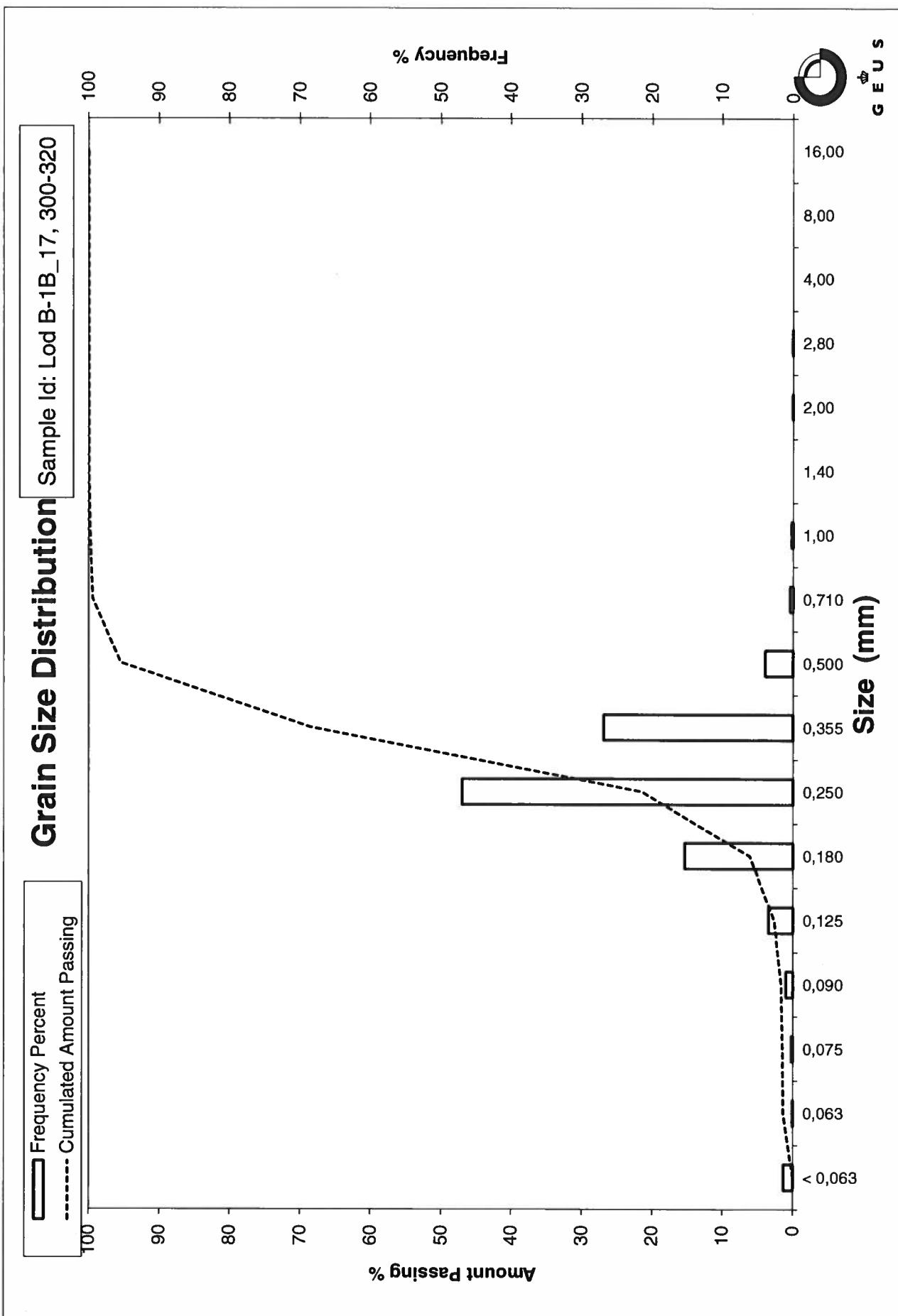
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d60\% / d10\%) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_17, 400-420
Lab. Id: 200762
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 101,17 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,04	0,04	99,96
1,40	-0,49	0,11	0,11	99,85
1,00	0,00	1,00	0,99	98,86
0,710	0,49	2,85	2,82	96,05
0,500	1,00	12,00	11,86	84,19
0,355	1,49	31,85	31,48	52,70
0,250	2,00	34,50	34,10	18,60
0,180	2,47	12,89	12,74	5,86
0,125	3,00	3,45	3,41	2,45
0,090	3,47	0,92	0,91	1,54
0,075	3,74	0,18	0,18	1,36
0,063	3,99	0,10	0,10	1,27
< 0,063	> 3,99	1,28	1,27	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,27
Sand, fine	(0,063 mm - 0,200 mm): 8,24
Sand, medium	(0,2 mm - 0,6 mm): 80,33
Sand, coarse	(0,6 mm - 2 mm): 10,13
Gravel	(> 2 mm): 0,04
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,69	0,53
16%	84%	0,50	1,00
25%	75%	0,46	1,13
40%	60%	0,39	1,36
Median 50%	50%	0,35	1,53
75%	25%	0,27	1,89
84%	16%	0,24	2,08
90%	10%	0,20	2,30
95%	5%	0,17	2,59

Moments Statistics

Mean	1,54
Sorting	0,58
Skewness	0,03
Kurtosis	1,11
Uniformity Coefficient	1,92

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

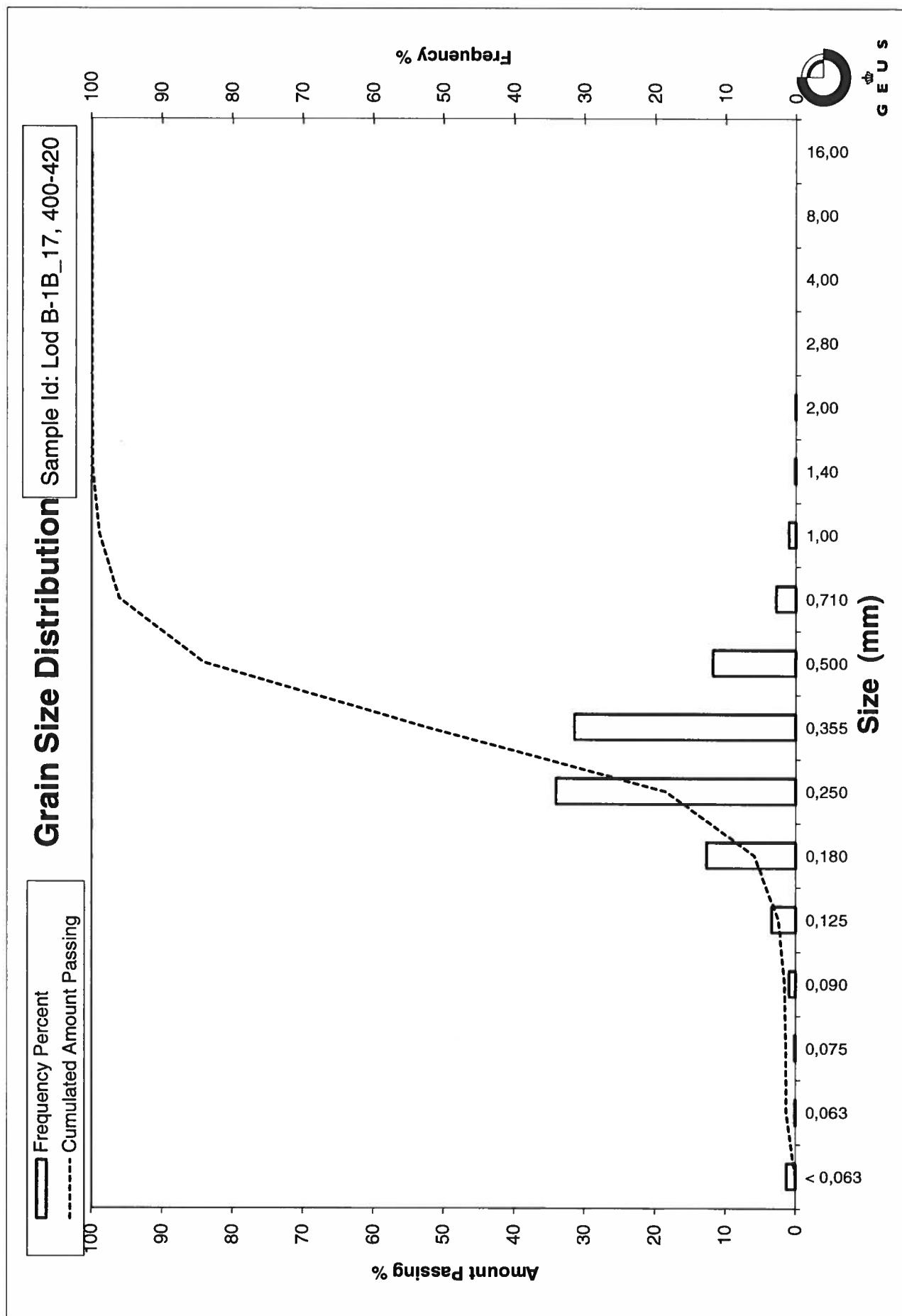
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_18, 0-20
Lab. Id: 200763
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks: >4mm består af skaller



Total Weight 103,07 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,16	0,16	99,84
2,80	-1,49	0,59	0,57	99,27
2,00	-1,00	0,45	0,44	98,84
1,40	-0,49	0,47	0,46	98,38
1,00	0,00	1,43	1,39	96,99
0,710	0,49	3,63	3,52	93,47
0,500	1,00	12,42	12,05	81,42
0,355	1,49	32,88	31,90	49,52
0,250	2,00	38,20	37,06	12,46
0,180	2,47	10,31	10,00	2,45
0,125	3,00	1,50	1,46	1,00
0,090	3,47	0,21	0,20	0,80
0,075	3,74	0,01	0,01	0,79
0,063	3,99	0,00	0,00	0,79
< 0,063	> 3,99	0,81	0,79	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,79
Sand, fine	(0,063 mm - 0,200 mm):	4,53
Sand, medium	(0,2 mm - 0,6 mm):	81,85
Sand, coarse	(0,6 mm - 2 mm):	11,68
Gravel	(> 2 mm):	1,16
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,84	0,26
16%	84%	0,54	0,88
25%	75%	0,47	1,09
40%	60%	0,40	1,31
Median 50%	50%	0,36	1,49
75%	25%	0,29	1,81
84%	16%	0,26	1,94
90%	10%	0,23	2,10
95%	5%	0,20	2,34

Moments Statistics

Mean	1,43
Sorting	0,58
Skewness	-0,16
Kurtosis	1,18
Uniformity Coefficient	1,73

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi_{16\%} + \phi_{84\%} + \phi_{50\%}) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi_{84\%} - \phi_{16\%}) / 4 + (\phi_{95\%} - \phi_{5\%}) / 6,6 \text{ (Folk and Ward 1957)}$$

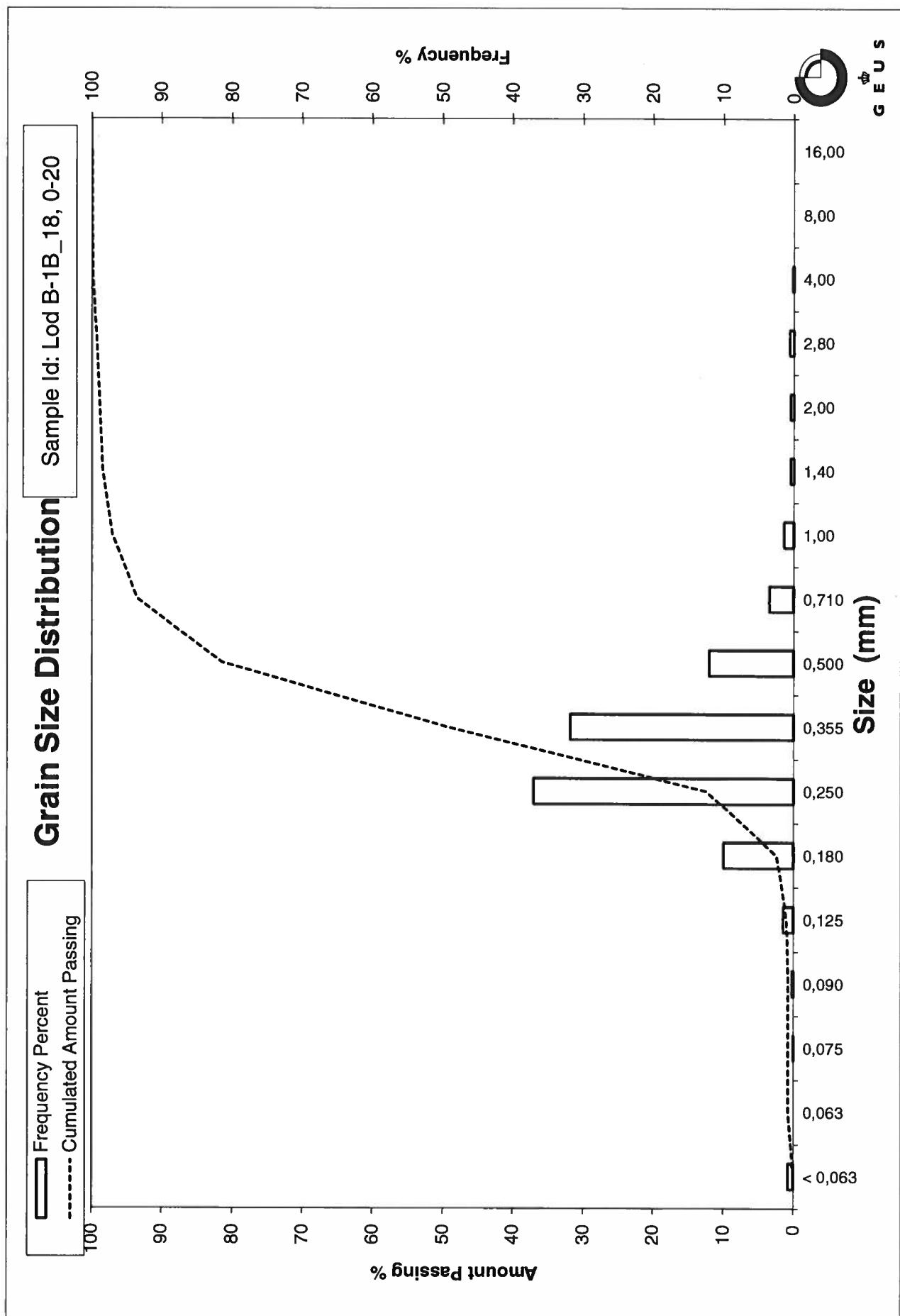
$$\text{Kurtosis } (\phi_{95\%} - \phi_{5\%}) / (2,44 * (\phi_{75\%} - \phi_{25\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi_{16\%} + \phi_{84\%} - 2*\phi_{50\%}) / (2*(\phi_{84\%} - \phi_{16\%})) + (\phi_{5\%} + \phi_{95\%} - 2*\phi_{50\%}) / (2*(\phi_{95\%} - \phi_{5\%})) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_18, 100-120
Lab. Id: 200764
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 103,11 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,11	0,11	99,89
1,40	-0,49	0,20	0,19	99,70
1,00	0,00	0,29	0,28	99,42
0,710	0,49	1,38	1,34	98,08
0,500	1,00	8,27	8,02	90,06
0,355	1,49	27,86	27,02	63,04
0,250	2,00	47,29	45,86	17,18
0,180	2,47	14,33	13,90	3,28
0,125	3,00	1,90	1,84	1,44
0,090	3,47	0,25	0,24	1,19
0,075	3,74	0,01	0,01	1,18
0,063	3,99	0,00	0,00	1,18
< 0,063	> 3,99	1,22	1,18	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,18
Sand, fine	(0,063 mm - 0,200 mm): 6,07
Sand, medium	(0,2 mm - 0,6 mm): 86,63
Sand, coarse	(0,6 mm - 2 mm): 6,01
Gravel	(> 2 mm): 0,11
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,63	0,67
16%	84%	0,47	1,10
25%	75%	0,42	1,25
40%	60%	0,35	1,52
Median 50%	50%	0,33	1,62
75%	25%	0,27	1,90
84%	16%	0,24	2,03
90%	10%	0,21	2,23
95%	5%	0,19	2,41

Moments Statistics

Mean	1,58
Sorting	0,50
Skewness	-0,11
Kurtosis	1,10
Uniformity Coefficient	1,63

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

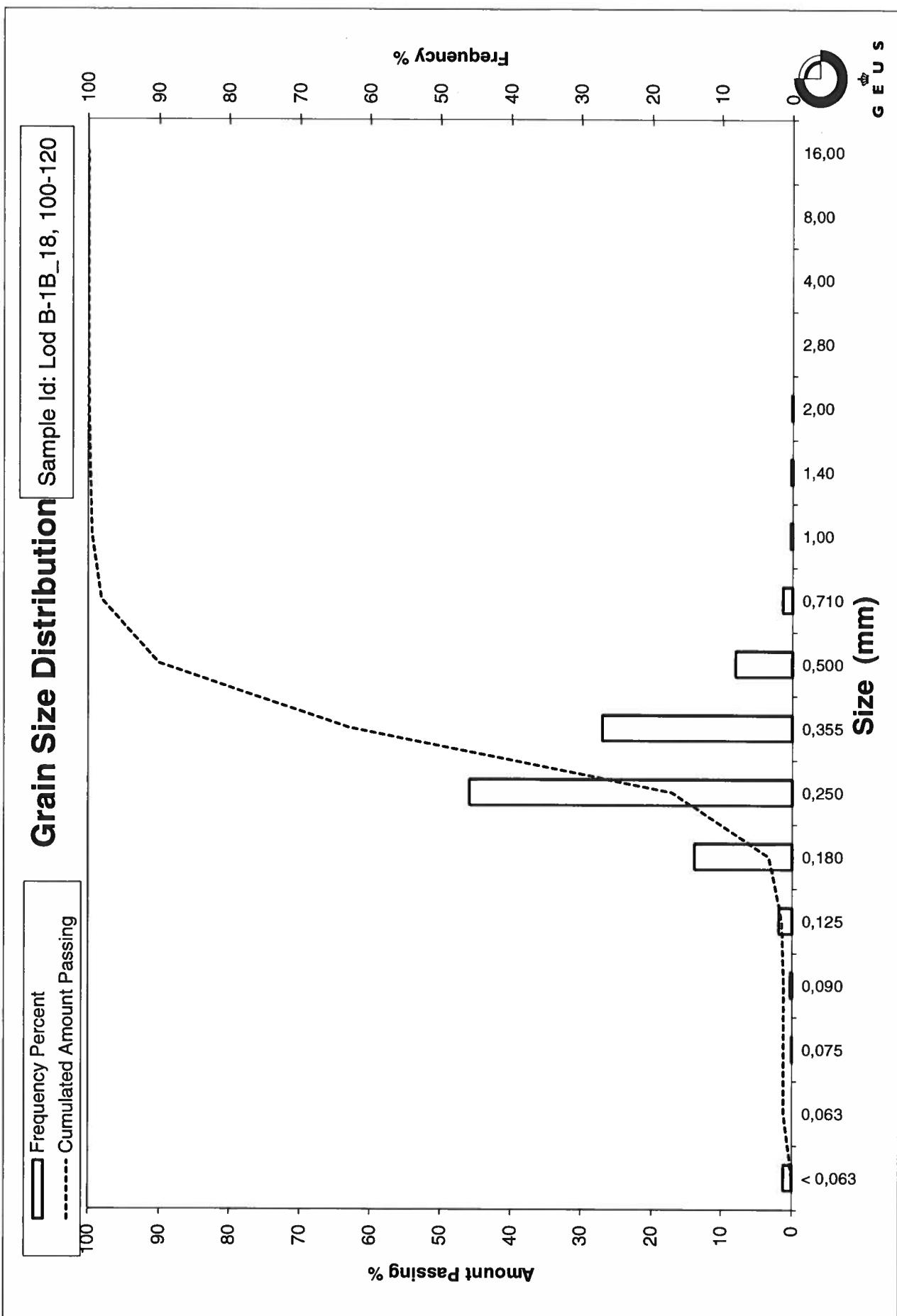
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_18, 200-220
Lab. Id: 200765
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 100,66 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,11	0,11	99,89
2,00	-1,00	0,17	0,17	99,72
1,40	-0,49	0,16	0,16	99,56
1,00	0,00	0,79	0,78	98,78
0,710	0,49	2,61	2,59	96,19
0,500	1,00	10,84	10,77	85,42
0,355	1,49	24,80	24,64	60,78
0,250	2,00	39,37	39,11	21,67
0,180	2,47	16,99	16,88	4,79
0,125	3,00	3,06	3,04	1,75
0,090	3,47	0,49	0,49	1,26
0,075	3,74	0,08	0,08	1,18
0,063	3,99	0,03	0,03	1,15
< 0,063	> 3,99	1,16	1,15	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,15
Sand, fine	(0,063 mm - 0,200 mm): 8,46
Sand, medium	(0,2 mm - 0,6 mm): 80,93
Sand, coarse	(0,6 mm - 2 mm): 9,18
Gravel	(> 2 mm): 0,28
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,69	0,54
16%	84%	0,49	1,02
25%	75%	0,44	1,19
40%	60%	0,35	1,50
Median 50%	50%	0,33	1,62
75%	25%	0,26	1,95
84%	16%	0,23	2,14
90%	10%	0,20	2,31
95%	5%	0,18	2,47

Moments Statistics

Mean	1,59
Sorting	0,57
Skewness	-0,09
Kurtosis	1,04
Uniformity Coefficient	1,75

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

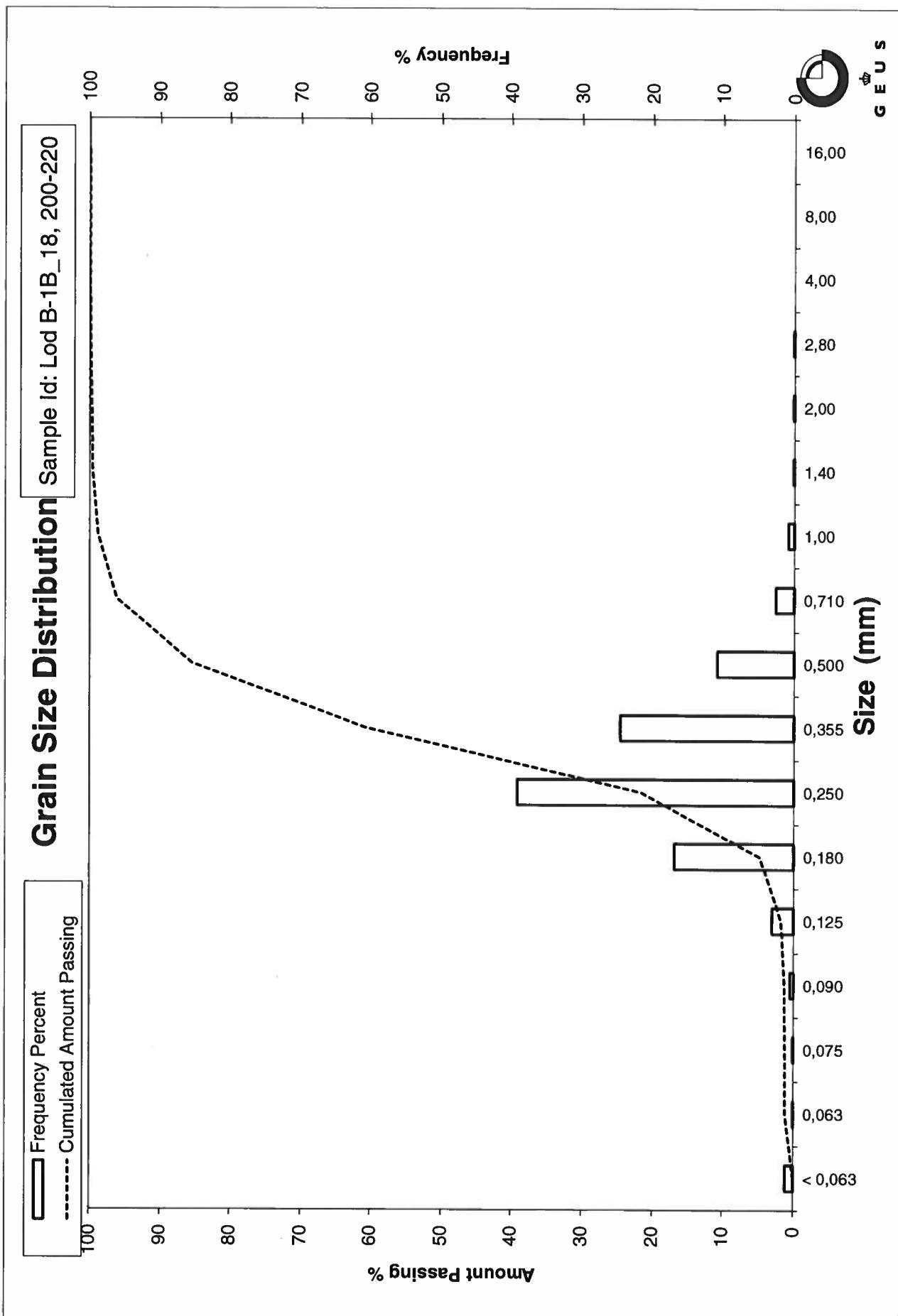
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_18, 300-320
Lab. Id: 200766
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 99,49 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,03	0,03	99,97
2,00	-1,00	0,00	0,00	99,97
1,40	-0,49	0,00	0,00	99,97
1,00	0,00	0,03	0,03	99,94
0,710	0,49	0,14	0,14	99,80
0,500	1,00	1,68	1,69	98,11
0,355	1,49	15,90	15,98	82,13
0,250	2,00	56,48	56,77	25,36
0,180	2,47	17,63	17,72	7,64
0,125	3,00	3,99	4,01	3,63
0,090	3,47	1,48	1,49	2,14
0,075	3,74	0,29	0,29	1,85
0,063	3,99	0,16	0,16	1,69
< 0,063	> 3,99	1,68	1,69	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,69
Sand, fine	(0,063 mm - 0,200 mm): 11,01
Sand, medium	(0,2 mm - 0,6 mm): 86,21
Sand, coarse	(0,6 mm - 2 mm): 1,06
Gravel	(> 2 mm): 0,03
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,47	1,08
16%	84%	0,37	1,43
25%	75%	0,34	1,55
40%	60%	0,31	1,67
Median 50%	50%	0,30	1,76
75%	25%	0,25	2,01
84%	16%	0,21	2,23
90%	10%	0,19	2,40
95%	5%	0,14	2,80

Moments Statistics

Mean	1,81
Sorting	0,46
Skewness	0,19
Kurtosis	1,53
Uniformity Coefficient	1,66

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

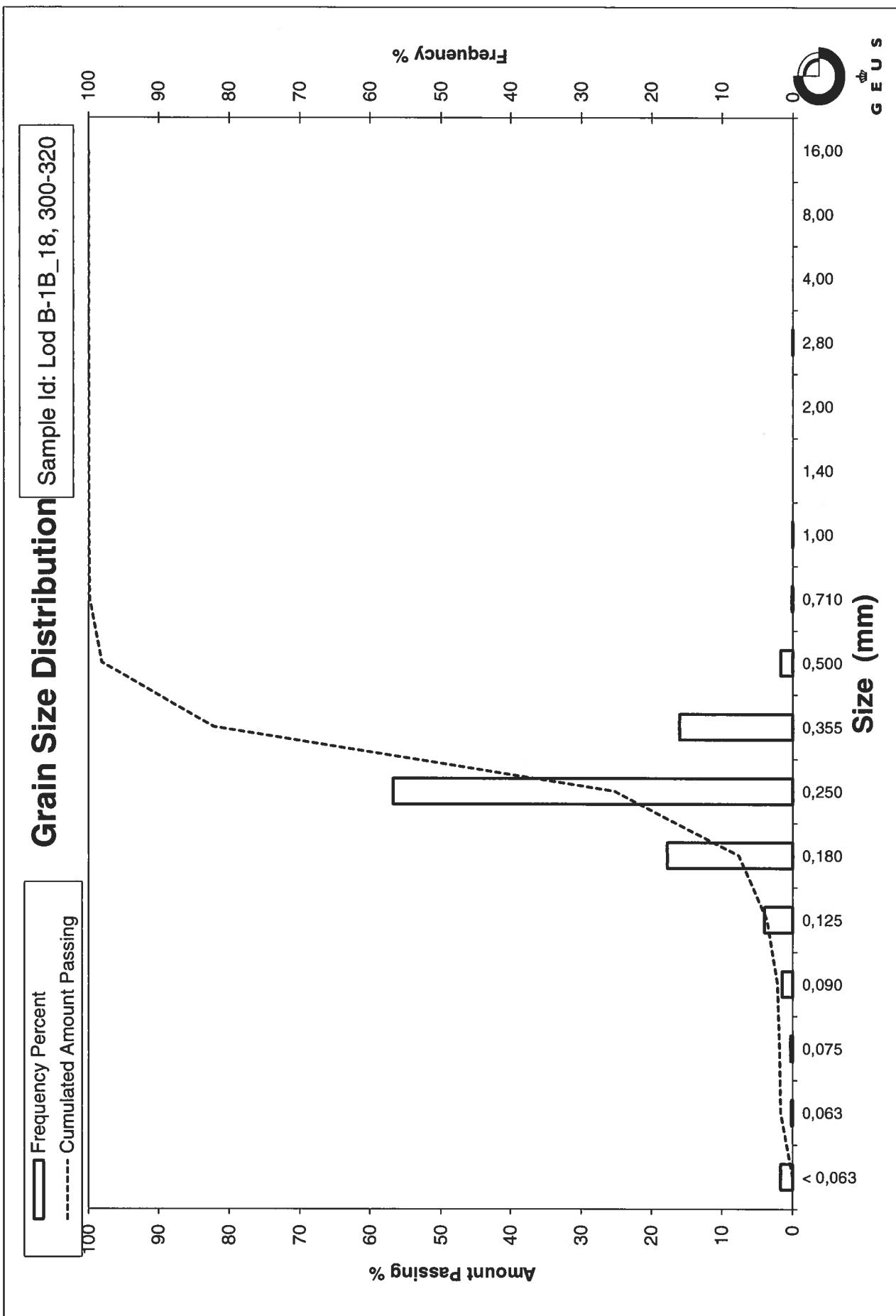
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d60\% / d10\%) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_18, 400-420
Lab. Id: 200767
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 101,86 g

Size Fractions

Sieve Analysis	
Gravel	
Sand	

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,17	0,17	99,83
2,80	-1,49	0,14	0,14	99,70
2,00	-1,00	0,00	0,00	99,70
1,40	-0,49	0,00	0,00	99,70
1,00	0,00	0,08	0,08	99,62
0,710	0,49	0,57	0,56	99,06
0,500	1,00	6,93	6,80	92,25
0,355	1,49	29,51	28,97	63,28
0,250	2,00	42,18	41,41	21,87
0,180	2,47	14,42	14,16	7,72
0,125	3,00	3,82	3,75	3,97
0,090	3,47	1,65	1,62	2,35
0,075	3,74	0,42	0,41	1,93
0,063	3,99	0,22	0,22	1,72
< 0,063	> 3,99	1,75	1,72	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,72
Sand, fine	(0,063 mm - 0,200 mm): 10,04
Sand, medium	(0,2 mm - 0,6 mm): 83,73
Sand, coarse	(0,6 mm - 2 mm): 4,20
Gravel	(> 2 mm): 0,30
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,58	0,77
16%	84%	0,46	1,12
25%	75%	0,41	1,27
40%	60%	0,35	1,53
Median 50%	50%	0,32	1,64
75%	25%	0,26	1,95
84%	16%	0,22	2,18
90%	10%	0,19	2,39
95%	5%	0,14	2,83

Moments Statistics

Mean	1,65
Sorting	0,58
Skewness	0,09
Kurtosis	1,24
Uniformity Coefficient	1,81

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

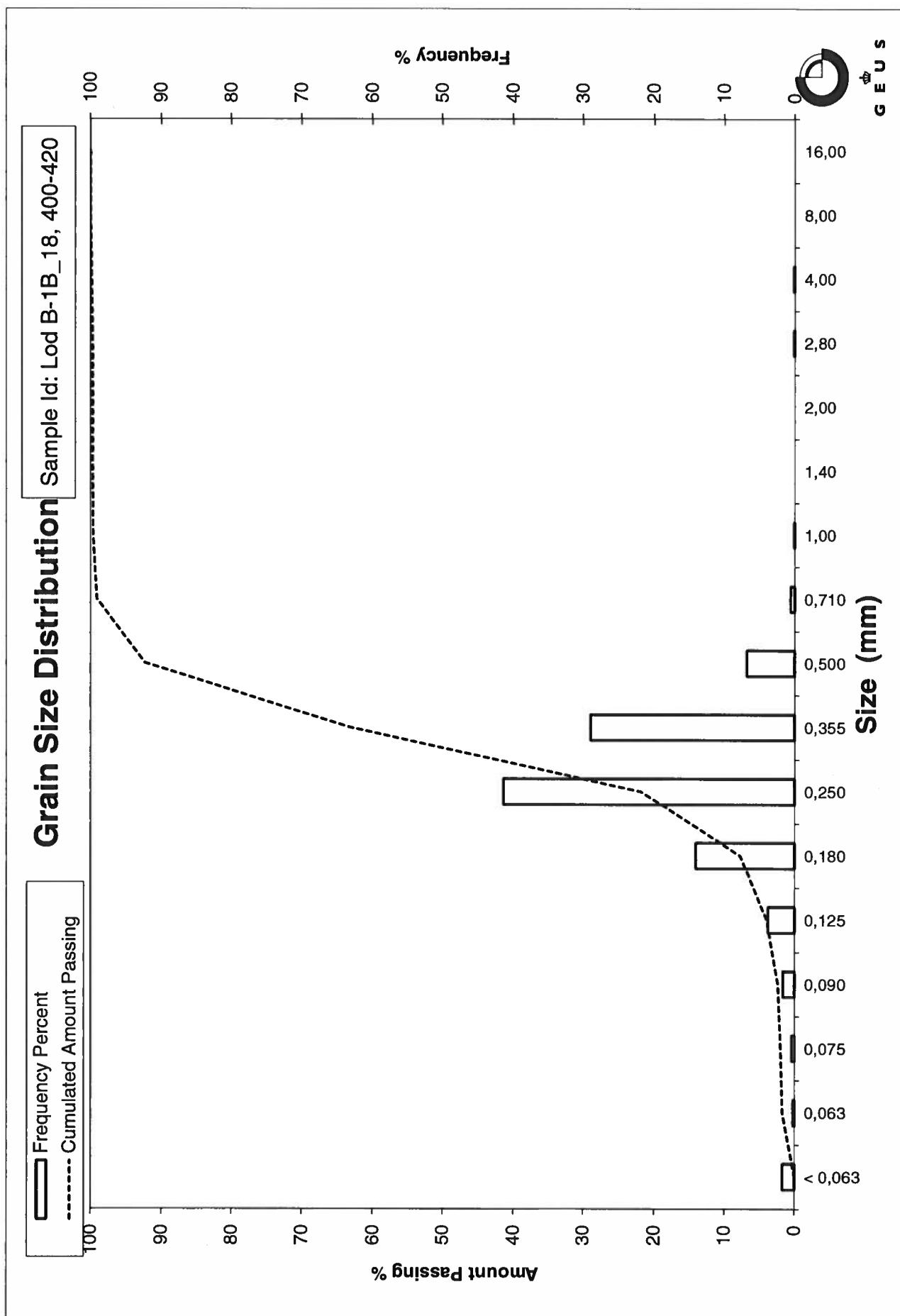
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_19, 10-30
Lab. Id: 200768
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 584,14 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	64,98	11,12	88,88
4,00	-2,00	61,68	10,56	78,32
2,80	-1,49	29,95	5,13	73,19
2,00	-1,00	25,58	4,38	68,81
1,40	-0,49	24,65	4,22	64,59
1,00	0,00	31,15	5,33	59,26
0,710	0,49	45,95	7,87	51,39
0,500	1,00	68,81	11,78	39,61
0,355	1,49	111,84	19,15	20,47
0,250	2,00	92,60	15,85	4,61
0,180	2,47	19,43	3,33	1,29
0,125	3,00	3,66	0,63	0,66
0,090	3,47	0,86	0,15	0,51
0,075	3,74	0,23	0,04	0,47
0,063	3,99	0,16	0,03	0,45
< 0,063	> 3,99	2,61	0,45	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,45
Sand, fine	(0,063 mm - 0,200 mm): 1,79
Sand, medium	(0,2 mm - 0,6 mm): 42,98
Sand, coarse	(0,6 mm - 2 mm): 23,59
Gravel	(> 2 mm): 31,19
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	12,40	-3,63
16%	84%	6,15	-2,62
25%	75%	3,22	-1,69
40%	60%	1,06	-0,08
Median 50%	50%	0,69	0,55
75%	25%	0,39	1,36
84%	16%	0,33	1,62
90%	10%	0,29	1,81
95%	5%	0,25	1,99

Moments Statistics

Mean	-0,15
Sorting	1,91
Skewness	-0,49
Kurtosis	0,76
Uniformity Coefficient	3,70

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

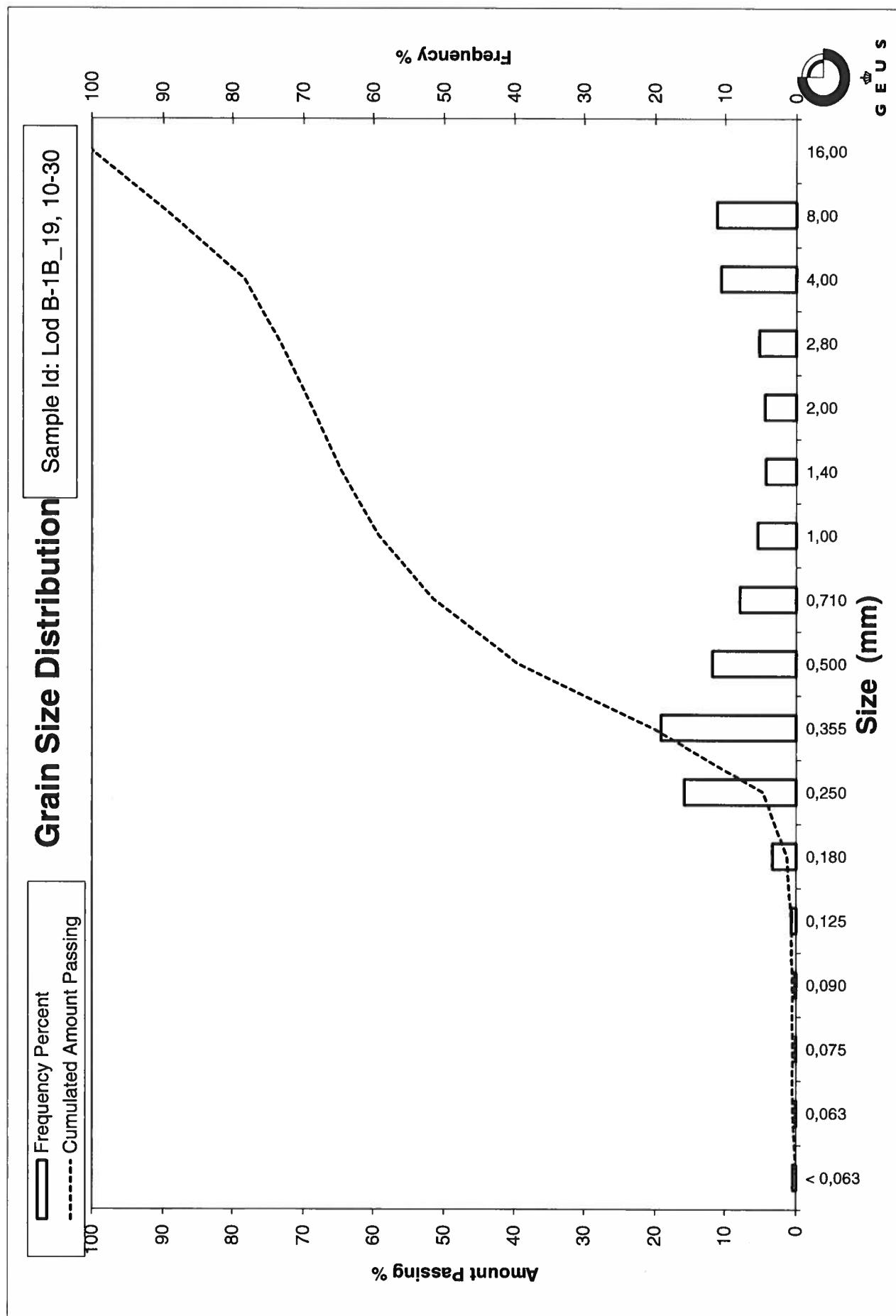
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve", Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_19, 100-120
Lab. Id: 200769
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 104,45 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	1,39	1,33	98,67
2,80	-1,49	1,44	1,38	97,29
2,00	-1,00	1,81	1,73	95,56
1,40	-0,49	1,97	1,89	93,67
1,00	0,00	6,41	6,14	87,53
0,710	0,49	9,26	8,87	78,67
0,500	1,00	16,03	15,35	63,32
0,355	1,49	33,24	31,82	31,50
0,250	2,00	25,47	24,38	7,11
0,180	2,47	5,16	4,94	2,17
0,125	3,00	0,89	0,85	1,32
0,090	3,47	0,10	0,10	1,23
0,075	3,74	0,00	0,00	1,23
0,063	3,99	0,00	0,00	1,23
< 0,063	> 3,99	1,28	1,23	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,23
Sand, fine	(0,063 mm - 0,200 mm):	2,36
Sand, medium	(0,2 mm - 0,6 mm):	67,05
Sand, coarse	(0,6 mm - 2 mm):	24,93
Gravel	(> 2 mm):	4,44
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,82	-0,87
16%	84%	0,88	0,18
25%	75%	0,66	0,60
40%	60%	0,48	1,04
Median 50%	50%	0,44	1,19
75%	25%	0,33	1,61
84%	16%	0,29	1,79
90%	10%	0,26	1,93
95%	5%	0,22	2,18

Moments Statistics

Mean	1,05
Sorting	0,87
Skewness	-0,30
Kurtosis	1,23
Uniformity Coefficient	1,85

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

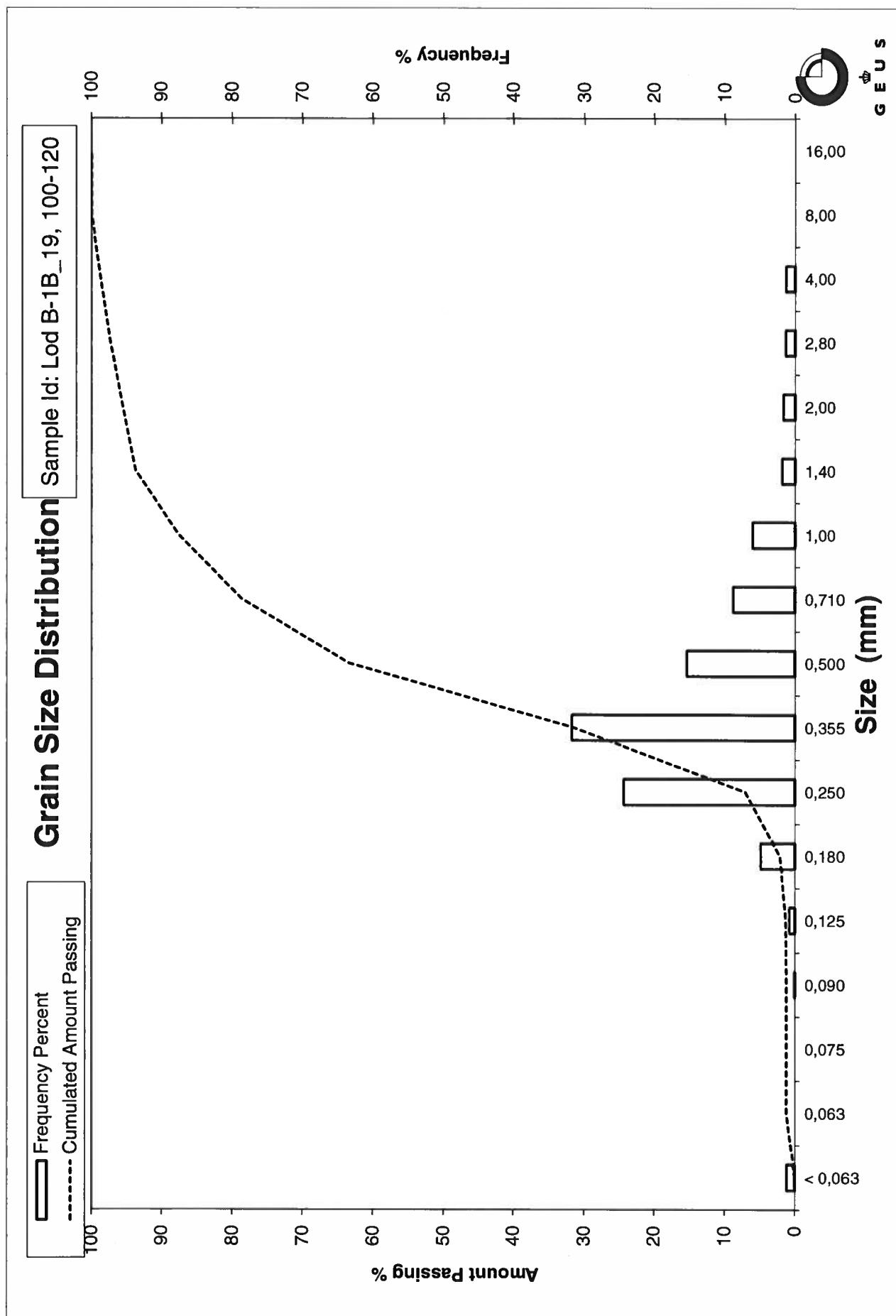
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_19, 200-220
Lab. Id: 200770
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 102,1 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	4,48	4,39	95,61
4,00	-2,00	0,00	0,00	95,61
2,80	-1,49	0,15	0,15	95,47
2,00	-1,00	0,34	0,33	95,13
1,40	-0,49	0,75	0,73	94,40
1,00	0,00	1,85	1,81	92,59
0,710	0,49	3,86	3,78	88,81
0,500	1,00	9,70	9,50	79,30
0,355	1,49	27,59	27,02	52,28
0,250	2,00	39,39	38,58	13,70
0,180	2,47	10,59	10,37	3,33
0,125	3,00	1,94	1,90	1,43
0,090	3,47	0,34	0,33	1,10
0,075	3,74	0,03	0,03	1,07
0,063	3,99	0,00	0,00	1,07
< 0,063	> 3,99	1,09	1,07	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,07
Sand, fine	(0,063 mm - 0,200 mm):	5,23
Sand, medium	(0,2 mm - 0,6 mm):	77,54
Sand, coarse	(0,6 mm - 2 mm):	11,30
Gravel	(> 2 mm):	4,87
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,89	-0,92
16%	84%	0,60	0,73
25%	75%	0,48	1,07
40%	60%	0,40	1,33
Median 50%	50%	0,35	1,52
75%	25%	0,28	1,83
84%	16%	0,26	1,96
90%	10%	0,23	2,15
95%	5%	0,19	2,39

Moments Statistics

Mean	1,40
Sorting	0,81
Skewness	-0,38
Kurtosis	1,77
Uniformity Coefficient	1,76

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\% / 6,6$) (Folk and Ward 1957)

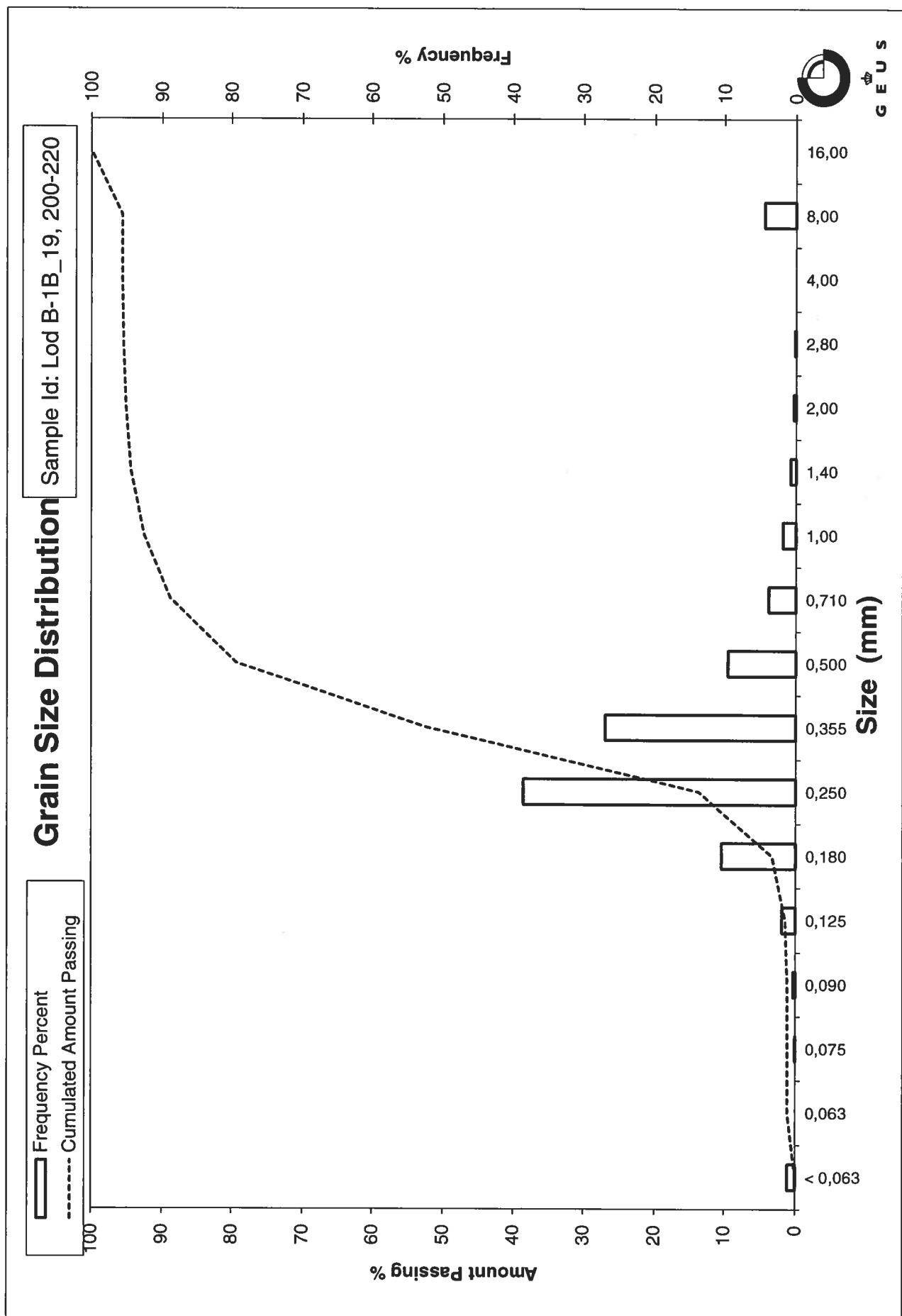
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness ($\phi 16\% + \phi 84\% - 2 * \phi 50\% / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\% / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient ($d60\% / d10\%$) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_19, 300-320
Lab. Id: 200771
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 102,36 g

Size Fractions

Sieve Analysis	
Gravel	
Sand	

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,09	0,09	99,91
1,40	-0,49	0,12	0,12	99,79
1,00	0,00	0,71	0,69	99,10
0,710	0,49	2,19	2,14	96,96
0,500	1,00	7,02	6,86	90,10
0,355	1,49	28,62	27,96	62,14
0,250	2,00	43,86	42,85	19,29
0,180	2,47	16,30	15,92	3,37
0,125	3,00	2,50	2,44	0,93
0,090	3,47	0,28	0,27	0,65
0,075	3,74	0,03	0,03	0,63
0,063	3,99	0,00	0,00	0,63
< 0,063	> 3,99	0,64	0,63	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,63
Sand, fine	(0,063 mm - 0,200 mm): 7,29
Sand, medium	(0,2 mm - 0,6 mm): 85,45
Sand, coarse	(0,6 mm - 2 mm): 6,54
Gravel	(> 2 mm): 0,09
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,65	0,62
16%	84%	0,47	1,09
25%	75%	0,42	1,25
40%	60%	0,35	1,52
Median 50%	50%	0,33	1,62
75%	25%	0,26	1,92
84%	16%	0,24	2,09
90%	10%	0,21	2,26
95%	5%	0,19	2,42

Moments Statistics

Mean	1,60
Sorting	0,52
Skewness	-0,09
Kurtosis	1,09
Uniformity Coefficient	1,67

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

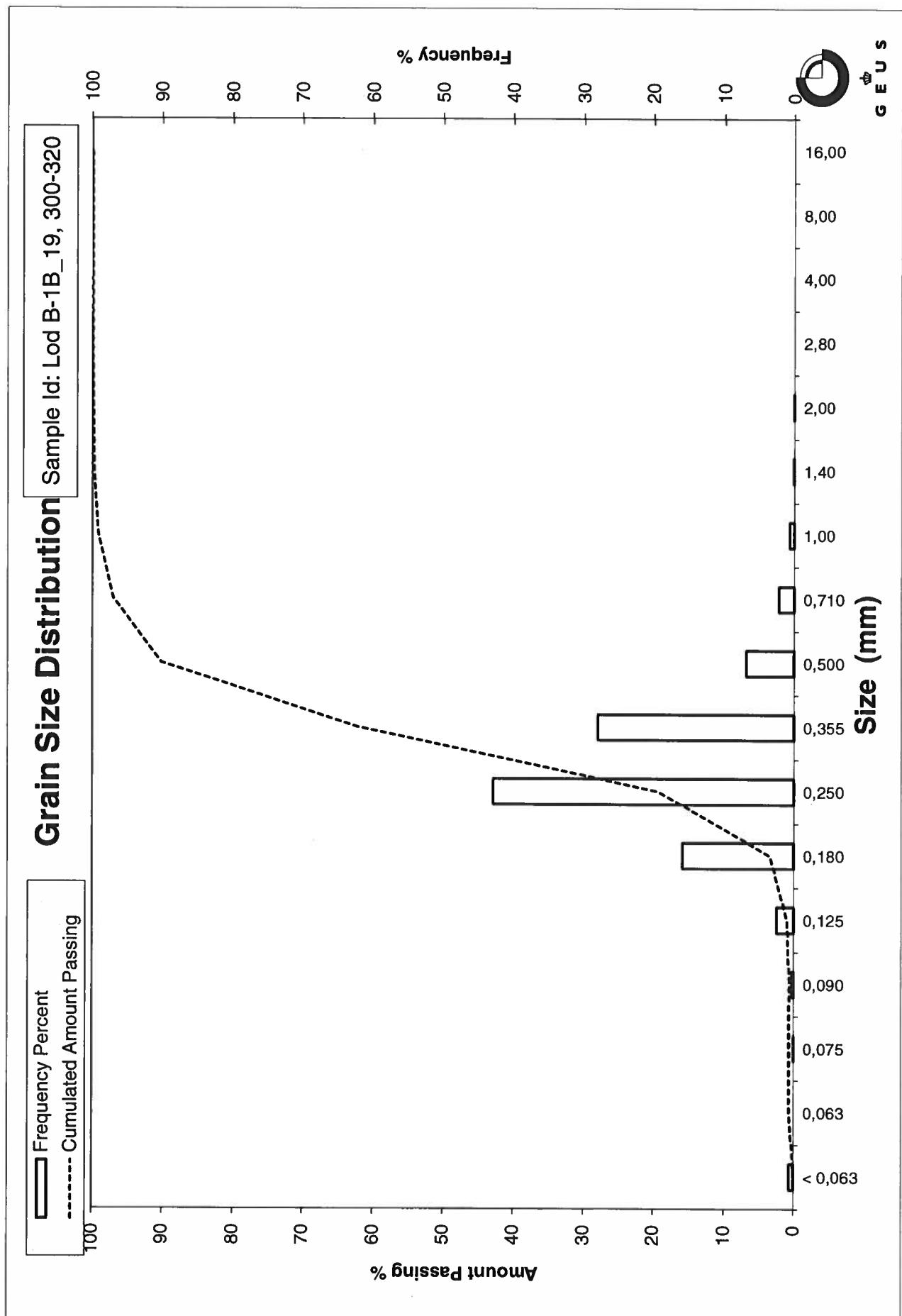
Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)
 Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)
 Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)
 Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)
 Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_20, 0-18
Lab. Id: 200772
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 105,25 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,11	0,10	99,90
2,80	-1,49	0,46	0,44	99,46
2,00	-1,00	1,08	1,03	98,43
1,40	-0,49	1,74	1,65	96,78
1,00	0,00	2,69	2,56	94,22
0,710	0,49	3,63	3,45	90,77
0,500	1,00	13,04	12,39	78,38
0,355	1,49	34,31	32,60	45,79
0,250	2,00	38,83	36,89	8,89
0,180	2,47	7,36	6,99	1,90
0,125	3,00	1,06	1,01	0,89
0,090	3,47	0,12	0,11	0,78
0,075	3,74	0,00	0,00	0,78
0,063	3,99	0,00	0,00	0,78
< 0,063	> 3,99	0,82	0,78	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,78
Sand, fine	(0,063 mm - 0,200 mm): 3,12
Sand, medium	(0,2 mm - 0,6 mm): 80,39
Sand, coarse	(0,6 mm - 2 mm): 14,15
Gravel	(> 2 mm): 1,57
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,12	-0,17
16%	84%	0,60	0,75
25%	75%	0,48	1,04
40%	60%	0,42	1,26
Median 50%	50%	0,37	1,42
75%	25%	0,30	1,76
84%	16%	0,27	1,89
90%	10%	0,25	1,98
95%	5%	0,21	2,24

Moments Statistics

Mean	1,35
Sorting	0,65
Skewness	-0,25
Kurtosis	1,39
Uniformity Coefficient	1,65

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

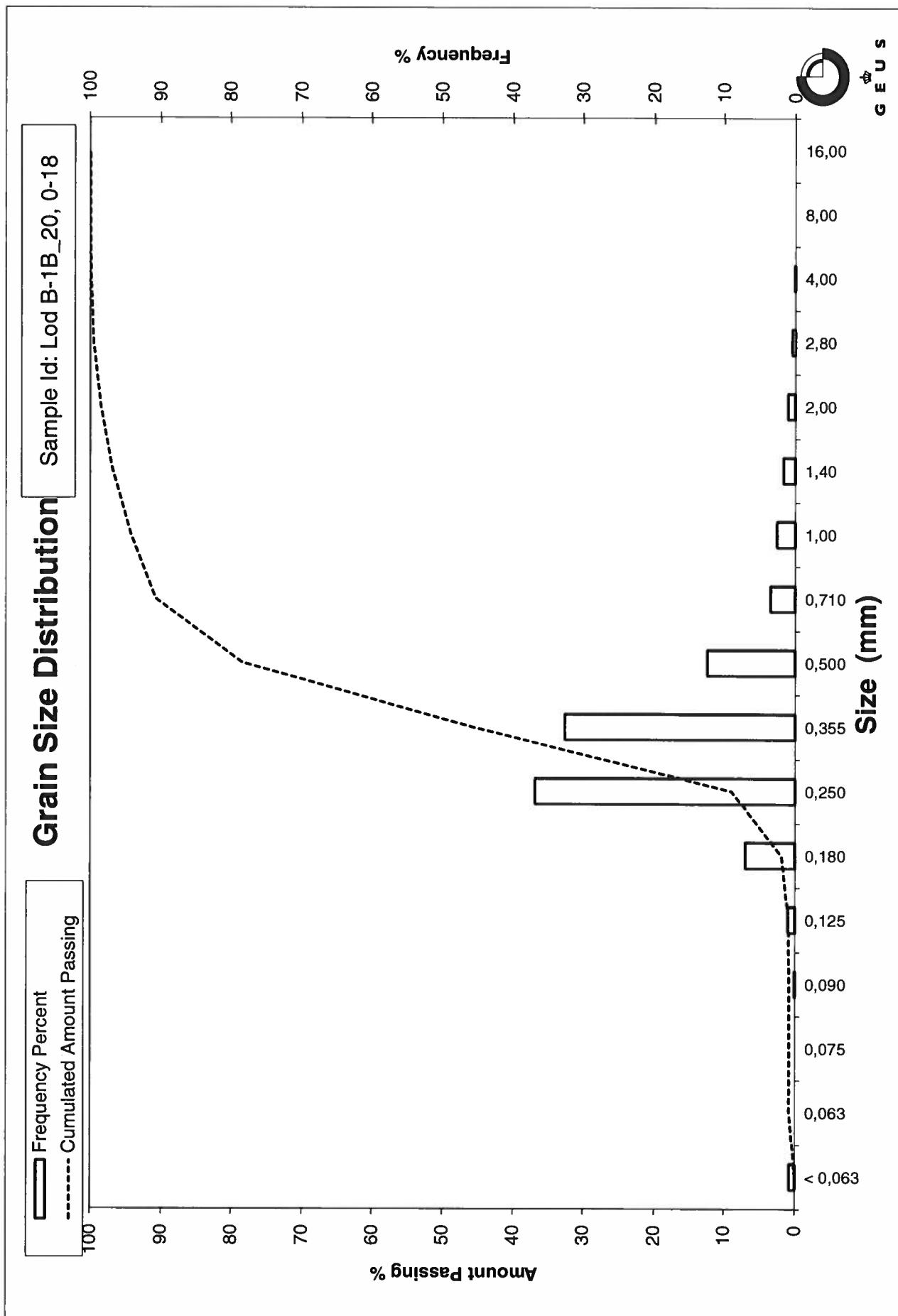
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_20, 100-120
Lab. Id: 200773
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 101,86 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,64	0,63	99,37
2,80	-1,49	1,44	1,41	97,96
2,00	-1,00	0,90	0,88	97,07
1,40	-0,49	1,51	1,48	95,59
1,00	0,00	1,92	1,88	93,71
0,710	0,49	2,31	2,27	91,44
0,500	1,00	7,44	7,30	84,14
0,355	1,49	21,49	21,10	63,04
0,250	2,00	42,03	41,26	21,77
0,180	2,47	16,95	16,64	5,13
0,125	3,00	3,33	3,27	1,87
0,090	3,47	0,50	0,49	1,37
0,075	3,74	0,08	0,08	1,30
0,063	3,99	0,03	0,03	1,27
< 0,063	> 3,99	1,29	1,27	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,27
Sand, fine	(0,063 mm - 0,200 mm): 8,62
Sand, medium	(0,2 mm - 0,6 mm): 77,72
Sand, coarse	(0,6 mm - 2 mm): 9,46
Gravel	(> 2 mm): 2,93
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,27	-0,35
16%	84%	0,50	1,00
25%	75%	0,44	1,19
40%	60%	0,35	1,53
Median 50%	50%	0,32	1,64
75%	25%	0,26	1,95
84%	16%	0,23	2,15
90%	10%	0,20	2,32
95%	5%	0,18	2,49

Moments Statistics

Mean	1,60
Sorting	0,72
Skewness	-0,25
Kurtosis	1,53
Uniformity Coefficient	1,73

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

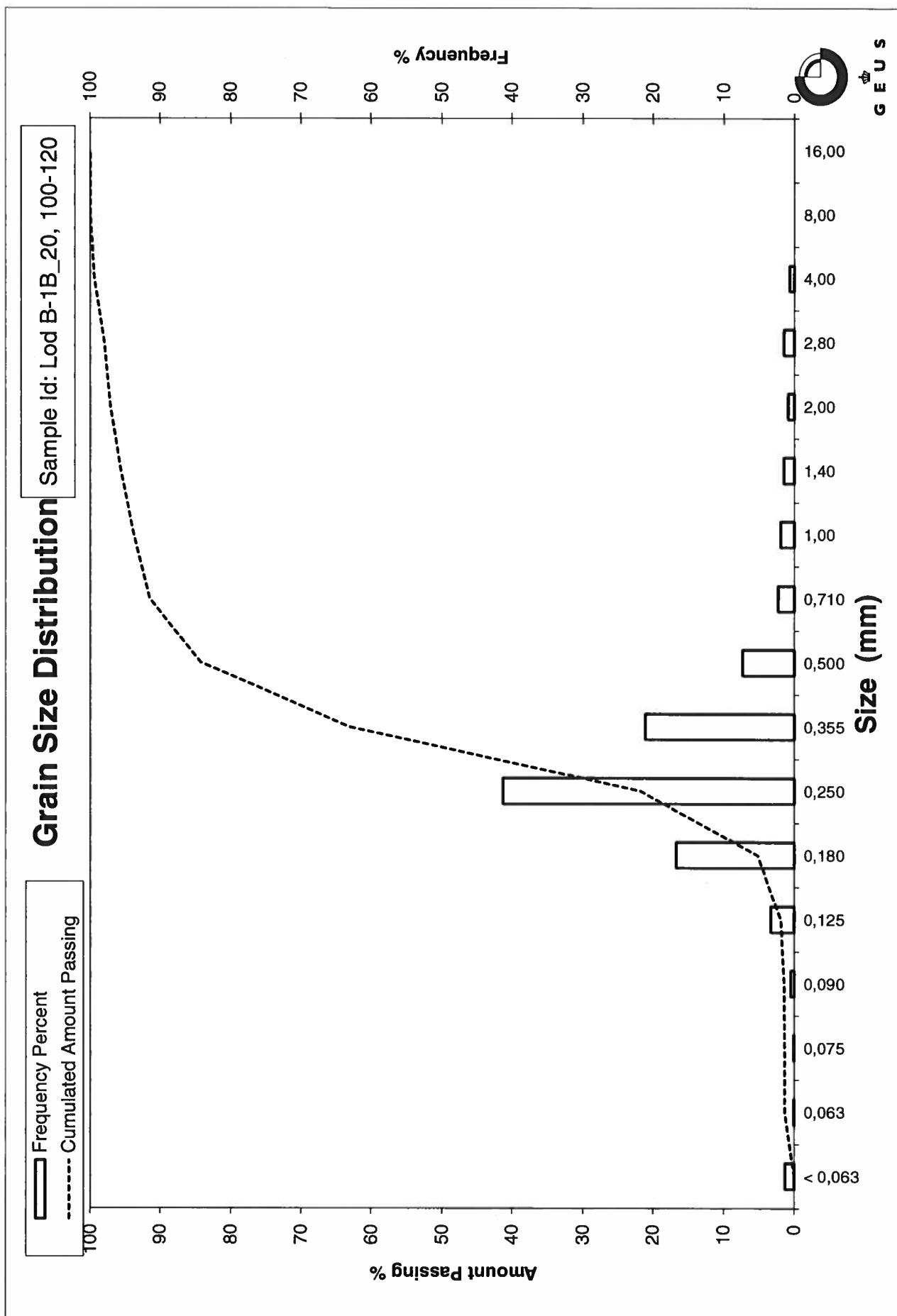
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_20, 200-220
Lab. Id: 200774
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks: >4mm heraf 0,05g skaller



Total Weight 102,7 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,34	0,33	99,67
2,80	-1,49	0,46	0,45	99,22
2,00	-1,00	0,47	0,46	98,76
1,40	-0,49	1,10	1,07	97,69
1,00	0,00	2,72	2,65	95,04
0,710	0,49	2,94	2,86	92,18
0,500	1,00	8,67	8,44	83,74
0,355	1,49	23,79	23,16	60,57
0,250	2,00	39,90	38,85	21,72
0,180	2,47	17,35	16,89	4,83
0,125	3,00	3,43	3,34	1,49
0,090	3,47	0,52	0,51	0,98
0,075	3,74	0,07	0,07	0,92
0,063	3,99	0,02	0,02	0,90
< 0,063	> 3,99	0,92	0,90	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,90
Sand, fine	(0,063 mm - 0,200 mm): 8,76
Sand, medium	(0,2 mm - 0,6 mm): 78,10
Sand, coarse	(0,6 mm - 2 mm): 11,00
Gravel	(> 2 mm): 1,24
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	1,00	0,01
16%	84%	0,51	0,98
25%	75%	0,45	1,17
40%	60%	0,35	1,50
Median 50%	50%	0,33	1,62
75%	25%	0,26	1,95
84%	16%	0,23	2,14
90%	10%	0,20	2,31
95%	5%	0,18	2,47

Moments Statistics

Mean	1,58
Sorting	0,66
Skewness	-0,20
Kurtosis	1,29
Uniformity Coefficient	1,75

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

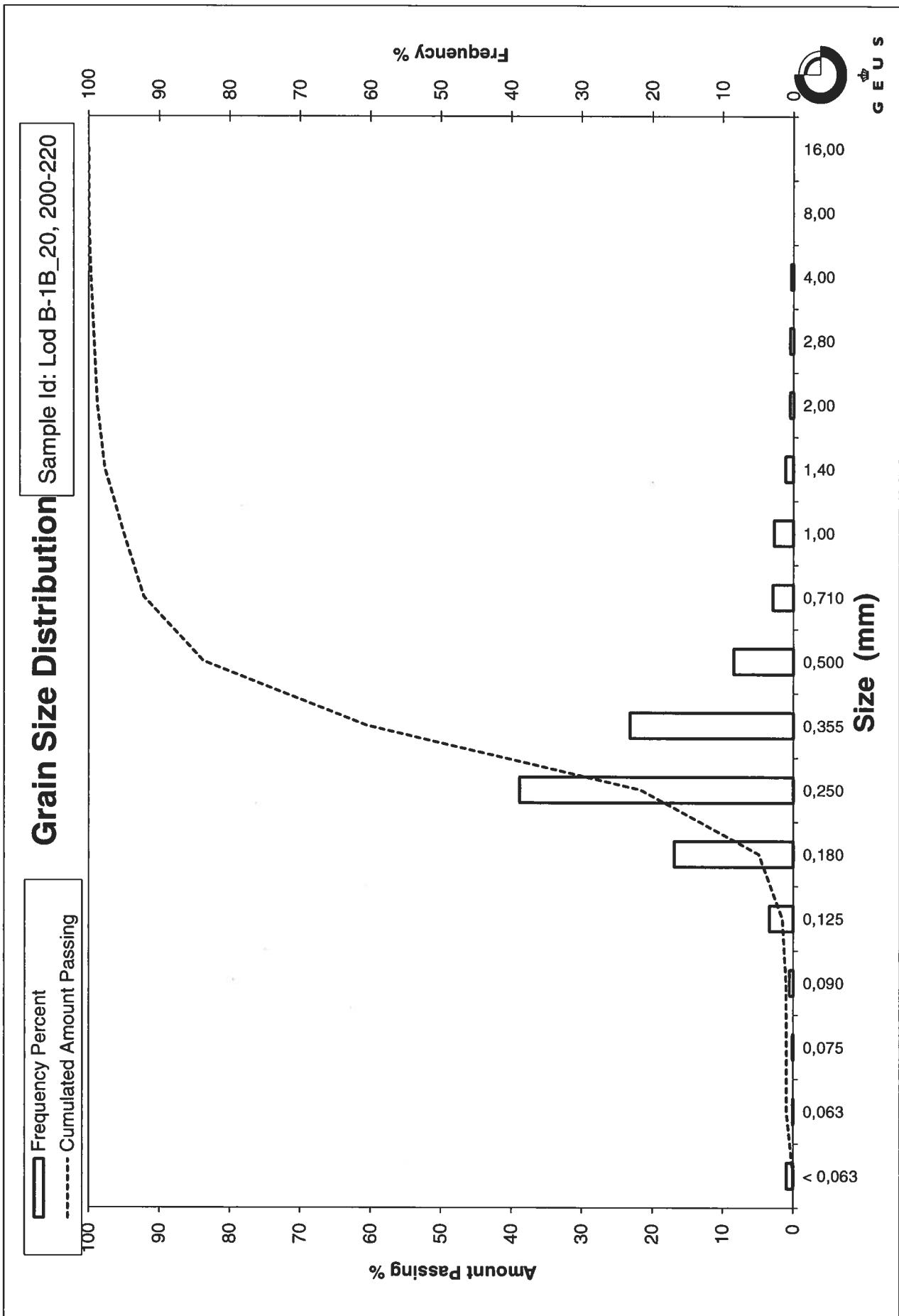
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgr-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_20, 300-320
Lab. Id: 200775
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 105,85 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,12	0,11	99,89
2,00	-1,00	0,08	0,08	99,81
1,40	-0,49	0,09	0,09	99,73
1,00	0,00	0,34	0,32	99,40
0,710	0,49	0,81	0,77	98,64
0,500	1,00	5,69	5,38	93,26
0,355	1,49	22,33	21,10	72,17
0,250	2,00	45,58	43,06	29,11
0,180	2,47	23,17	21,89	7,22
0,125	3,00	5,08	4,80	2,42
0,090	3,47	0,65	0,61	1,80
0,075	3,74	0,11	0,10	1,70
0,063	3,99	0,07	0,07	1,63
< 0,063	> 3,99	1,73	1,63	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,63
Sand, fine	(0,063 mm - 0,200 mm): 11,84
Sand, medium	(0,2 mm - 0,6 mm): 82,35
Sand, coarse	(0,6 mm - 2 mm): 3,99
Gravel	(> 2 mm): 0,19
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,57	0,82
16%	84%	0,44	1,20
25%	75%	0,37	1,42
40%	60%	0,33	1,62
Median 50%	50%	0,30	1,73
75%	25%	0,24	2,08
84%	16%	0,21	2,26
90%	10%	0,19	2,40
95%	5%	0,15	2,69

Moments Statistics

Mean	1,73
Sorting	0,55
Skewness	0,01
Kurtosis	1,16
Uniformity Coefficient	1,72

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

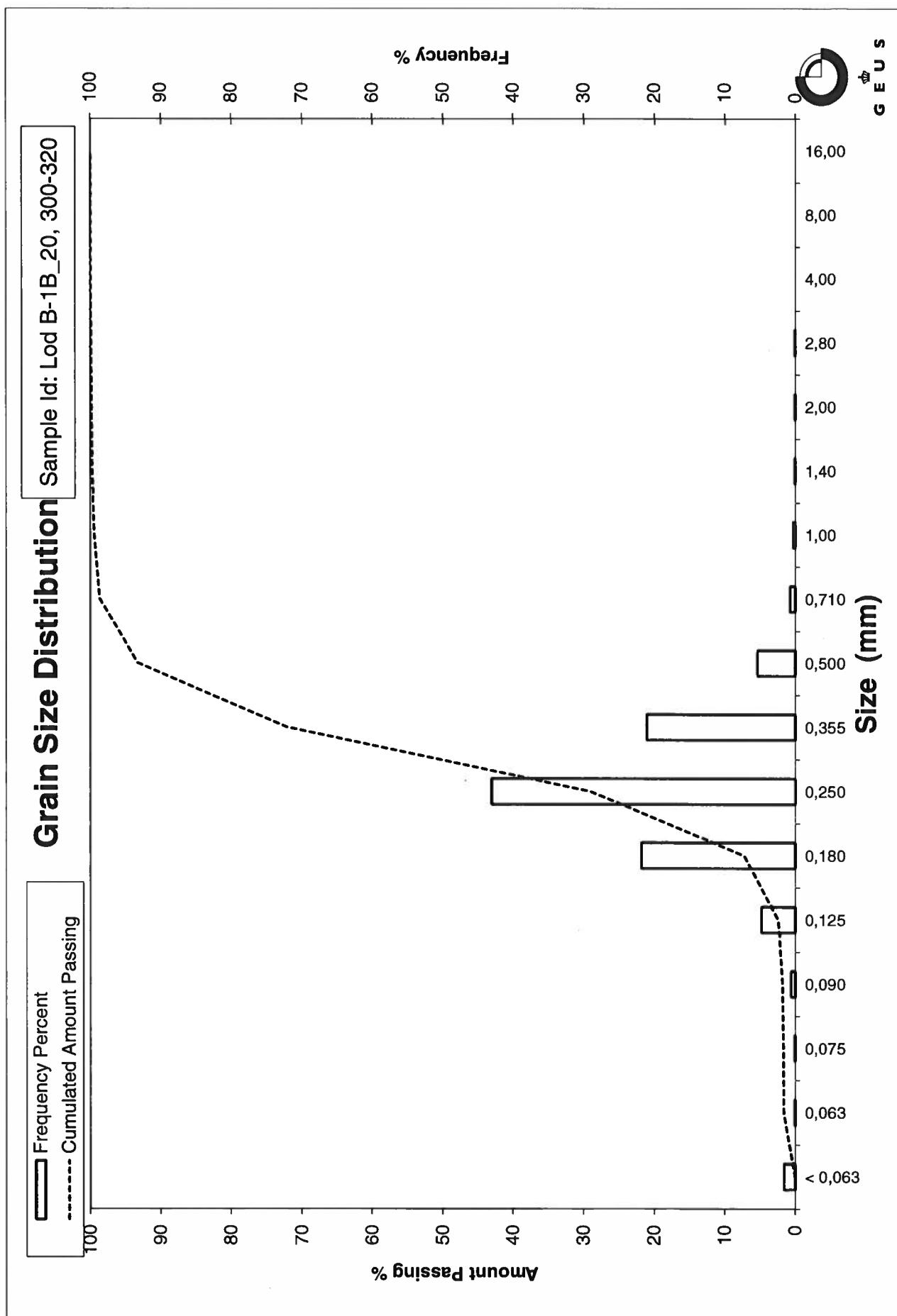
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d60\% / d10\%) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_20, 400-420
Lab. Id: 200776
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 103,47 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,31	0,30	99,70
2,00	-1,00	0,42	0,41	99,29
1,40	-0,49	0,75	0,72	98,57
1,00	0,00	1,77	1,71	96,86
0,710	0,49	2,29	2,21	94,65
0,500	1,00	8,01	7,74	86,90
0,355	1,49	20,40	19,72	67,19
0,250	2,00	33,66	32,53	34,66
0,180	2,47	26,52	25,63	9,03
0,125	3,00	6,77	6,54	2,48
0,090	3,47	0,82	0,79	1,69
0,075	3,74	0,14	0,14	1,56
0,063	3,99	0,08	0,08	1,48
< 0,063	> 3,99	1,53	1,48	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,48
Sand, fine	(0,063 mm - 0,200 mm): 14,87
Sand, medium	(0,2 mm - 0,6 mm): 74,24
Sand, coarse	(0,6 mm - 2 mm): 8,70
Gravel	(> 2 mm): 0,71
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,76	0,40
16%	84%	0,48	1,06
25%	75%	0,41	1,28
40%	60%	0,33	1,59
Median 50%	50%	0,30	1,74
75%	25%	0,22	2,16
84%	16%	0,20	2,33
90%	10%	0,18	2,45
95%	5%	0,15	2,77

Moments Statistics

Mean	1,71
Sorting	0,68
Skewness	-0,10
Kurtosis	1,10
Uniformity Coefficient	1,82

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

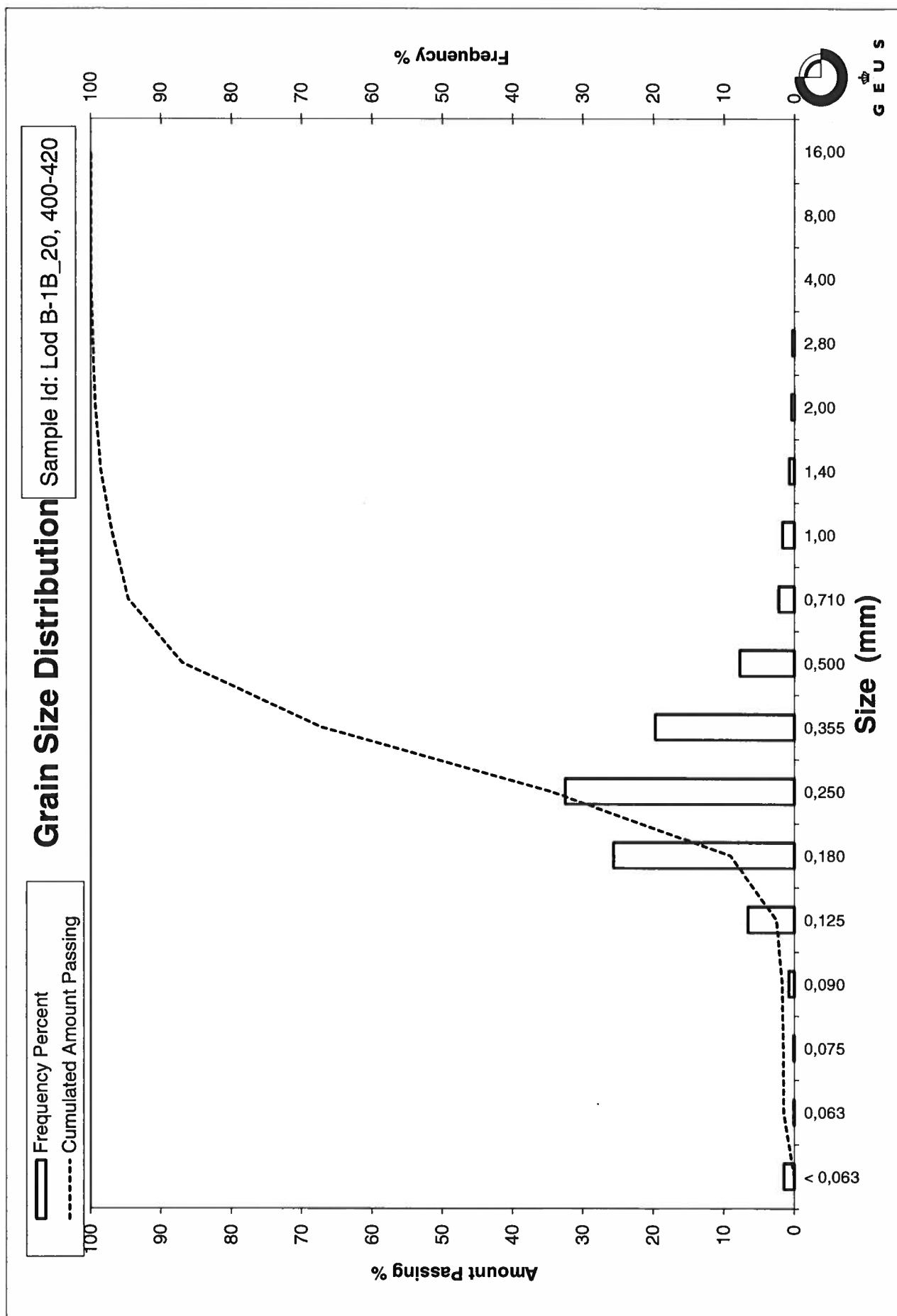
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_20, 500-520
Lab. Id: 200777
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks: >16mm heraf 105g >32mm



Total Weight 723,31 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	240,67	33,27	66,73
8,00	-3,00	88,34	12,21	54,51
4,00	-2,00	40,61	5,61	48,90
2,80	-1,49	32,31	4,47	44,43
2,00	-1,00	23,86	3,30	41,13
1,40	-0,49	22,01	3,04	38,09
1,00	0,00	23,09	3,19	34,90
0,710	0,49	24,43	3,38	31,52
0,500	1,00	38,57	5,33	26,19
0,355	1,49	33,65	4,65	21,54
0,250	2,00	48,21	6,67	14,87
0,180	2,47	49,71	6,87	8,00
0,125	3,00	30,12	4,16	3,83
0,090	3,47	7,72	1,07	2,77
0,075	3,74	2,84	0,39	2,37
0,063	3,99	2,50	0,35	2,03
< 0,063	> 3,99	14,67	2,03	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 2,03
Sand, fine	(0,063 mm - 0,200 mm): 7,93
Sand, medium	(0,2 mm - 0,6 mm): 18,77
Sand, coarse	(0,6 mm - 2 mm): 12,41
Gravel	(> 2 mm): 58,87
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing	-----	-----
5%	95%	-----	-----
16%	84%	-----	-----
25%	75%	-----	-----
40%	60%	11,59	-3,54
Median 50%	50%	4,78	-2,26
75%	25%	0,46	1,11
84%	16%	0,27	1,90
90%	10%	0,20	2,32
95%	5%	0,14	2,83

Moments Statistics

Mean	-0,18
Sorting	-----
Skewness	-----
Kurtosis	-----
Uniformity Coefficient	57,86

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

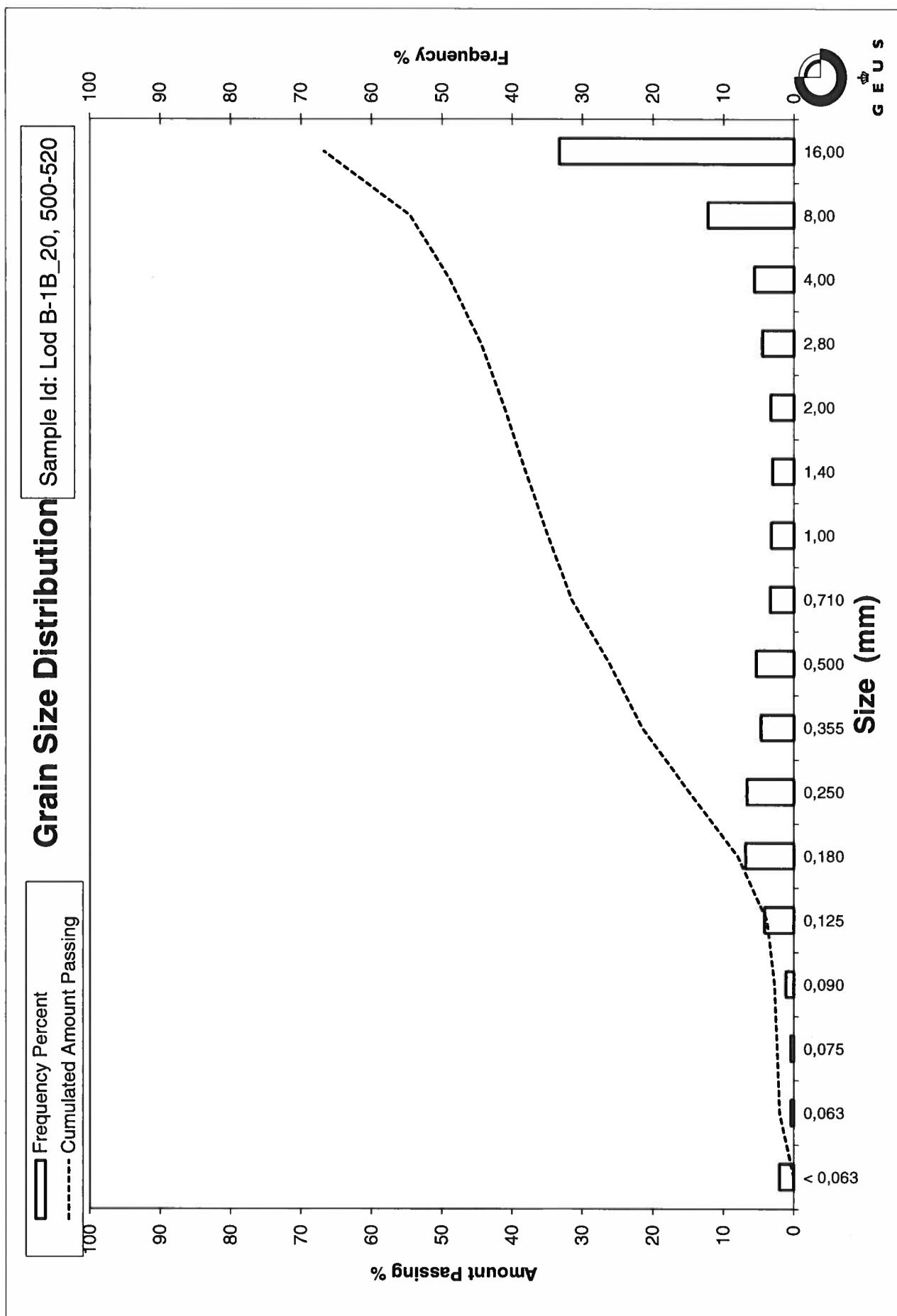
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d60\% / d10\%)$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_22, 0-20
Lab. Id: 200778
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks: >4mm består af skaller



Total Weight 104,08 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,07	0,07	99,93
2,80	-1,49	0,00	0,00	99,93
2,00	-1,00	0,10	0,10	99,84
1,40	-0,49	0,22	0,21	99,63
1,00	0,00	0,60	0,58	99,05
0,710	0,49	0,79	0,76	98,29
0,500	1,00	3,39	3,26	95,03
0,355	1,49	19,97	19,19	75,85
0,250	2,00	45,05	43,28	32,56
0,180	2,47	24,70	23,73	8,83
0,125	3,00	6,10	5,86	2,97
0,090	3,47	1,39	1,34	1,63
0,075	3,74	0,30	0,29	1,35
0,063	3,99	0,17	0,16	1,18
< 0,063	> 3,99	1,23	1,18	0,00

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,18
Sand, fine	(0,063 mm - 0,200 mm): 14,43
Sand, medium	(0,2 mm - 0,6 mm): 80,97
Sand, coarse	(0,6 mm - 2 mm): 3,25
Gravel	(> 2 mm): 0,16
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,50	1,00
16%	84%	0,42	1,26
25%	75%	0,35	1,50
40%	60%	0,32	1,66
Median 50%	50%	0,29	1,77
75%	25%	0,23	2,13
84%	16%	0,20	2,31
90%	10%	0,18	2,45
95%	5%	0,14	2,80

Moments Statistics

Mean	1,78
Sorting	0,53
Skewness	0,08
Kurtosis	1,16
Uniformity Coefficient	1,73

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

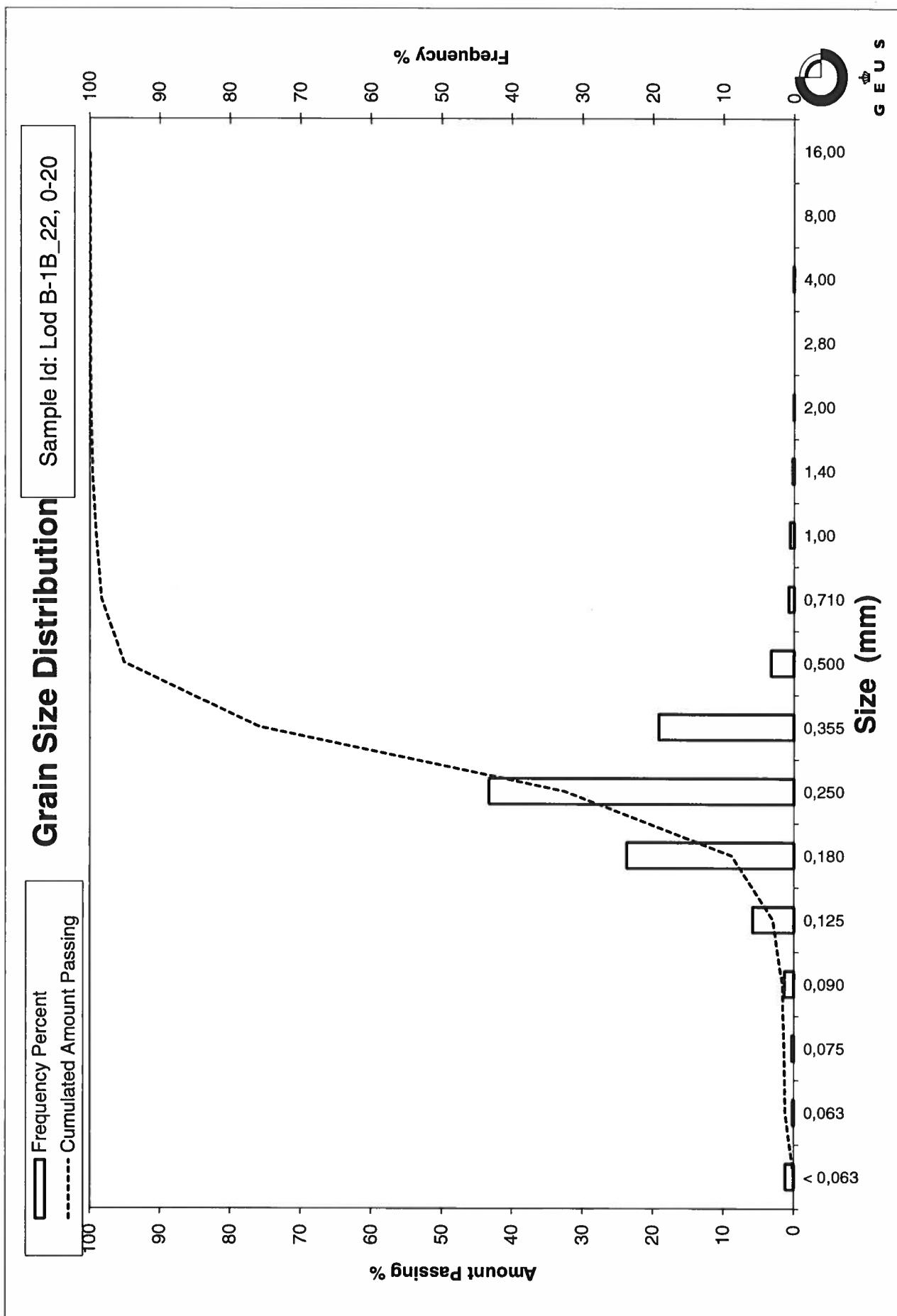
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_28, 0-20
Lab. Id: 200779
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 116,57 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,87	0,75	99,25
2,80	-1,49	1,91	1,64	97,62
2,00	-1,00	1,33	1,14	96,47
1,40	-0,49	2,24	1,92	94,55
1,00	0,00	3,24	2,78	91,77
0,710	0,49	7,27	6,24	85,54
0,500	1,00	19,40	16,64	68,89
0,355	1,49	34,67	29,74	39,15
0,250	2,00	35,90	30,80	8,36
0,180	2,47	7,86	6,74	1,61
0,125	3,00	1,22	1,05	0,57
0,090	3,47	0,15	0,13	0,44
0,075	3,74	0,01	0,01	0,43
0,063	3,99	0,00	0,00	0,43
< 0,063	> 3,99	0,50	0,43	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,43
Sand, fine	(0,063 mm - 0,200 mm): 3,11
Sand, medium	(0,2 mm - 0,6 mm): 73,28
Sand, coarse	(0,6 mm - 2 mm): 19,66
Gravel	(> 2 mm): 3,53
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,54	-0,62
16%	84%	0,69	0,53
25%	75%	0,58	0,79
40%	60%	0,46	1,13
Median 50%	50%	0,41	1,29
75%	25%	0,31	1,70
84%	16%	0,28	1,86
90%	10%	0,26	1,97
95%	5%	0,22	2,22

Moments Statistics

Mean	1,23
Sorting	0,76
Skewness	-0,25
Kurtosis	1,28
Uniformity Coefficient	1,79

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

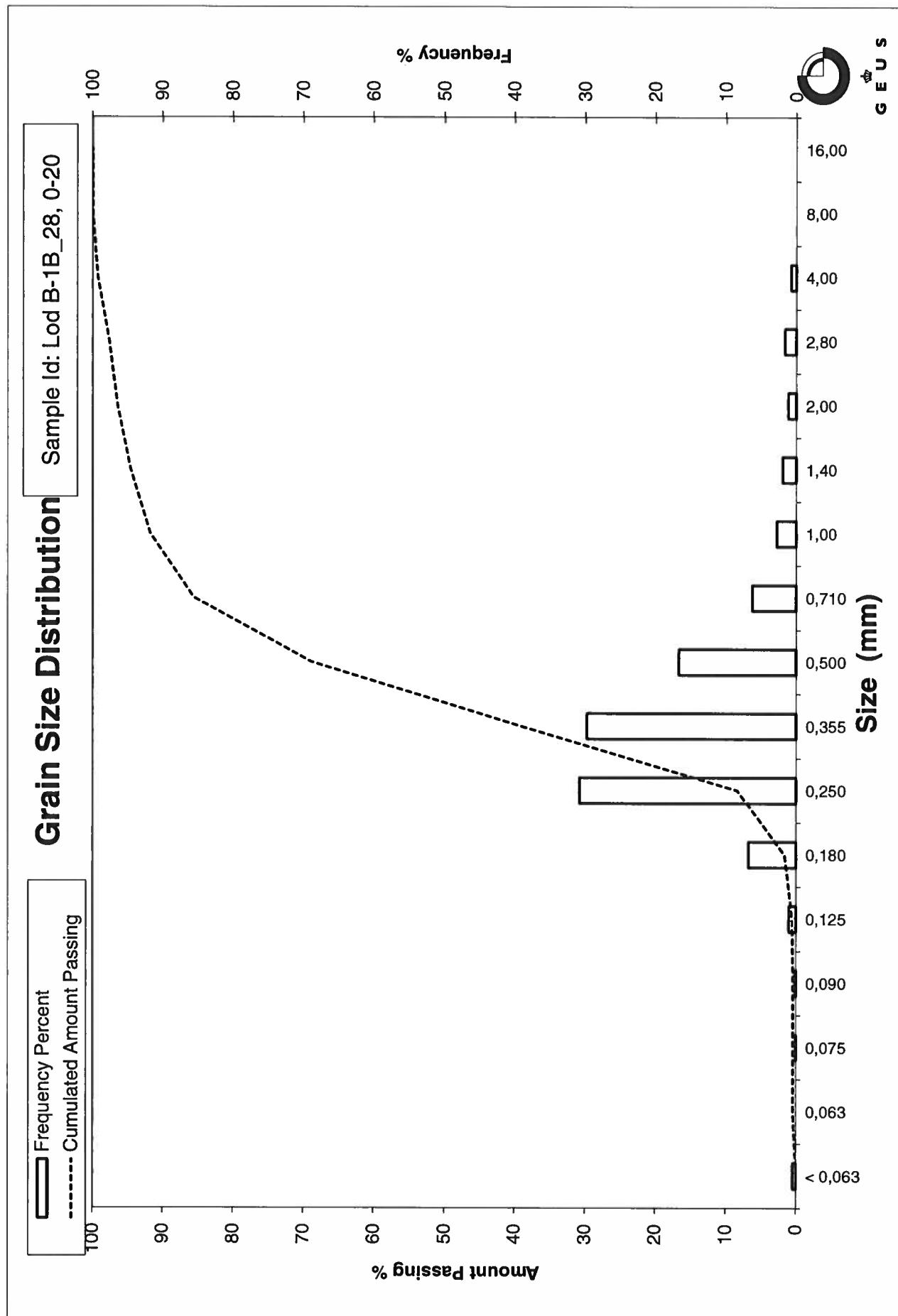
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d_{60\%} / d_{10\%}) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_28, 100-120
Lab. Id: 200780
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 114,44 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,73	0,64	99,36
2,80	-1,49	0,97	0,85	98,51
2,00	-1,00	1,19	1,04	97,47
1,40	-0,49	1,90	1,66	95,81
1,00	0,00	3,14	2,74	93,07
0,710	0,49	6,14	5,37	87,71
0,500	1,00	15,91	13,90	73,80
0,355	1,49	33,33	29,12	44,68
0,250	2,00	37,34	32,63	12,05
0,180	2,47	11,49	10,04	2,01
0,125	3,00	1,48	1,29	0,72
0,090	3,47	0,18	0,16	0,56
0,075	3,74	0,00	0,00	0,56
0,063	3,99	0,00	0,00	0,56
< 0,063	> 3,99	0,64	0,56	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,56
Sand, fine	(0,063 mm - 0,200 mm): 4,32
Sand, medium	(0,2 mm - 0,6 mm): 75,54
Sand, coarse	(0,6 mm - 2 mm): 17,05
Gravel	(> 2 mm): 2,53
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,28	-0,36
16%	84%	0,65	0,61
25%	75%	0,52	0,95
40%	60%	0,43	1,21
Median 50%	50%	0,38	1,39
75%	25%	0,29	1,78
84%	16%	0,26	1,93
90%	10%	0,24	2,08
95%	5%	0,20	2,32

Moments Statistics

Mean	1,31
Sorting	0,73
Skewness	-0,24
Kurtosis	1,32
Uniformity Coefficient	1,83

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

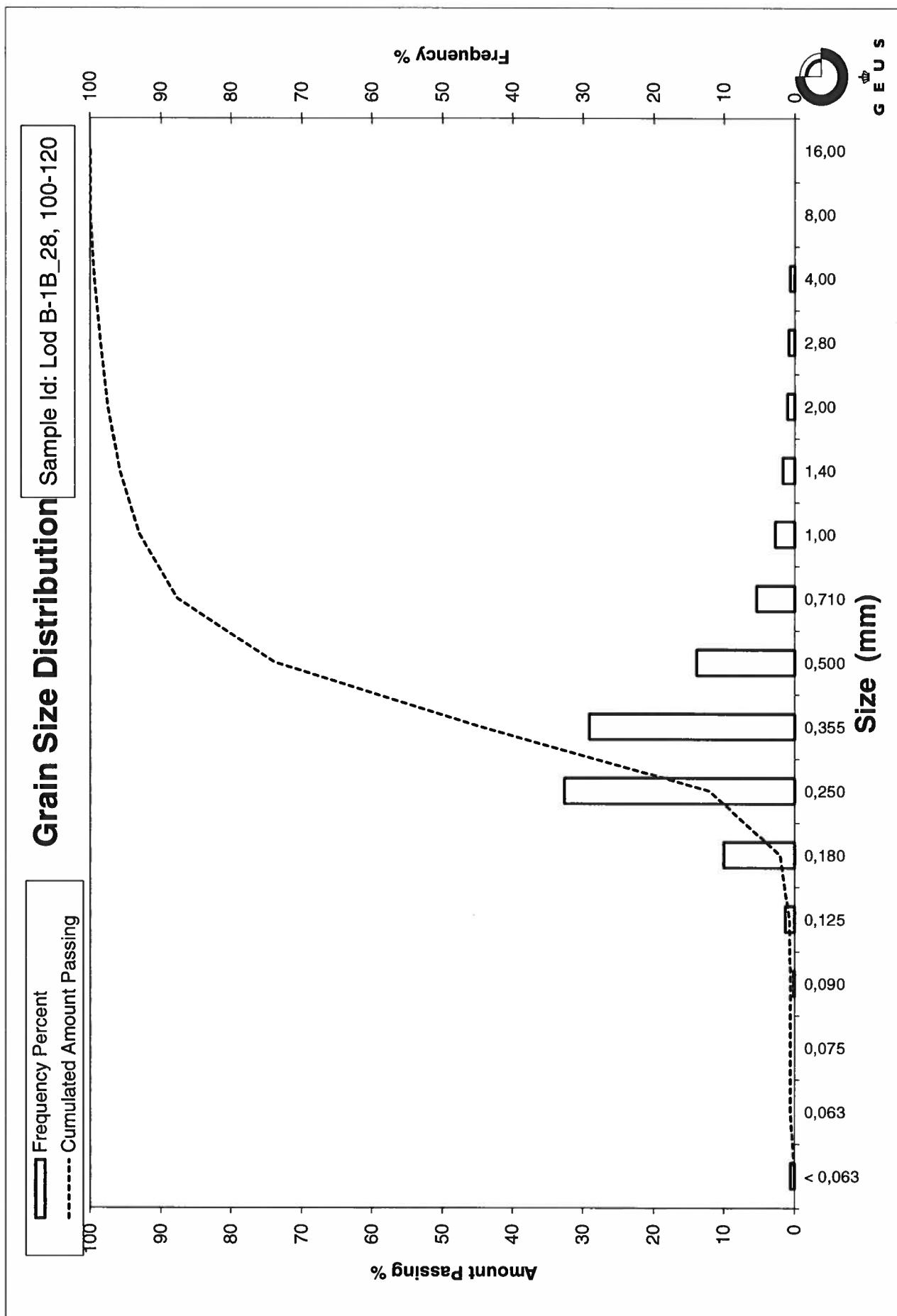
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_28, 200-220
Lab. Id: 200781
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 109,91 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,10	0,09	99,91
2,80	-1,49	0,07	0,06	99,85
2,00	-1,00	0,04	0,04	99,81
1,40	-0,49	0,07	0,06	99,75
1,00	0,00	0,24	0,22	99,53
0,710	0,49	0,59	0,54	98,99
0,500	1,00	3,57	3,25	95,74
0,355	1,49	20,31	18,48	77,26
0,250	2,00	56,38	51,30	25,97
0,180	2,47	23,65	21,52	4,45
0,125	3,00	4,00	3,64	0,81
0,090	3,47	0,51	0,46	0,35
0,075	3,74	0,05	0,05	0,30
0,063	3,99	0,01	0,01	0,29
< 0,063	> 3,99	0,32	0,29	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,29
Sand, fine	(0,063 mm - 0,200 mm): 10,31
Sand, medium	(0,2 mm - 0,6 mm): 86,69
Sand, coarse	(0,6 mm - 2 mm): 2,52
Gravel	(> 2 mm): 0,19
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,49	1,02
16%	84%	0,41	1,29
25%	75%	0,35	1,51
40%	60%	0,32	1,65
Median 50%	50%	0,30	1,74
75%	25%	0,25	2,02
84%	16%	0,22	2,20
90%	10%	0,20	2,34
95%	5%	0,18	2,46

Moments Statistics

Mean	1,75
Sorting	0,45
Skewness	0,01
Kurtosis	1,17
Uniformity Coefficient	1,61

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

$$\text{Mean } (\phi 16\% + \phi 84\% + \phi 50\%) / 3 \text{ (Folk and Ward 1957)}$$

$$\text{Sorting } (\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6 \text{ (Folk and Ward 1957)}$$

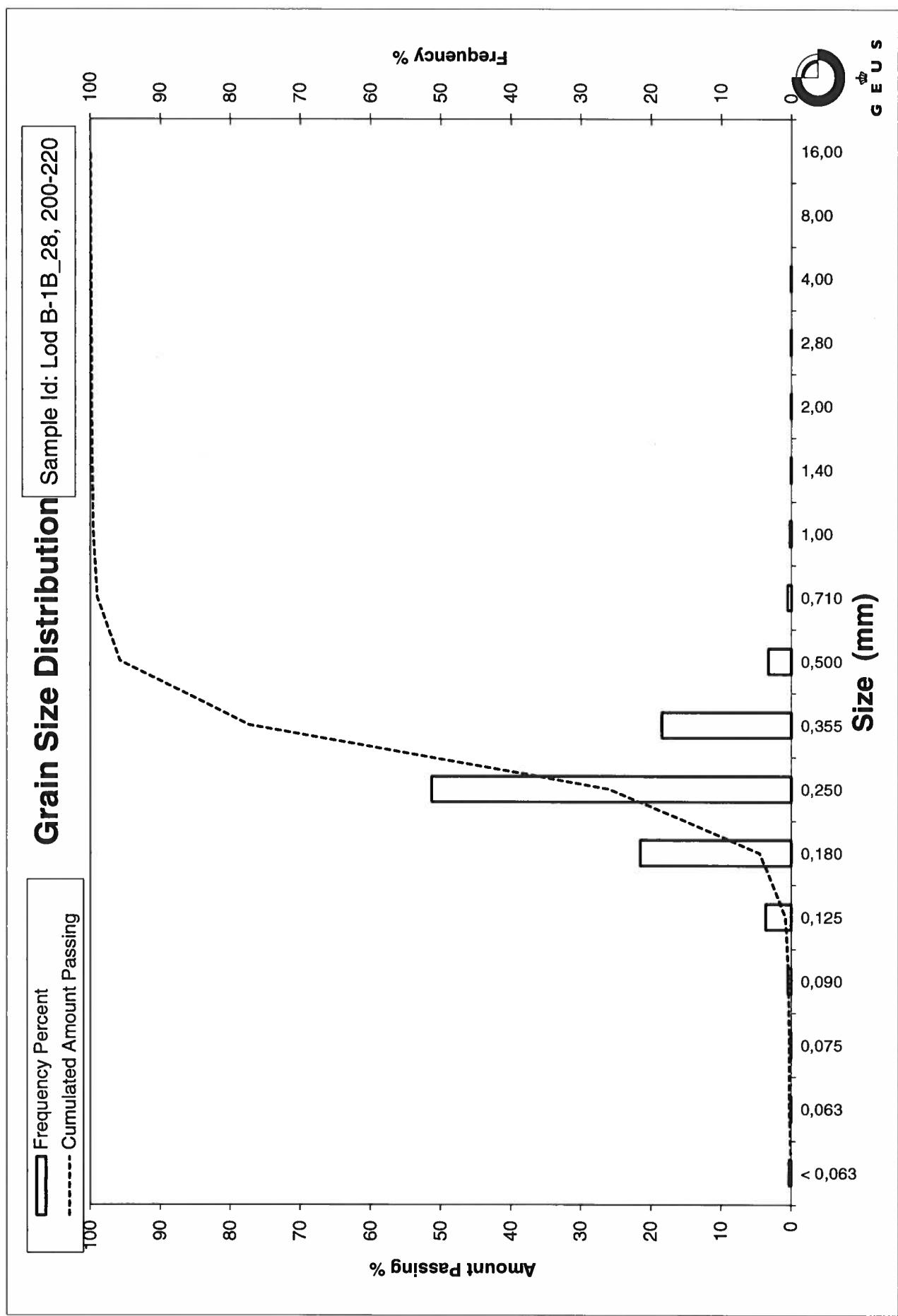
$$\text{Kurtosis } (\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Skewness } (\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%)) \text{ (Folk and Ward 1957)}$$

$$\text{Uniformity Coefficient } (d60\% / d10\%) \text{ (dgf-Bulletin 1988)}$$

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_28, 290-310
Lab. Id: 200782
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 100,32 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,00	0,00	100,00
2,80	-1,49	0,00	0,00	100,00
2,00	-1,00	0,00	0,00	100,00
1,40	-0,49	0,00	0,00	100,00
1,00	0,00	0,05	0,05	99,95
0,710	0,49	0,32	0,32	99,63
0,500	1,00	1,15	1,15	98,48
0,355	1,49	8,44	8,41	90,07
0,250	2,00	41,91	41,78	48,30
0,180	2,47	37,47	37,35	10,94
0,125	3,00	8,52	8,49	2,45
0,090	3,47	1,44	1,44	1,02
0,075	3,74	0,28	0,28	0,74
0,063	3,99	0,12	0,12	0,62
< 0,063	> 3,99	0,62	0,62	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,62
Sand, fine	(0,063 mm - 0,200 mm):	21,00
Sand, medium	(0,2 mm - 0,6 mm):	77,41
Sand, coarse	(0,6 mm - 2 mm):	0,97
Gravel	(> 2 mm):	0,00
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile		
Amount in sieve	Amount passing	d(mm)	Φ
5%	95%	0,44	1,18
16%	84%	0,34	1,56
25%	75%	0,32	1,66
40%	60%	0,28	1,84
Median 50%	50%	0,25	1,98
75%	25%	0,21	2,28
84%	16%	0,19	2,40
90%	10%	0,17	2,52
95%	5%	0,14	2,82

Moments Statistics

Mean	1,98
Sorting	0,46
Skewness	0,02
Kurtosis	1,08
Uniformity Coefficient	1,61

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

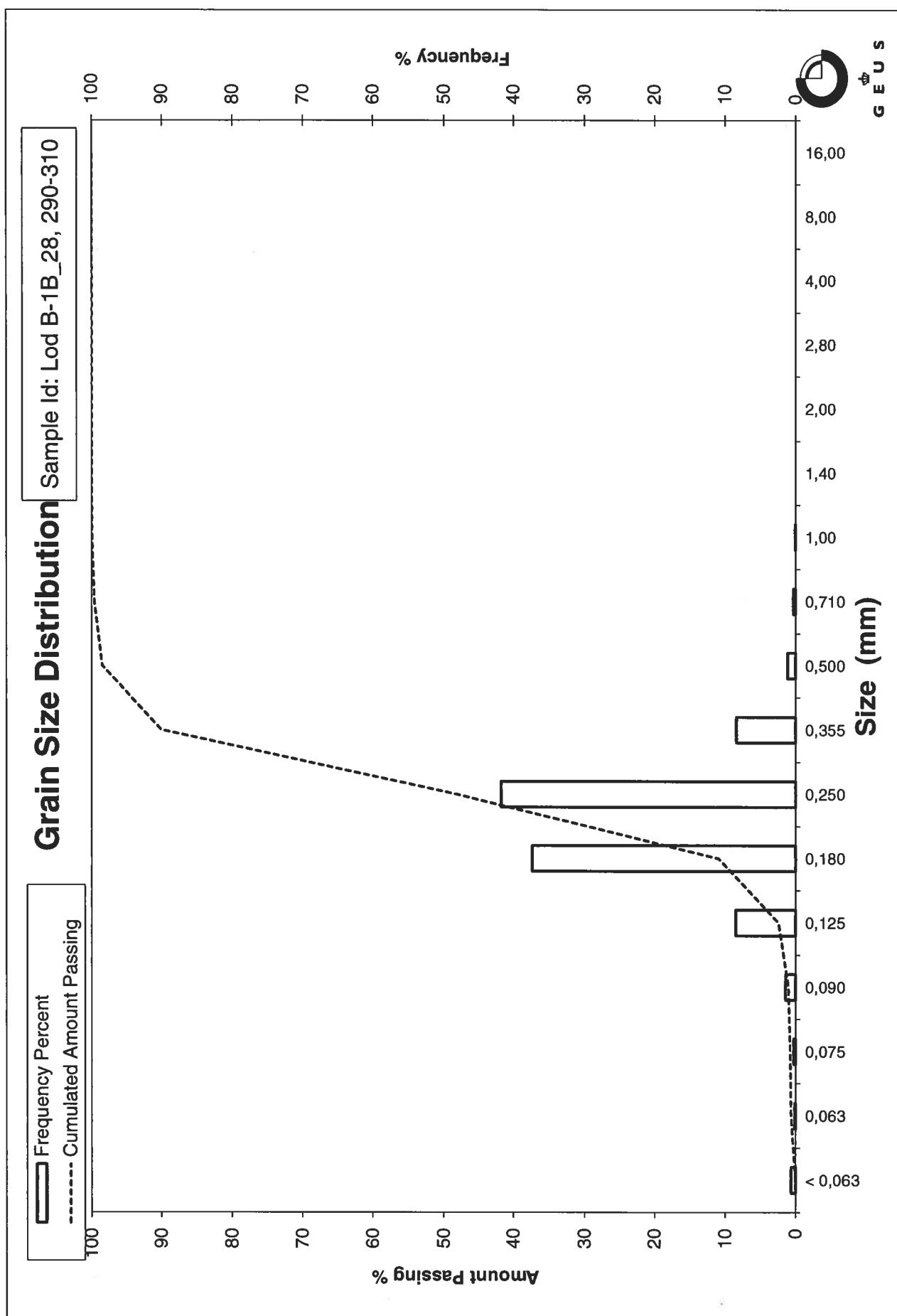
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient $(d_{60\%} / d_{10\%})$ (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

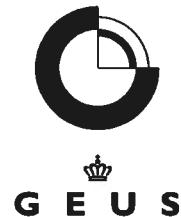
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Email: GEUS@geus.dk
www.geus.dk



Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_33, 0-20
Lab. Id: 200783
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 103,53 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,00	0,00	100,00
4,00	-2,00	0,19	0,18	99,82
2,80	-1,49	0,01	0,01	99,81
2,00	-1,00	0,42	0,41	99,40
1,40	-0,49	0,80	0,77	98,63
1,00	0,00	1,15	1,11	97,52
0,710	0,49	2,75	2,66	94,86
0,500	1,00	10,79	10,42	84,44
0,355	1,49	28,95	27,96	56,48
0,250	2,00	42,25	40,81	15,67
0,180	2,47	12,63	12,20	3,47
0,125	3,00	2,22	2,14	1,32
0,090	3,47	0,34	0,33	0,99
0,075	3,74	0,05	0,05	0,95
0,063	3,99	0,01	0,01	0,94
< 0,063	> 3,99	0,97	0,94	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	0,94
Sand, fine	(0,063 mm - 0,200 mm):	6,02
Sand, medium	(0,2 mm - 0,6 mm):	82,45
Sand, coarse	(0,6 mm - 2 mm):	10,00
Gravel	(> 2 mm):	0,60
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,73	0,46
16%	84%	0,50	1,01
25%	75%	0,45	1,15
40%	60%	0,37	1,42
Median 50%	50%	0,34	1,56
75%	25%	0,27	1,87
84%	16%	0,25	2,00
90%	10%	0,22	2,20
95%	5%	0,19	2,41

Moments Statistics

Mean	1,52
Sorting	0,54
Skewness	-0,13
Kurtosis	1,11
Uniformity Coefficient	1,72

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean $(\phi 16\% + \phi 84\% + \phi 50\%) / 3$ (Folk and Ward 1957)

Sorting $(\phi 84\% - \phi 16\%) / 4 + (\phi 95\% - \phi 5\%) / 6,6$ (Folk and Ward 1957)

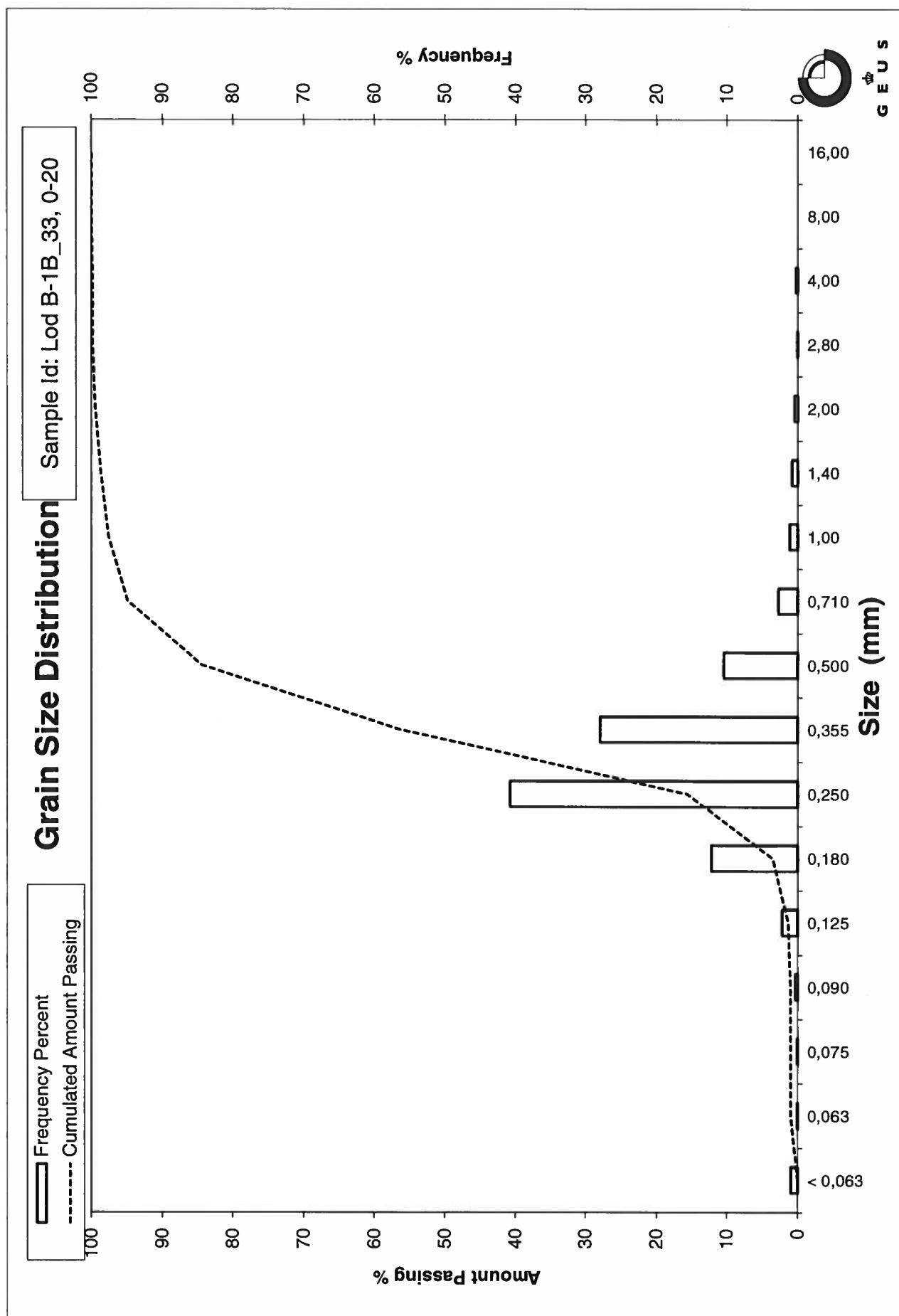
Kurtosis $(\phi 95\% - \phi 5\%) / (2,44 * (\phi 75\% - \phi 25\%))$ (Folk and Ward 1957)

Skewness $(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$ (Folk and Ward 1957)

Uniformity Coefficient (d_{60} / d_{10}) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_33, 100-120
Lab. Id: 200784
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks: >8mm består af skaller



Total Weight 107,29 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,11	0,10	99,90
4,00	-2,00	0,34	0,32	99,58
2,80	-1,49	0,41	0,38	99,20
2,00	-1,00	0,43	0,40	98,80
1,40	-0,49	0,78	0,73	98,07
1,00	0,00	1,73	1,61	96,46
0,710	0,49	3,19	2,97	93,48
0,500	1,00	11,78	10,98	82,51
0,355	1,49	32,03	29,85	52,65
0,250	2,00	40,49	37,74	14,91
0,180	2,47	12,78	11,91	3,00
0,125	3,00	1,97	1,84	1,17
0,090	3,47	0,26	0,24	0,92
0,075	3,74	0,03	0,03	0,89
0,063	3,99	0,00	0,00	0,89
< 0,063	> 3,99	0,96	0,89	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,89
Sand, fine	(0,063 mm - 0,200 mm): 5,51
Sand, medium	(0,2 mm - 0,6 mm): 81,33
Sand, coarse	(0,6 mm - 2 mm): 11,06
Gravel	(> 2 mm): 1,20
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,86	0,22
16%	84%	0,53	0,92
25%	75%	0,46	1,11
40%	60%	0,39	1,36
Median 50%	50%	0,35	1,52
75%	25%	0,28	1,85
84%	16%	0,25	1,98
90%	10%	0,22	2,18
95%	5%	0,19	2,38

Moments Statistics

Mean	1,48
Sorting	0,59
Skewness	-0,17
Kurtosis	1,20
Uniformity Coefficient	1,77

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

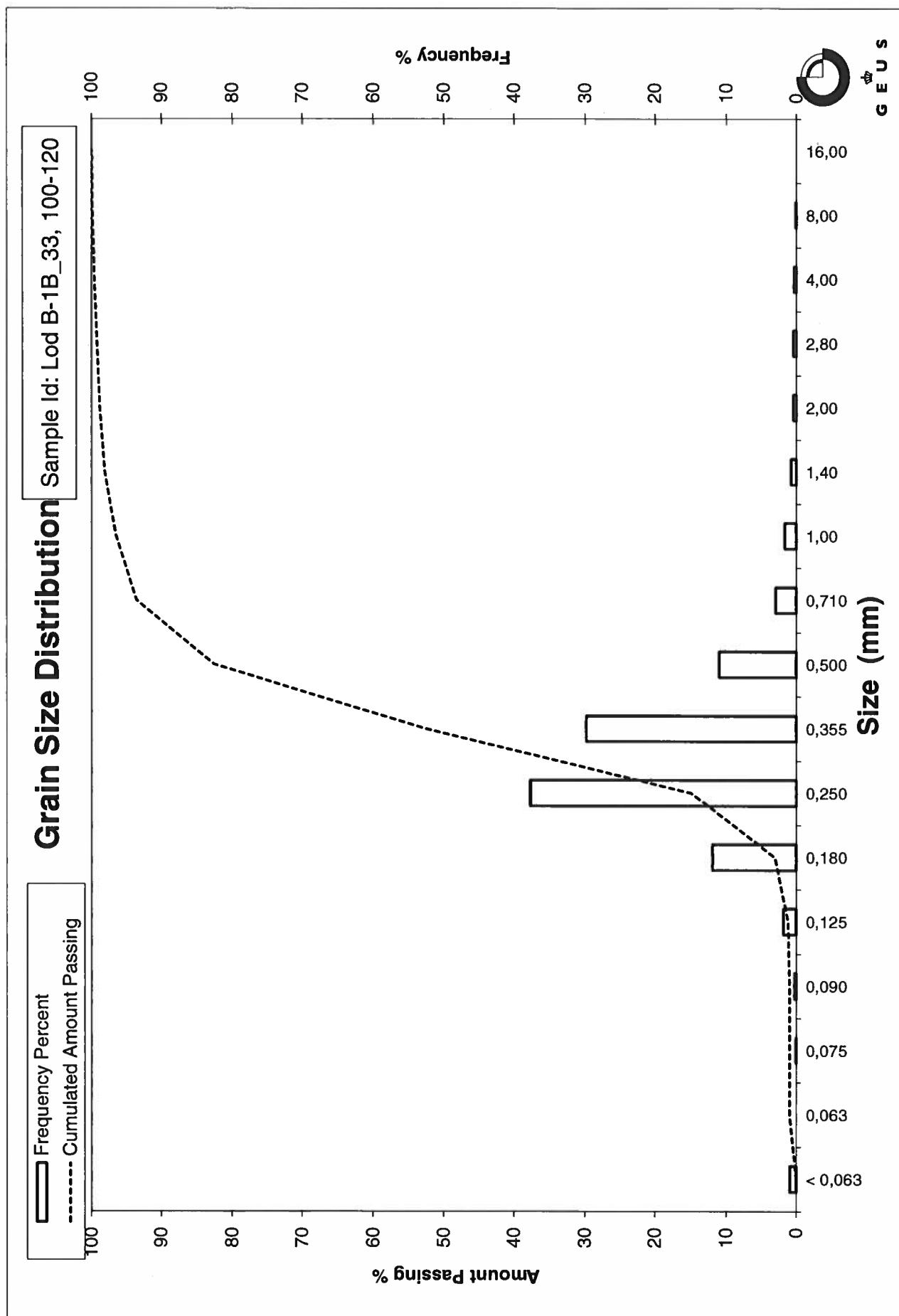
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient (d_{60} / d_{10}) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_33, 200-220
Lab. Id: 200785
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 105,25 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	0,65	0,62	99,38
4,00	-2,00	1,09	1,04	98,35
2,80	-1,49	0,65	0,62	97,73
2,00	-1,00	0,50	0,48	97,25
1,40	-0,49	1,27	1,21	96,05
1,00	0,00	2,02	1,92	94,13
0,710	0,49	3,93	3,73	90,39
0,500	1,00	13,22	12,56	77,83
0,355	1,49	30,08	28,58	49,25
0,250	2,00	38,52	36,60	12,66
0,180	2,47	10,31	9,80	2,86
0,125	3,00	1,69	1,61	1,25
0,090	3,47	0,23	0,22	1,04
0,075	3,74	0,00	0,00	1,04
0,063	3,99	0,00	0,00	1,04
< 0,063	> 3,99	1,09	1,04	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 1,04
Sand, fine	(0,063 mm - 0,200 mm): 4,62
Sand, medium	(0,2 mm - 0,6 mm): 78,16
Sand, coarse	(0,6 mm - 2 mm): 13,44
Gravel	(> 2 mm): 2,75
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	1,18	-0,24
16%	84%	0,60	0,73
25%	75%	0,49	1,04
40%	60%	0,41	1,29
Median 50%	50%	0,36	1,48
75%	25%	0,29	1,81
84%	16%	0,26	1,95
90%	10%	0,23	2,11
95%	5%	0,20	2,36

Moments Statistics

Mean	1,38
Sorting	0,70
Skewness	-0,28
Kurtosis	1,39
Uniformity Coefficient	1,77

The analysis is executed according to DS 405.9 extended by sieves to the $\frac{1}{2}$ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

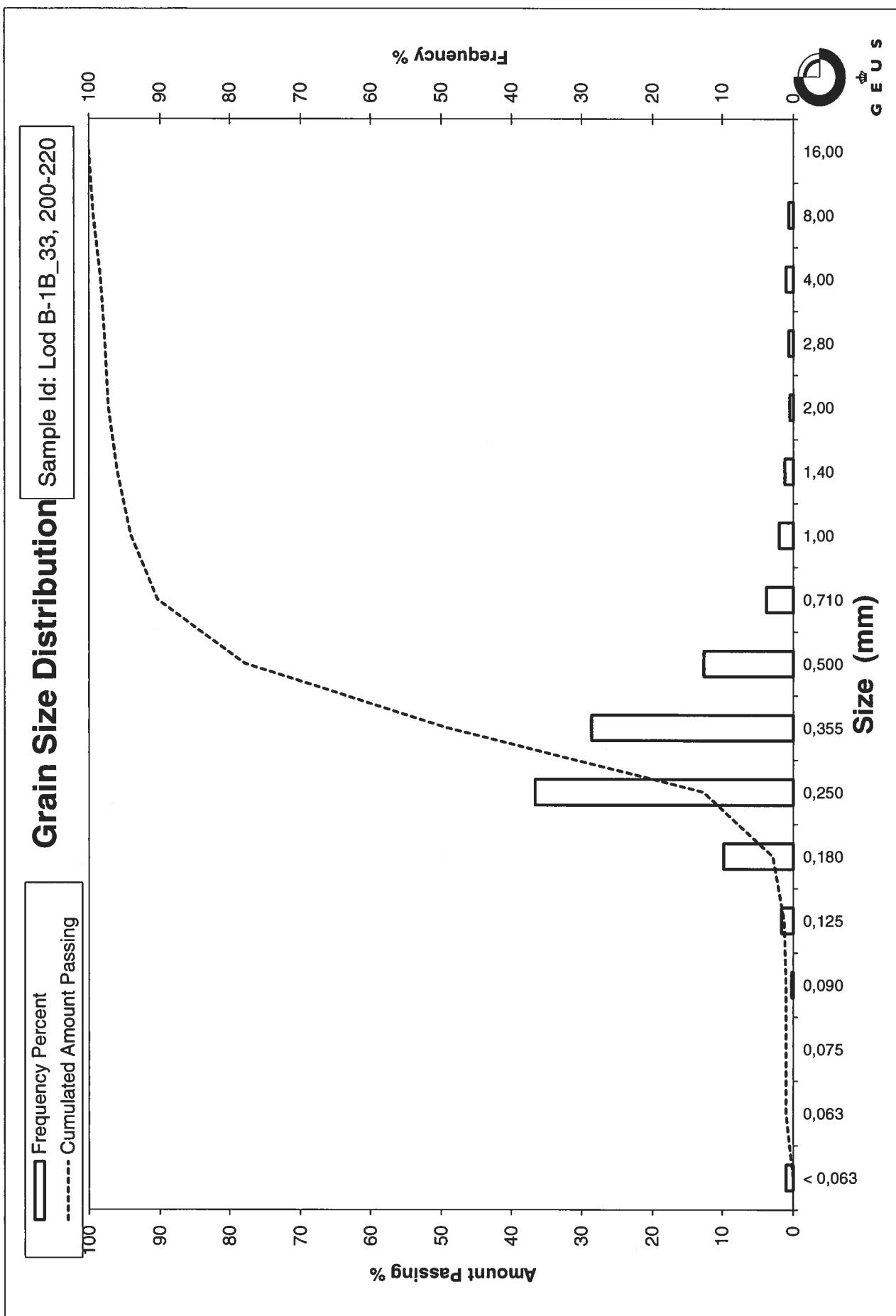
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($\phi 16\% + \phi 84\% - 2 * \phi 50\% / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient (d_{60} / d_{10}) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_33, 300-320
Lab. Id: 200786
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks:



Total Weight 119,09 g

Size Fractions

Size	Size	Weight	Weight	Cumulated amount passing
mm	Φ	g	%	%
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	5,08	4,27	95,73
4,00	-2,00	0,00	0,00	95,73
2,80	-1,49	0,36	0,30	95,43
2,00	-1,00	0,85	0,71	94,72
1,40	-0,49	0,93	0,78	93,94
1,00	0,00	2,58	2,17	91,77
0,710	0,49	3,85	3,23	88,54
0,500	1,00	10,82	9,09	79,45
0,355	1,49	30,58	25,68	53,77
0,250	2,00	44,41	37,29	16,48
0,180	2,47	15,14	12,71	3,77
0,125	3,00	2,73	2,29	1,48
0,090	3,47	0,41	0,34	1,13
0,075	3,74	0,08	0,07	1,07
0,063	3,99	0,01	0,01	1,06
< 0,063	> 3,99	1,26	1,06	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

		Weight %
Silt and clay	(< 0,063 mm):	1,06
Sand, fine	(0,063 mm - 0,200 mm):	6,34
Sand, medium	(0,2 mm - 0,6 mm):	76,38
Sand, coarse	(0,6 mm - 2 mm):	10,94
Gravel	(> 2 mm):	5,28
Sum:		100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	2,32	-1,21
16%	84%	0,61	0,72
25%	75%	0,47	1,07
40%	60%	0,39	1,36
Median 50%	50%	0,34	1,54
75%	25%	0,27	1,87
84%	16%	0,25	2,02
90%	10%	0,21	2,22
95%	5%	0,19	2,42

Moments Statistics

Mean	1,43
Sorting	0,87
Skewness	-0,39
Kurtosis	1,88
Uniformity Coefficient	1,82

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

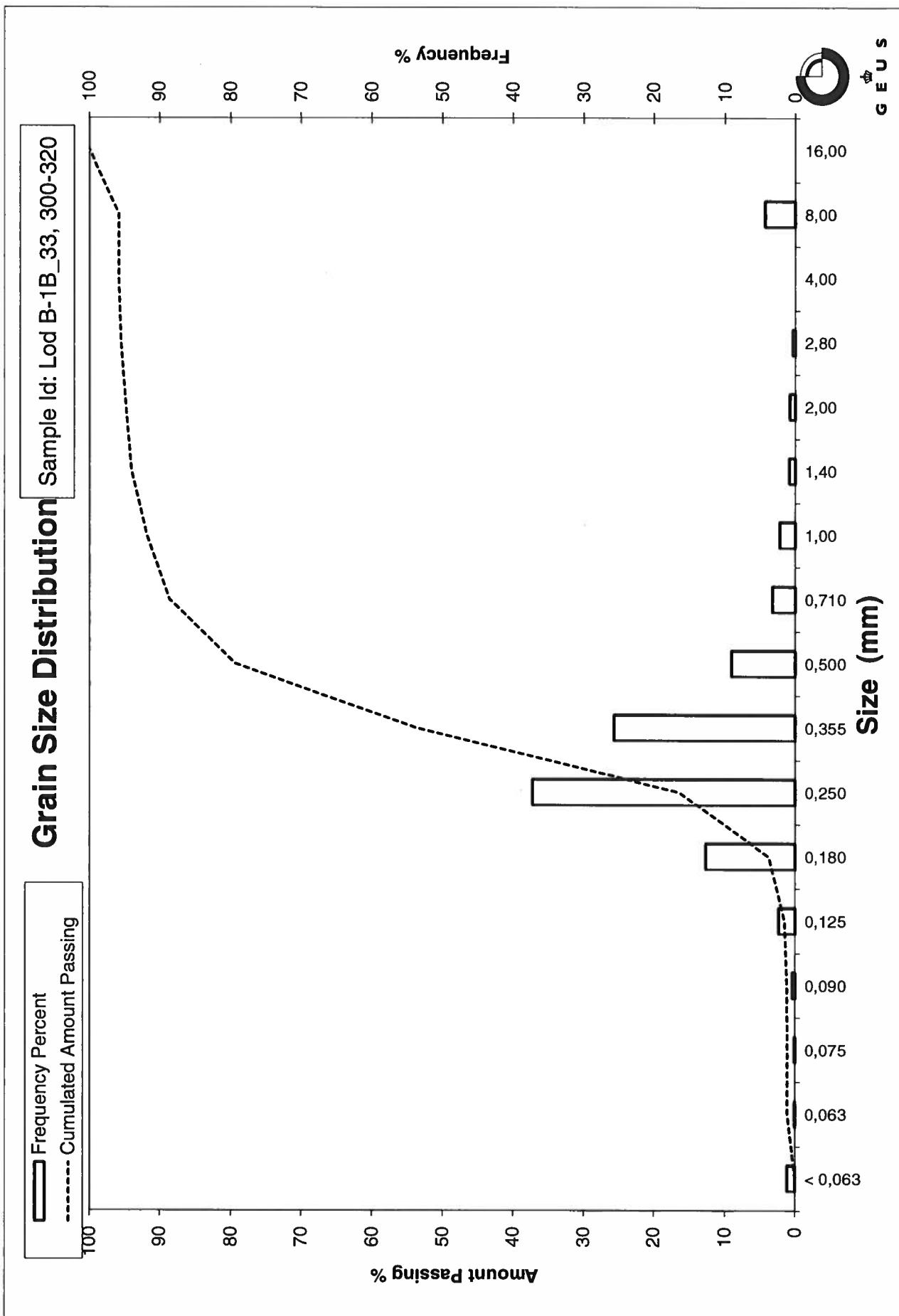
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($(\phi 16\% + \phi 84\% - 2 * \phi 50\%) / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\%) / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient ($d_{60\%} / d_{10\%}$) (dgr-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Grain Size Distribution

Geotechnical

Sample Id: Lod B-1B_33, 400-420
Lab. Id: 200787
Projekt Kystdirektoratet
Subject: 0
Date: december 2020
Executed: PS
Remarks: >8mm heraf 0,4g skaller



Total Weight 101,85 g

Size Fractions

Size mm	Size Φ	Weight g	Weight %	Cumulated amount passing %
16,00	-4,00	0,00	0,00	100,00
8,00	-3,00	1,00	0,98	99,02
4,00	-2,00	0,34	0,33	98,68
2,80	-1,49	0,24	0,24	98,45
2,00	-1,00	0,49	0,48	97,97
1,40	-0,49	0,73	0,72	97,25
1,00	0,00	1,57	1,54	95,71
0,710	0,49	3,12	3,06	92,65
0,500	1,00	8,84	8,68	83,97
0,355	1,49	24,11	23,67	60,29
0,250	2,00	41,94	41,18	19,12
0,180	2,47	15,03	14,76	4,36
0,125	3,00	3,02	2,97	1,39
0,090	3,47	0,46	0,45	0,94
0,075	3,74	0,06	0,06	0,88
0,063	3,99	0,03	0,03	0,85
< 0,063	> 3,99	0,87	0,85	0,00

Sieve Analysis

Gravel

Sand

Size Classes (DGF-Bulletin 1 1988)

	Weight %
Silt and clay	(< 0,063 mm): 0,85
Sand, fine	(0,063 mm - 0,200 mm): 7,72
Sand, medium	(0,2 mm - 0,6 mm): 79,52
Sand, coarse	(0,6 mm - 2 mm): 9,87
Gravel	(> 2 mm): 2,03
Sum:	100,00

Moments Measures (Folk and Wards)

Percentile	Percentile	d(mm)	Φ
Amount in sieve	Amount passing		
5%	95%	0,93	0,10
16%	84%	0,50	1,00
25%	75%	0,45	1,17
40%	60%	0,35	1,50
Median 50%	50%	0,33	1,60
75%	25%	0,27	1,92
84%	16%	0,24	2,09
90%	10%	0,21	2,27
95%	5%	0,18	2,45

Moments Statistics

Mean	1,56
Sorting	0,63
Skewness	-0,20
Kurtosis	1,29
Uniformity Coefficient	1,71

The analysis is executed according to DS 405.9 extended by sieves to the ½ phi scale

Size Classes and Percentiles are found by linear interpolation

Formulas

Mean ($\phi 16\% + \phi 84\% + \phi 50\% / 3$) (Folk and Ward 1957)

Sorting ($\phi 84\% - \phi 16\% / 4 + (\phi 95\% - \phi 5\%) / 6,6$) (Folk and Ward 1957)

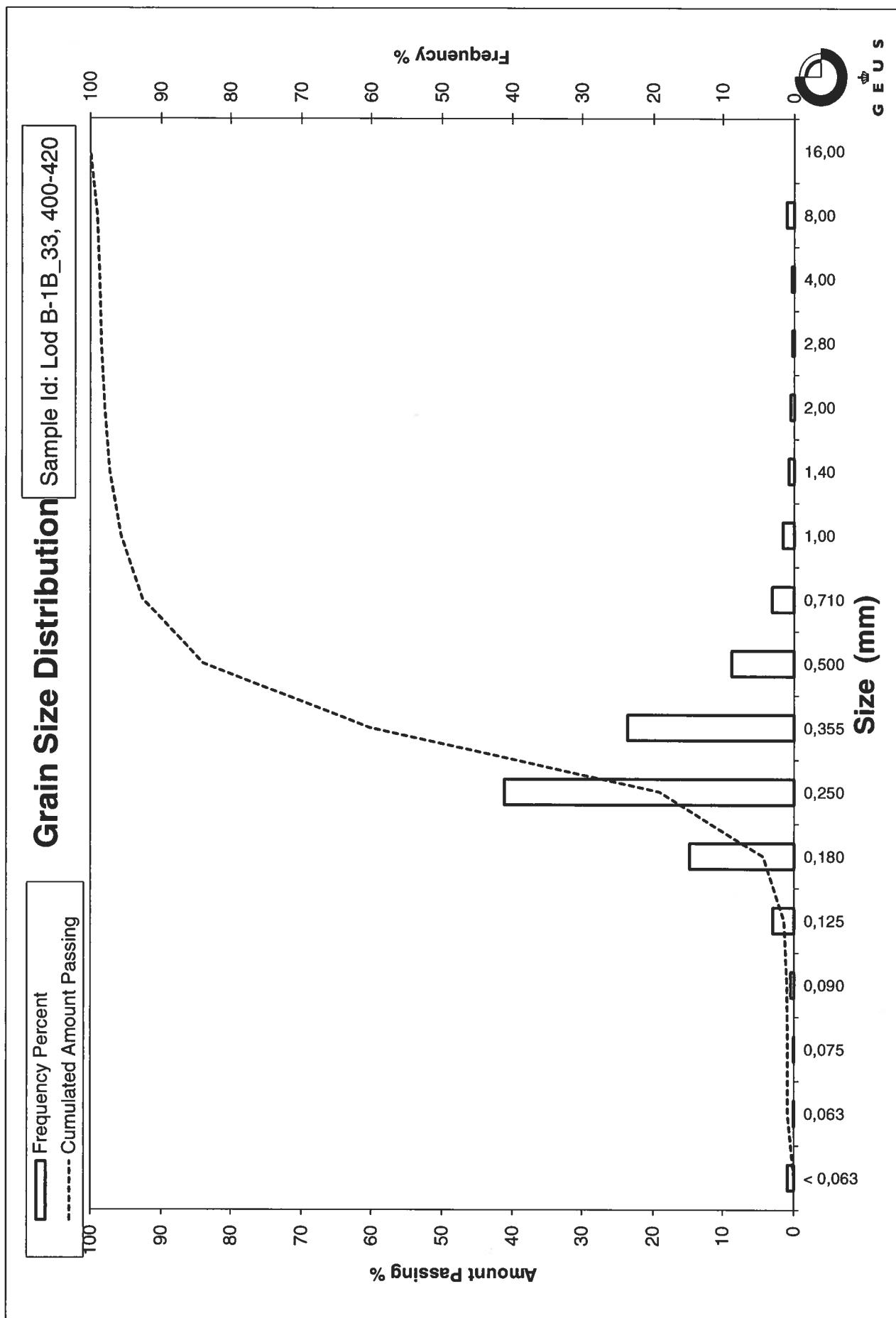
Kurtosis ($\phi 95\% - \phi 5\% / (2,44 * (\phi 75\% - \phi 25\%))$) (Folk and Ward 1957)

Skewness ($\phi 16\% + \phi 84\% - 2 * \phi 50\% / (2 * (\phi 84\% - \phi 16\%)) + (\phi 5\% + \phi 95\% - 2 * \phi 50\% / (2 * (\phi 95\% - \phi 5\%))$) (Folk and Ward 1957)

Uniformity Coefficient (d_{60} / d_{10}) (dgf-Bulletin 1988)

Mean, sorting, skewness and kurtosis are based on "Amount in sieve". Uniformity coefficient is based on "Amount passing".

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Bilag E1

HAPS feltbeskrivelser (WSP)

Punkt	Sediment	Dybde (m)	Y d.d (WGS 84)	X d.d (WGS 84)
LOD_A_S01	SAND, groft	28.3	56.92410	8.01461
LOD_A_S02	SAND, groft og GRUS, fint	26.4	56.92072	8.00756
LOD_A_S03	SAND, mellum	26.9	56.92073	8.01762
LOD_A_S04	SAND, mellem - groft	25.9	56.91544	8.02110
LOD_A_S05	SAND, mellem - groft	26.1	56.91537	8.01124
LOD_A_S06	SAND, mellem og LER, fedt	26.5	56.91529	8.00139
LOD_A_S07	SAND, mellem - groft	26.5	56.91413	7.99157
LOD_A_S08	SAND, mellem - groft	26	56.90974	7.98183
LOD_A_S09	SAND, mellem - groft	25.8	56.90982	7.99168
LOD_A_S10	SAND, mellem - groft	27.8	56.90990	8.00153
LOD_A_S11	SAND, mellem - groft	26.9	56.90998	8.01139
LOD_A_S12	SAND, mellem - groft og LER	25.5	56.91005	8.02124
LOD_A_S13	SAND, mellem	25.6	56.90466	8.02138
LOD_A_S14	SAND, mellem - groft	26.8	56.90459	8.01153
LOD_A_S15	SAND, mellem	26.7	56.90451	8.00168
LOD_A_S16	SAND, groft og GRUS, fint	26.2	56.90443	7.99183
LOD_A_S17	SAND, mellem	26.8	56.90435	7.98198
LOD_A_S18	SAND, groft og GRUS, fint	28.2	56.90427	7.97213
LOD_A_S19	SAND, mellem	28.5	56.89888	7.97228
LOD_A_S20	SAND, mellem	26.6	56.89896	7.98212
LOD_A_S21	SAND, groft	27.8	56.89904	7.99197
LOD_A_S22	SAND, mellem	25.6	56.89912	8.00182
LOD_A_S23	SAND, mellem	24.9	56.89920	8.01167
LOD_A_S24	SAND, mellem - groft	28.1	56.89927	8.02152
LOD_A_S25	SAND, groft og GRUS, fint	28.5	56.89389	8.02166
LOD_A_S26	SAND, mellem	27.1	56.89381	8.01181
LOD_A_S27	SAND, mellem - groft	28.2	56.89373	8.00197
LOD_A_S28	SAND, fint - mellem	27.8	56.89365	7.99212
LOD_A_S29	SAND, mellem	27.6	56.89357	7.98227
LOD_A_S30	SAND, fint - mellem	28.4	56.89349	7.97242
LOD_A_S31	SAND, fint - mellem	28.7	56.89059	7.96862
LOD_A_S32	SAND, fint - mellem	27.2	56.88810	7.97257
LOD_A_S33	SAND, mellem - groft	26.5	56.88818	7.98242
LOD_A_S34	SAND, mellem - groft	26.8	56.88826	7.99226
LOD_A_S35	SAND, groft og GRUS, fint	26.1	56.88834	8.00211
LOD_A_S36	SAND, groft	27.4	56.88883	8.01203
LOD_A_S37	SAND, mellem - groft	28.6	56.89020	8.02176
LOD_A_S38	SAND, mellem - groft	26.9	56.88539	7.98863
LOD_A_S39	SAND, fint - mellem	27.6	56.88396	7.97816
LOD_A_S40	SAND, fint - mellem	26.8	56.88318	7.96871
LOD_B_S01	SAND, groft	28.5	57.01577	8.13774
LOD_B_S02	SAND, mellem - groft	24.1	57.01600	8.11474
LOD_B_S03	SAND, mellem - groft	24.8	57.01600	8.09345
LOD_B_S04	SAND, groft	26.8	57.01622	8.07101
LOD_B_S05	SAND, mellem - groft	28.9	57.01664	8.04995
LOD_B_S06	SAND, mellem - groft	32.2	57.01346	8.04411

LOD_B_S07	SAND, groft	29.9	57.01363	8.05557
LOD_B_S08	SAND, mellem - groft	28.9	57.01371	8.06627
LOD_B_S09	SAND, groft	26.6	57.01379	8.07698
LOD_B_S10	SAND, mellem - groft	25.1	57.01387	8.08768
LOD_B_S11	SAND, mellem	24.5	57.01395	8.09838
LOD_B_S12	SAND, groft	23	57.01403	8.10908
LOD_B_S13	SAND, mellem - groft	23	57.01410	8.11979
LOD_B_S14	SAND, groft	25.4	57.01418	8.13049
LOD_B_S15	SAND, groft	28	57.01005	8.12780
LOD_B_S16	SAND, groft	25.9	57.00826	8.11993
LOD_B_S17	SAND, groft	24.2	57.00819	8.10922
LOD_B_S18	SAND, mellem - groft	25.8	57.00811	8.09852
LOD_B_S19	SAND, fint	28.2	57.00803	8.08782
LOD_B_S20	SAND, groft	25.4	57.00795	8.07712
LOD_B_S21	SAND, groft	27	57.00788	8.06642
LOD_B_S22	SAND, groft	26.9	57.00780	8.05572
LOD_B_S23	GRUS, fint	28.5	57.00771	8.04502
LOD_B_S24	SAND, groft	31.9	57.00763	8.03432
LOD_B_S25	SAND, groft	30.6	57.00755	8.02362
LOD_B_S26	SAND, mellem - groft	34.3	57.00140	8.00597
LOD_B_S27	SAND, groft	33.5	57.00163	8.01307
LOD_B_S28	SAND, groft	31.7	57.00171	8.02377
LOD_B_S29	SAND, groft	33	57.00179	8.03447
LOD_B_S30	SAND, groft	30.5	57.00188	8.04517
LOD_B_S31	SAND, groft	28.1	57.00196	8.05587
LOD_B_S32	SAND, mellem	26.2	57.00204	8.06657
LOD_B_S33	SAND, mellem - groft	25.4	57.00212	8.07727
LOD_B_S34	SAND, mellem - groft	25.9	57.00219	8.08797
LOD_B_S35	SAND, groft	23.9	57.00227	8.09866
LOD_B_S36	SAND, mellem	25.3	57.00235	8.10936
LOD_B_S37	SAND, mellem	26.6	57.00448	8.11743
LOD_B_S38	SAND, mellem	26.5	56.99821	8.10679
LOD_B_S39	SAND, mellem - groft	24.9	56.99643	8.09881
LOD_B_S40	SAND, mellem	25.5	56.99636	8.08811
LOD_B_S41	SAND, mellem - groft	26.7	56.99628	8.07741
LOD_B_S42	SAND, mellem	24.7	56.99620	8.06671
LOD_B_S43	SAND, mellem - groft	25.8	56.99612	8.05602
LOD_B_S44	SAND, groft	28	56.99604	8.04532
LOD_B_S45	GRUS, fint	27.9	56.99596	8.03462
LOD_B_S46	SAND, mellem - groft	31.3	56.99587	8.02392
LOD_B_S47	SAND, groft	29.5	56.99072	8.03619
LOD_B_S48	SAND, groft	28.7	56.99020	8.04547
LOD_B_S49	SAND, groft	25.8	56.99028	8.05616
LOD_B_S50	SAND, mellem	24.9	56.99036	8.06686
LOD_B_S51	SAND, mellem	26	56.99044	8.07755
LOD_B_S52	SAND, groft	24.1	56.99052	8.08825
LOD_B_S53	SAND, mellem - groft	27.8	56.98644	8.08608
LOD_B_S54	SAND, fint - mellem	25.9	56.98460	8.07770
LOD_B_S55	SAND, mellem - groft	25.5	56.98452	8.06701
LOD_B_S56	SAND, mellem	25.3	56.98444	8.05631

LOD_B_S57	SAND, groft	24.9	56.97985	8.06712
LOD_B_S58	SAND, mellem	25.4	56.98040	8.07545
LOD_B_S59	SAND, mellem	27	56.99272	8.09714
LOD_B_S60	SAND, fint - mellem	36.8	57.01154	8.03522

Bilag E2

HAPS analyseresultater (WSP) - Lodbjerg A og B (fase IB)

Info

Fysisk

Kemisk

Prøvemrk.	Prøvenr	D10 [mm]	D50 [mm]	D60 [mm]	U=D60/D10	Finstof indhold <0.125 mm (%)	Tørstofindhold old (%)	Glødetab (%)
LOD_A_S01	260714/20	0.36	1.09	1.67	4.62	0.16	87,7	0,6
LOD_A_S02	260715/20	0.29	0.74	3.20	10.85	0.18	86,0	2,7
LOD_A_S03	260716/20	0.33	14.28	62.18	186.54	0.22	85,2	0,2
LOD_A_S04	260717/20	0.30	0.54	0.65	2.21	0.31	84,4	0,1
LOD_A_S05	260718/20	0.27	0.41	0.44	1.61	0.25	82,1	0,1
LOD_A_S06	260719/20	0.08	0.36	0.39	5.22	11.95	84,3	0,2
LOD_A_S07	260720/20	0.29	0.55	0.65	2.22	0.68	85,8	0,1
LOD_A_S08	260721/20	0.29	0.49	0.73	2.53	0.07	85,6	0,1
LOD_A_S09	260722/20	0.30	0.55	0.65	2.17	0.01	87,8	0,1
LOD_A_S10	260723/20	0.29	0.46	0.52	1.83	0.33	82,5	0,1
LOD_A_S11	260724/20	0.28	0.45	0.49	1.77	0.12	85,9	0,1
LOD_A_S12	260725/20	0.00	0.07	0.18	42.04	55.91	74,5	0,1
LOD_A_S14	260727/20	0.34	0.88	1.63	4.85	0.16	85,8	0,2
LOD_A_S15	260728/20	0.28	0.45	0.49	1.73	0.17	83,8	0,1
LOD_A_S16	260729/20	0.28	0.55	4.93	17.68	0.44	85,1	2,4
LOD_A_S17	260730/20	0.26	0.41	0.44	1.67	0.4	84,0	0,5
LOD_A_S19	260732/20	0.30	0.53	0.65	2.19	0.05	83,6	0,2
LOD_A_S20	260733/20	0.26	0.39	0.43	1.62	0.12	85,0	0,2
LOD_A_S21	260734/20	0.29	0.50	0.62	2.14	0.26	86,5	0,1
LOD_A_S22	260735/20	0.30	0.58	0.70	2.35	0.22	84,0	0,2
LOD_A_S23	260736/20	0.30	0.57	0.69	2.28	0.04	82,9	3,1
LOD_A_S24	260737/20	0.29	0.47	0.55	1.92	0.13	89,1	0,1
LOD_A_S25	260738/20	0.29	0.48	0.73	2.51	0.07	87,8	0,2
LOD_A_S27	260740/20	0.28	0.50	0.71	2.50	0.89	89,0	3,7
LOD_A_S28	260741/20	0.26	0.38	0.41	1.58	0.32	81,5	0,1
LOD_A_S29	260742/20	0.26	0.38	0.41	1.60	0.83	83,4	0,2
LOD_A_S30	260743/20	0.25	0.37	0.40	1.57	0.42	82,5	0,1
LOD_A_S32	260745/20	0.26	0.38	0.41	1.55	0.6	81,8	0,1
LOD_A_S33	260746/20	0.27	0.39	0.42	1.56	0.29	83,3	0,1
LOD_A_S34	260747/20	0.29	0.46	0.52	1.81	0.21	85,7	0,2
LOD_A_S35	260748/20	0.28	0.42	0.46	1.64	0.24	85,6	0,2
LOD_A_S36	260749/20	0.31	0.64	0.77	2.49	0.16	89,8	0,8
LOD_A_S37	260750/20	0.26	0.39	0.43	1.64	0.57	84,9	0,2
LOD_A_S38	260751/20	0.28	0.42	0.46	1.66	0.42	84,9	0,3
LOD_A_S39	260752/20	0.27	0.40	0.43	1.57	0.31	82,7	0,2
LOD_A_S40	260753/20	0.28	0.40	0.43	1.56	0.21	83,2	0,3
LOD_B_S01	260754/20	0.28	0.42	0.45	1.64	0.34	84,0	0,2
LOD_B_S02	260755/20	0.28	0.44	0.47	1.69	0.16	84,0	0,3
LOD_B_S03	260756/20	0.30	0.66	0.84	2.77	0.1	86,4	0,1
LOD_B_S04	260757/20	0.34	0.89	1.54	4.55	0.02	90,2	0,2
LOD_B_S05	260758/20	0.29	0.49	0.70	2.38	0.18	85,3	0,3
LOD_B_S06	260759/20	0.27	0.43	0.47	1.71	0.28	82,7	0,1
LOD_B_S07	260760/20	0.33	0.73	0.85	2.58	0.22	87,0	0,1
LOD_B_S08	260761/20	0.30	0.57	0.68	2.25	0.29	83,1	0,2

LOD_B_S09	260762/20	0.35	0.79	0.89	2.52	0.21	88,1	0,2
LOD_B_S10	260763/20	0.29	0.46	0.51	1.76	0.24	89,1	0,2
LOD_B_S11	260764/20	0.28	0.44	0.48	1.74	0.36	86,7	0,2
LOD_B_S12	260765/20	0.28	0.46	0.51	1.84	0.17	85,5	0,2
LOD_B_S13	260766/20	0.29	0.47	0.56	1.95	0.22	84,7	0,2
LOD_B_S14	260767/20	0.29	0.48	0.59	2.01	0.23	85,7	0,2
LOD_B_S15	260768/20	0.29	0.47	0.55	1.91	0.15	81,7	0,1
LOD_B_S16	260769/20	0.39	0.74	0.82	2.09	0.18	85,7	0,6
LOD_B_S17	260770/20	0.29	0.45	0.50	1.73	0.16	83,8	0,1
LOD_B_S18	260771/20	0.29	0.48	0.57	2.00	0.23	78,6	0,1
LOD_B_S19	260772/20	0.27	0.38	0.41	1.50	0.37	83,2	0,1
LOD_B_S20	260773/20	0.29	0.46	0.52	1.81	0.24	84,7	0,1
LOD_B_S21	260774/20	0.29	0.52	0.63	2.12	0.22	83,7	0,2
LOD_B_S22	260775/20	0.34	0.80	0.92	2.72	0.17	87,9	0,6
LOD_B_S23	260776/20	0.50	4.47	6.31	12.63	0.07	93,5	2,7
LOD_B_S24	260777/20	0.28	0.42	0.45	1.63	0.15	83,6	0,2
LOD_B_S25	260778/20	0.32	0.62	0.71	2.25	0.24	83,8	0,2
LOD_B_S26	260779/20	0.27	0.40	0.43	1.56	0.23	81,4	0,3
LOD_B_S27	260780/20	0.28	0.42	0.46	1.65	0.28	83,3	0,3
LOD_B_S28	260781/20	0.32	0.64	0.73	2.31	0.26	83,1	0,2
LOD_B_S29	260782/20	0.30	0.60	0.74	2.45	0.27	88,7	0,4
LOD_B_S30	260783/20	0.30	0.61	0.76	2.52	0.27	88,5	2,5
LOD_B_S31	260784/20	0.28	0.44	0.48	1.72	0.21	85,6	0,1
LOD_B_S32	260785/20	0.28	0.43	0.47	1.67	0.22	68,7	0,3
LOD_B_S33	260786/20	0.28	0.46	0.54	1.89	0.21	85,2	0,1
LOD_B_S34	260787/20	0.29	0.47	0.57	1.97	0.18	85,6	0,3
LOD_B_S35	260788/20	0.32	0.77	0.92	2.82	0.22	88,0	0,4
LOD_B_S36	260789/20	0.29	0.49	0.63	2.19	0.3	88,1	0,3
LOD_B_S37	260790/20	0.28	0.43	0.47	1.70	0.34	85,7	0,2
LOD_B_S38	260791/20	0.27	0.41	0.45	1.65	0.38	85,4	0,2
LOD_B_S39	260792/20	0.28	0.46	0.52	1.83	0.14	88,4	0,1
LOD_B_S40	260793/20	0.28	0.42	0.45	1.65	0.26	84,3	0,3
LOD_B_S41	260794/20	0.29	0.50	0.65	2.23	0.25	88,7	0,2
LOD_B_S42	260795/20	0.28	0.43	0.46	1.66	0.46	83,0	0,2
LOD_B_S43	260796/20	0.37	1.85	3.45	9.32	0.08	92,0	0,4
LOD_B_S44	260797/20	0.37	0.89	1.23	3.33	0.19	86,2	0,9
LOD_B_S45	260798/20	0.49	7.19	10.12	20.74	0.11	94,5	0,6
LOD_B_S46	260799/20	0.29	0.53	0.64	2.21	1.21	84,1	0,2
LOD_B_S47	260800/20	0.35	0.87	1.07	3.06	0.13	87,1	0,2
LOD_B_S48	260801/20	0.29	0.49	0.63	2.16	0.31	87,0	0,2
LOD_B_S49	260802/20	0.32	0.67	0.79	2.49	0.18	83,8	0,3
LOD_B_S50	260803/20	0.28	0.43	0.47	1.67	0.21	82,9	0,0
LOD_B_S51	260804/20	0.30	0.62	0.72	2.38	0.23	85,3	0,2
LOD_B_S52	260805/20	0.29	0.45	0.49	1.71	0.2	87,7	0,1
LOD_B_S53	260646/20	0.29	0.48	0.58	2.03	0.52	84,2	0,1
LOD_B_S54	260647/20	0.26	0.40	0.43	1.62	0.25	85,0	0,3
LOD_B_S55	260648/20	0.31	0.63	0.76	2.47	0.19	85,9	2,6
LOD_B_S56	260649/20	0.28	0.42	0.45	1.64	0.24	84,8	0,1
LOD_B_S57	260650/20	0.34	2.41	10.92	32.43	0.1	89,7	0,1
LOD_B_S58	260651/20	0.29	0.47	0.53	1.83	0.25	85,2	0,2
LOD_B_S59	260652/20	0.29	0.49	0.62	2.12	0.28	86,4	0,1
LOD_B_S60	260653/20	0.30	37.97	42.97	143.92	0.85	84,1	0,2

Bilag F1

Lodbjerg A: ROV verifikationsdyk (WSP feltbeskrivelse 10/11, 2020)

Punkt	Y (UTM32N)	X (UTM32N)	Y d.d (WGS 84)	X d.d (WGS 84)	Dybde (m)	Primær Substrat- type	Sekundær Substrat- type	Substratbeskrivelse
LOD_A_R01	6 304 931.0	437 988.0	56.883966	7.982334	26	3	2b	Stenbund med mange store spredte sten, og med småsten og grus som matrix. Varierende stendække i området.
LOD_A_R02	6 305 105.0	437 519.0	56.885466	7.974596	27	1b		Fast sandbund af fint-mellem sand, med groft sand, lidt grus og skaller i trugene.
LOD_A_R03	6 306 091.9	437 472.0	56.894325	7.973582	28	1b		Sandbund med bølgeribber af fint-mellem sand, med grovere materiale og skalfragmenter i trugene.
LOD_A_R04	6 306 113.0	438 672.0	56.894674	7.993272	26	2b		Sandet bund med små og grus, og få spredte store sten. Varierende stendækning
LOD_A_R05	6 305 343.0	439 167.0	56.887823	8.00158	25	1b		1b sandbund med bølgeribber af fint-mellem sand, med grus og skaller i trugene.
LOD_A_R06	6 305 519.0	440 392.0	56.889563	8.021641	29	2b		Sandbund med spredte større sten, grus og skaller i trugene af bølgeribberne. Varierende stendækning
LOD_A_R07	6 306 190.0	439 412.0	56.895463	8.005399	26	3		Stenet bund med matrix af grus og småsten. Varierende stendækning
LOD_A_R08	6 306 876.0	440 400.0	56.901753	8.021454	27	1b		1b fast sandbund med bølgeribber af fint-mellem sand, med skaller og grovere sand i trugene.
LOD_A_R09	6 307 332.0	440 844.0	56.905906	8.028636	28	3		Gruset småstensbund med spredte større sten, og lokalt sandet ribber. Meget varierende stendækning
LOD_A_R10	6 307 934.0	439 730.0	56.91117	8.010204	26	2b	4	Spredte sten på fast sandbund. sandbund med bølgeribber af fint-mellemkornet sand. Skaller i trugene.
LOD_A_R11	6 307 223.0	439 473.0	56.90475	8.006153	26	2b		Sandbund med bølgeribber og få spredte store sten. Grus og skaller i trugene. Muligvis tyndt sanddække på sten.
LOD_A_R12	6 306 916.0	438 267.0	56.901833	7.986429	26	2b		Sandbund med mange småsten og grus, samt få spredte store sten.
LOD_A_R13	6 306 633.0	437 695.0	56.899215	7.977109	28	3-4	2b	Stenet bund med lokalt type 4 og ellers mest type 3. Meget varierende stendække.
LOD_A_R14	6 307 322.0	437 842.0	56.905423	7.979353	26	2b		Sandbund med få spredte store sten. Fint-mellem sand med grus og skaller i trugene. Stendækning meget varierende.
LOD_A_R15	6 305 624.0	438 350.0	56.890239	7.988106	28	2b		Sandet, gruset og småstenet bund, med få store spredte sten.
LOD_A_R16	6 307 081.0	436 830.0	56.903122	7.962799	30	2b		Sandbund med bølgeribber, med grus og skaller i trugene. Få spredte store sten
LOD_A_R17	6 307 950.0	438 579.0	56.911162	7.991301	26	1b		Sandbund med bølgeribber af mellem-groft sand. Grovere sand, grus og skaller i trugene.

LOD_A_R18	6 308 546.0	439 560.0	56.916645	8.007266	26	2b	3	Stenet bund med varierende stendækning, type 2b med lokal type 3. Matrix af mest sand, grus og småsten.
LOD_A_R19	6 309 881.0	439 949.0	56.928687	8.013338	27	3		Stenet bund med grus, småsten og sand. Varierende stendækning og størrelser.
LOD_A_R20	6 308 520.0	440 529.0	56.916537	8.023186	25	3		Stenet bund, med grus, småsten og sand imellem

Lodbjerg B: ROV verifikationsdyk (WSP feltbeskrivelse 9-10/11, 2020)

Punkt	Y (UTM32N)	X (UTM32N)	Y d.d (WGS 84)	X d.d (WGS 84)	Dybde	Primær Substrat- type	Sekundær substrat- type	Substratbeskrivelse
LOD_B_R01	6317353	440098	56.99582	8.01402	29	1b	-	1b fast sandbund med bølgeribber af mellem-groft sand, med grus og skaller i trugene
LOD_B_R02	6316571	441119	56.98893	8.03100	31	2a	-	Flad grusbund med småsten og lidt sand i matrix, og få spredte skaller.
LOD_B_R03	6316249	442556	56.98622	8.05472	25	1b	-	1b fast sandbund med bølgeribber af mellem sand, med skaller og grus i trugene.
LOD_B_R04	6316323	443939	56.98705	8.07746	24	1b	-	1b fast sandbund med bølgeribber af mellem sand, med grus og skaller i trugene. Stormbølgeribber med strømribber vinkelret på toppen.
LOD_B_R05	6317524	441497	56.99754	8.03700	30	2a	-	En flad gruset og småstenet ensartet bund, med skalfragmenter.
LOD_B_R06	6318309	439553	57.00434	8.00482	33	1b	-	1b fast sandbund med bølgeribber af mellem sand, og med grus og skaller i trugene
LOD_B_R07	6318383	441010	57.00519	8.02878	31	1b	-	1b fast sandbund af mellem-groft sand, samt grus og skaller i trugene.
LOD_B_R08	6317447	443501	56.99709	8.07000	25	1b	-	1b fast sandbund med bølgeribber af mellem sand, og groft sand i trugene. Bølgeribber har 30 cm længde og 10 cm i højde
LOD_B_R09	6317497	444617	56.99768	8.08836	25	1b	-	1b fast sandbund med bølgeribber af mellem sand, med skaller og groft sand i trugene
LOD_B_R10	6316673	445142	56.99034	8.09718	26	2a	-	1b/2a sandet bølgeribber på grusbund med småsten og skalfragmenter.
LOD_B_R11	6318326	445689	57.00525	8.10582	23	1b	-	1b fast sandbund med bølgeribber af mellem-groft sand, med grus og skaller i trugene.
LOD_B_R12	6318909	446554	57.01059	8.11994	24	1b	-	1b sandbund med bølgeribber af mellem sand, og groft, grus og skaller i trugene.
LOD_B_R13	6318995	447590	57.01148	8.13698	29	1b	2a	1b sandbund med bølgeribber af fint-mellemkornet sand. Skaller og grus i trugene
LOD_B_R14	6319620	446299	57.01695	8.11559	24	1b	-	Ren 1b sandbund med bølgeribber af fint-mellemkornet sand.
LOD_B_R15	6318557	443754	57.00710	8.07392	27	1b	-	1b fast sandbund med bølgeribber af fint-mellem sand. Grus og skaller i trugene.
LOD_B_R16	6319170	444676	57.01271	8.08896	25	1b	-	1b fast sandbund med bølgeribber af mellem-groft, med grus og skalfragmenter i trugene.
LOD_B_R17	6319024	442605	57.01115	8.05489	30	1b	-	1b fast sandbund med bølgeribber på 10 cm højde, 25 cm længde. Grus og skaller i trugene
LOD_B_R18	6319342	441264	57.01384	8.03274	36	2b	-	2a/2b bølgeribber af sand oven på en grusbund med mindre sten og stedvist meget få spredte større sten.
LOD_B_R19	6319851	442798	57.01860	8.05788	31	1b	-	1b fast sandbund med bølgeribber af groft sand. Gruset og småstenet i trugene. Bølgeribber 20 cm i højde, 40 cm i bølgelængde
LOD_B_R20	6315090	443745	56.97595	8.07454	28	1b	-	1b sandbund med bølgeribber af mellem-groft sand, samt grus og skaller i trugene.