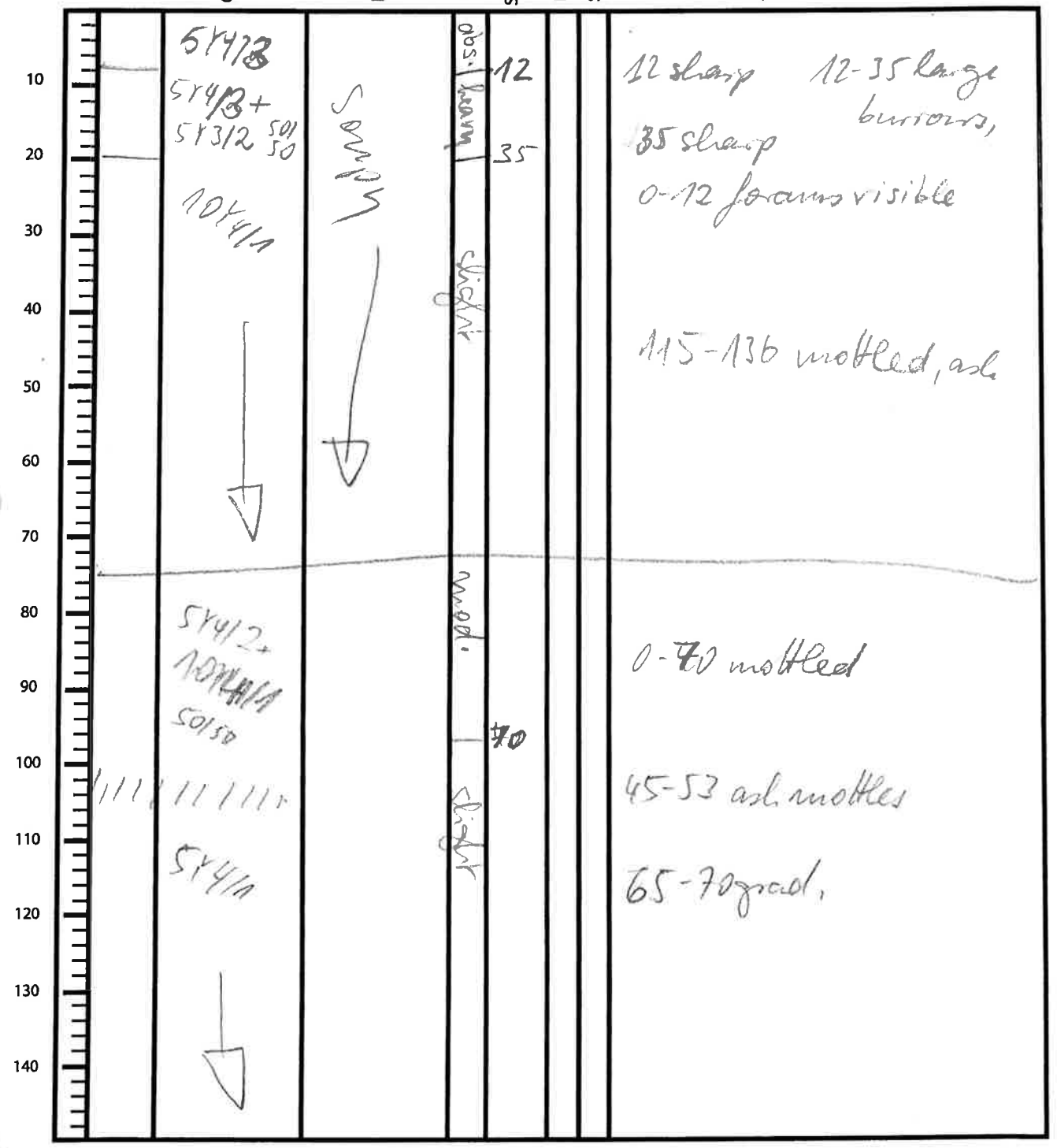
1342 D 14 1+2 ____
Site Hole Core Section Top Depth

Expedition 323
Bering Sea

Major Lithology ____ Minor Lithology ____



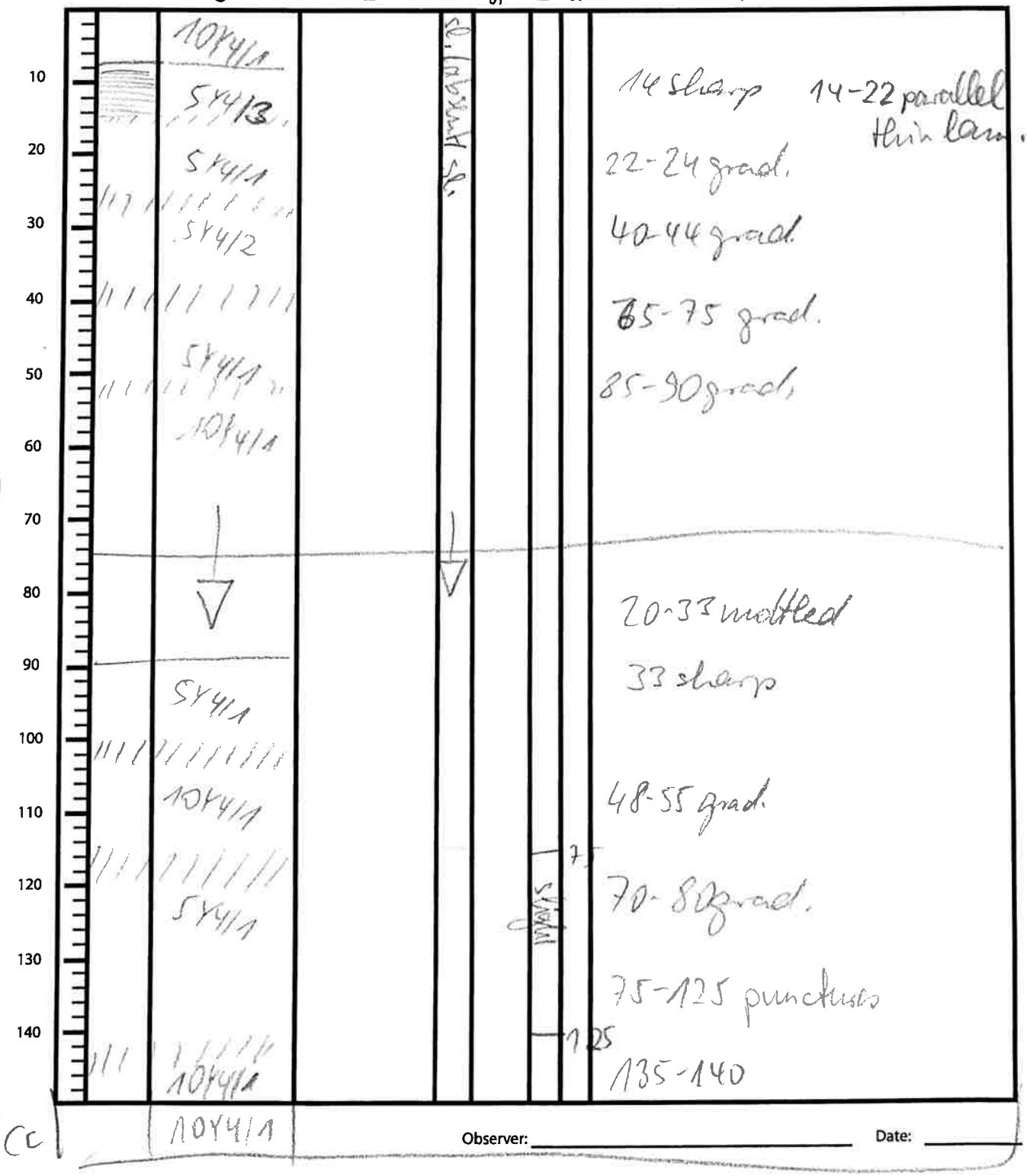
Observer: ____ Date: ____

1342 / D / 1H / 3+4+cc
Site / Hole / Core / Section / Top Depth

Expedition 323
Bering Sea

Major Lithology

Minor Lithology



Observer: _____ Date: _____

X

SM

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Interval (cm) Bottom
323	U1342	D	1	H	1	8	8

Sediment/Rock Name	Foram- rich diatom ooze

Observer	MSC

Percent Texture		
Sand	Silt	Clay

Comments: Main lith - pale green

Percent	Component
	SILICICLASTIC GRAINS/MINERAL
	Framework minerals
5	Quartz
5	Feldspar
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
	Rock fragments
	Accessory/trace minerals
	Micas
3	Biotite
	Muscovite
	Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
	Pyrite
	Magnetite
	Fe-oxide
	Carbonates
	Calcite
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
	Vitric grain
	Lithic grain

Percent	Component
	BIOGENIC GRAINS
	Calcareous
12	Foraminifera + fragments
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
3	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
	Diatoms
25	Centric
45	Pennate
	Chaetoceros Resting Spores
2	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

f

SM

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Interval (cm) Bottom
323	U1342	D	1	H	1	13	13

Sediment/Rock Name	Nanno + fram-rich diatom ooze

Observer	MSC

Percent Texture		
Sand	Silt	Clay

Comments: Main - darker green

Percent	Component
3	**SILICICLASTIC GRAINS/MINERAL**
	Framework minerals
2	Quartz
1	Feldspar
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
	Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
	Pyrite
	Magnetite
	Fe-oxide
	Carbonates
	Calcite
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
	Vitric grain
	Lithic grain

Percent	Component
97	**BIOGENIC GRAINS**
	Calcareous
12	Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
10	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
	Diatoms
25	Centric
50	Pennate
	Chaetoceros Resting Spores
	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

f

SM

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Interval (cm) Bottom
323	U1342	D	1	H	1	80	80

Sediment/Rock Name	Foram + Nanno-rich diatom clayey silt	Observer	MSC

Percent Texture		
Sand	Silt	Clay
S	60	40

Comments: Micro lith – greener grey

Percent	Component
48	**SILICICLASTIC GRAINS/MINERAL**
	Framework minerals
10	Quartz
10	Feldspar
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
25	Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
3	Pyrite
	Magnetite
	Fe-oxide
	Carbonates
	Calcite
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
	Vitric grain
	Lithic grain

Percent	Component
52	**BIOGENIC GRAINS**
10	Calcareous
	Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
12	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
	Diatoms
15	Centric
15	Pennate
	Chaetoceros Resting Spores
	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

Y

SM

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Interval (cm) Bottom
323	U1342	D	1	H	3	32	32

Sediment/Rock Name	Diatom-rich silty clay.	Observer	MSC

Percent Texture		
Sand	Silt	Clay
1	44	55

S

Comments: Main lith - grey

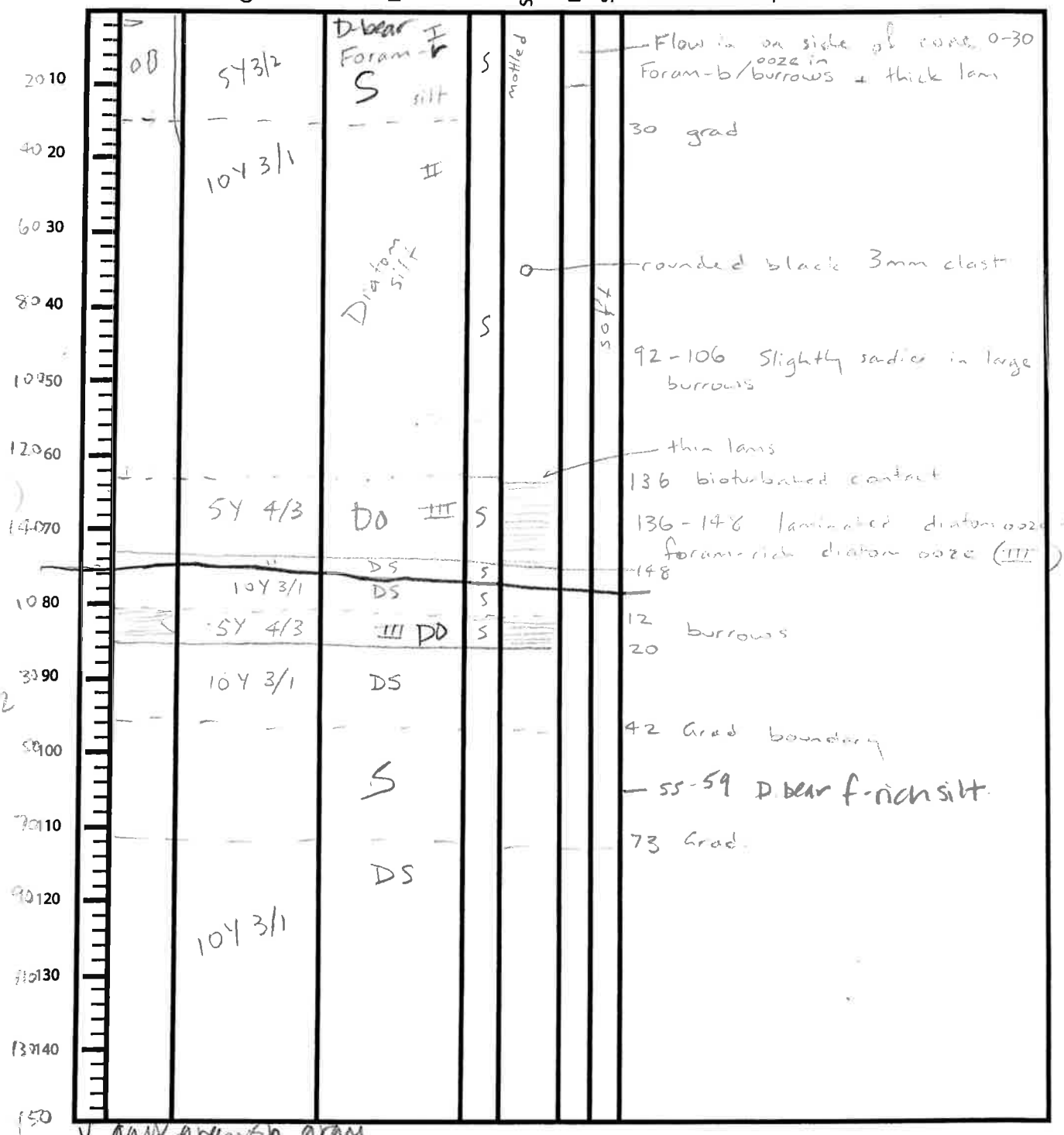
Percent	Component
69	**SILICICLASTIC GRAINS/MINERAL**
	Framework minerals
15	Quartz
20	Feldspar
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
30	Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
3	Pyrite
	Magnetite
1	Fe-oxide
	Carbonates
	Calcite
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
	Vitric grain
	Lithic grain

Percent	Component
31	**BIOGENIC GRAINS**
	Calcareous
	Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
	Diatoms
13	Centric
18	Pennate
	Chaetoceros Resting Spores
	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

1342 / D / 2H / 1+2 / ____
Site / Hole / Core / Section / Top Depth

Expedition 323
Bering Sea

Major Lithology ____ Minor Lithology ____



V. dark greenish gray

DS = Diatom bearing clayey silt (10y 3/1) - gray
DS = D bear foram-rich silt 5y 3/2 dk olive gray
III = F bear diatom ooze (5y 4/3) (DO olive

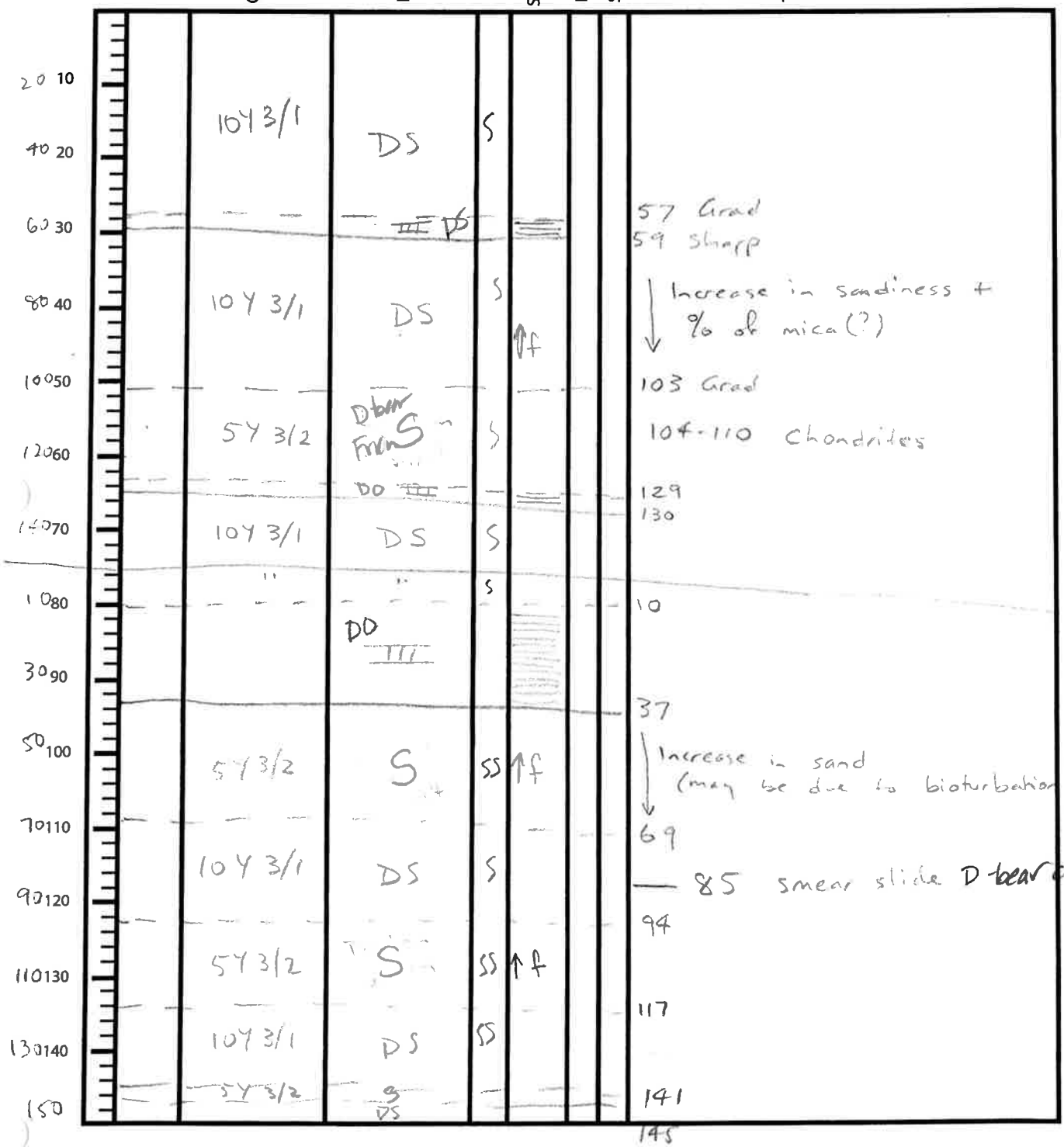
Observer: ____ Date: ____

1342 / D / 2H / 3+4 / ____
Site / Hole / Core / Section / Top Depth

57-59

Expedition 323
Bering Sea

Major Lithology: ____ Minor Lithology: ____

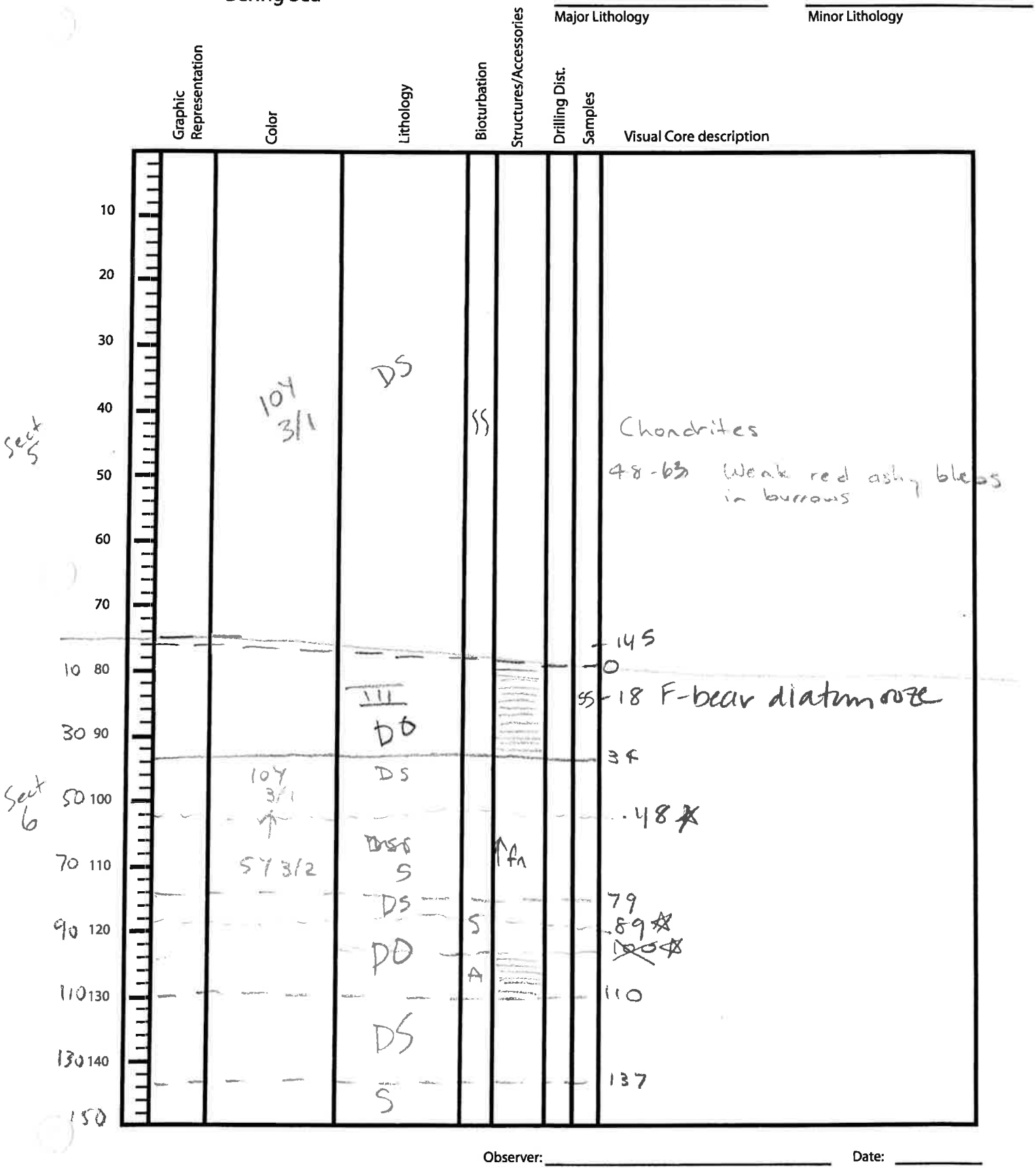


Observer: ____ Date: ____

1342 D 2H 5+6 ____
Site Hole Core Section Top Depth

Expedition 323
Bering Sea

Major Lithology ____ Minor Lithology ____



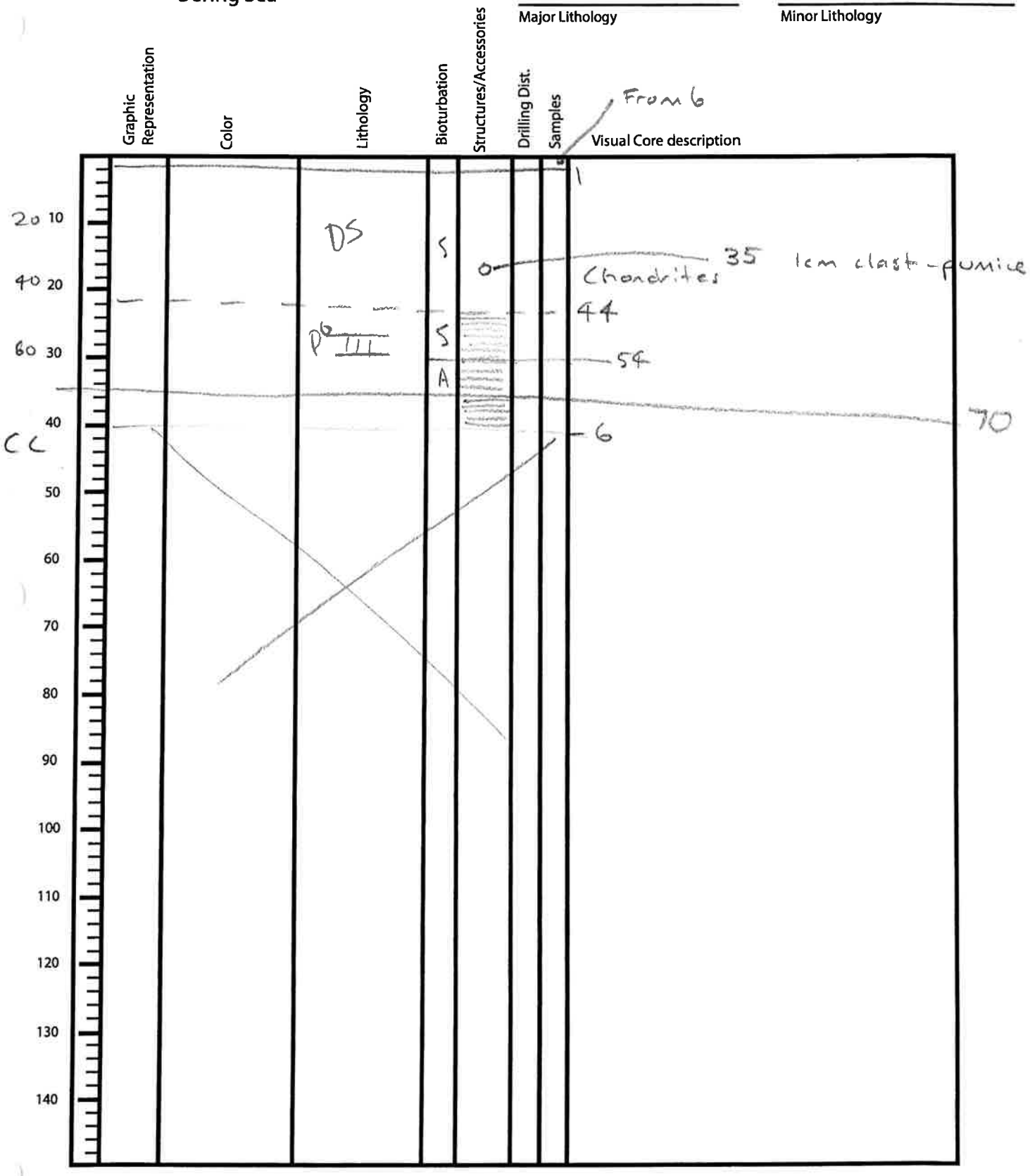
Observer: ____ Date: ____

1342 | D | 2H | 7+cc | ____
Site | Hole | Core | Section | Top Depth

Expedition 323
Bering Sea

Major Lithology

Minor Lithology



Observer: _____ Date: _____

X

SM

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Interval (cm) Bottom
323	U1342	D	2	H	2	59	59

Sediment/Rock Name	diatom-bearing foram-rich silt	Observer	MSC

Percent Texture		
Sand	Silt	Clay
10	80	10

Comments: Main lith - greenish gray silt

Percent	Component
	SILICICLASTIC GRAINS/MINERAL
	Framework minerals
17	Quartz 3
28	Feldspar 5
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
28 ~~17~~	Rock fragments 5
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
17 ~~28~~	Clay Minerals ~~5~~ 3
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
	Pyrite
	Magnetite
	Fe-oxide
	Carbonates
	Calcite
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
	Vitric grain
	Lithic grain

Percent	Component
	BIOGENIC GRAINS
	Calcareous
28	Foraminifera 5 fragment.
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
11	Diatoms 2
	Centric
	Pennate
	Chaetoceros Resting Spores
	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

X

SM 2

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Interval (cm) Bottom
323	U1342	D	2	H	4	84	84

Sediment/Rock Name	diatom-bearing clayey silt

Observer	MSC

Percent Texture		
Sand	Silt	Clay

Comments: Main lithology: green

Percent	Component
	SILICICLASTIC GRAINS/MINERAL
	Framework minerals
~~15~~ ~~17~~	Quartz ~~11~~ 17
~~18~~ ~~12~~	Feldspar ~~8~~ 5.75
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
11 ~~7~~	Rock fragments ~~8~~ 3
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
25 ~~17~~	Clay Minerals 7
	Chlorite
	Glauconite
	Chert
	Zircon
7	Ferromagnesium minerals 2
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
4	Pyrite 1
	Magnetite
	Fe-oxide
	Carbonates
	Calcite
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
	Vitric grain
	Lithic grain

Percent	Component
	BIOGENIC GRAINS
	Calcareous
	Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians ✓
	Spumellaria
	Nassellaria
11	Diatoms ~~2~~ 3
	Centric
	Pennate
	Chaetoceros Resting Spores
	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

6?

SM

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Interval (cm) Bottom
323	U1342	D	2	H	6	18	18

Sediment/Rock Name	diatom ooze. foram-~~rich~~ bearing

Observer	MSC

Percent Texture		
Sand	Silt	Clay

Comments: Laminated ooze. dk green

Percent	Component
	SILICICLASTIC GRAINS/MINERAL
	Framework minerals
8 ~~13~~	Quartz ~~3~~ 2
	Feldspar
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
	Clay Minerals 3
13 ~~18~~	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
	Pyrite
	Magnetite
	Fe-oxide
	Carbonates
13	Calcite ~~2~~ 3
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
	Vitric grain
	Lithic grain

Percent	Component
	BIOGENIC GRAINS
	Calcareous
	Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians ✓
	Spumellaria
	Nassellaria
63	Diatoms 15
	Centric
	Pennate
	Chaetoceros Resting Spores
	Silicoflagellates ✓
4	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

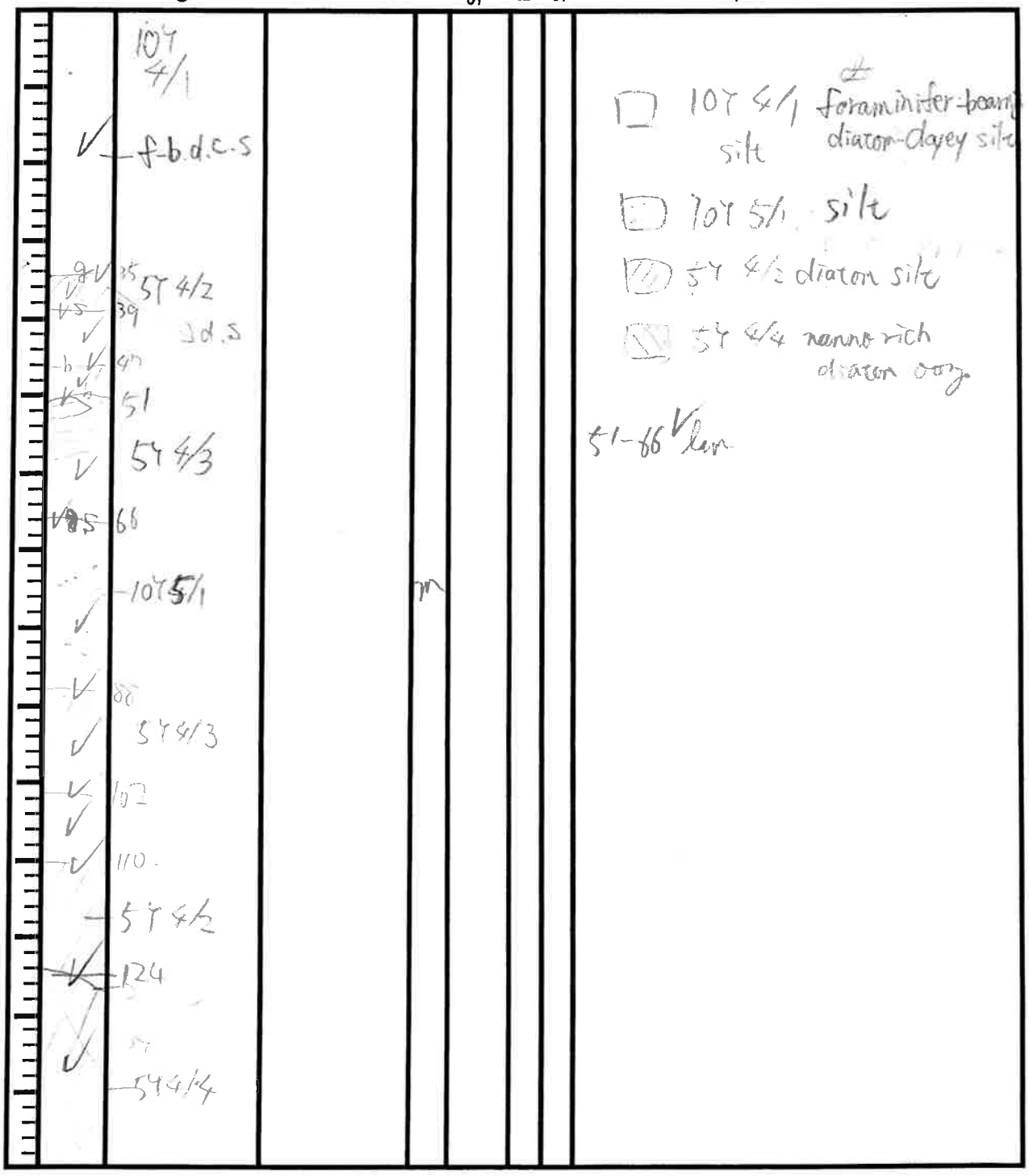
GAT-40

1342 D 3 1 ____
Site Hole Core Section Top Depth

5A · 80
1A - 9
1 - 32

Expedition 323
Bering Sea

Major Lithology ____ Minor Lithology ____

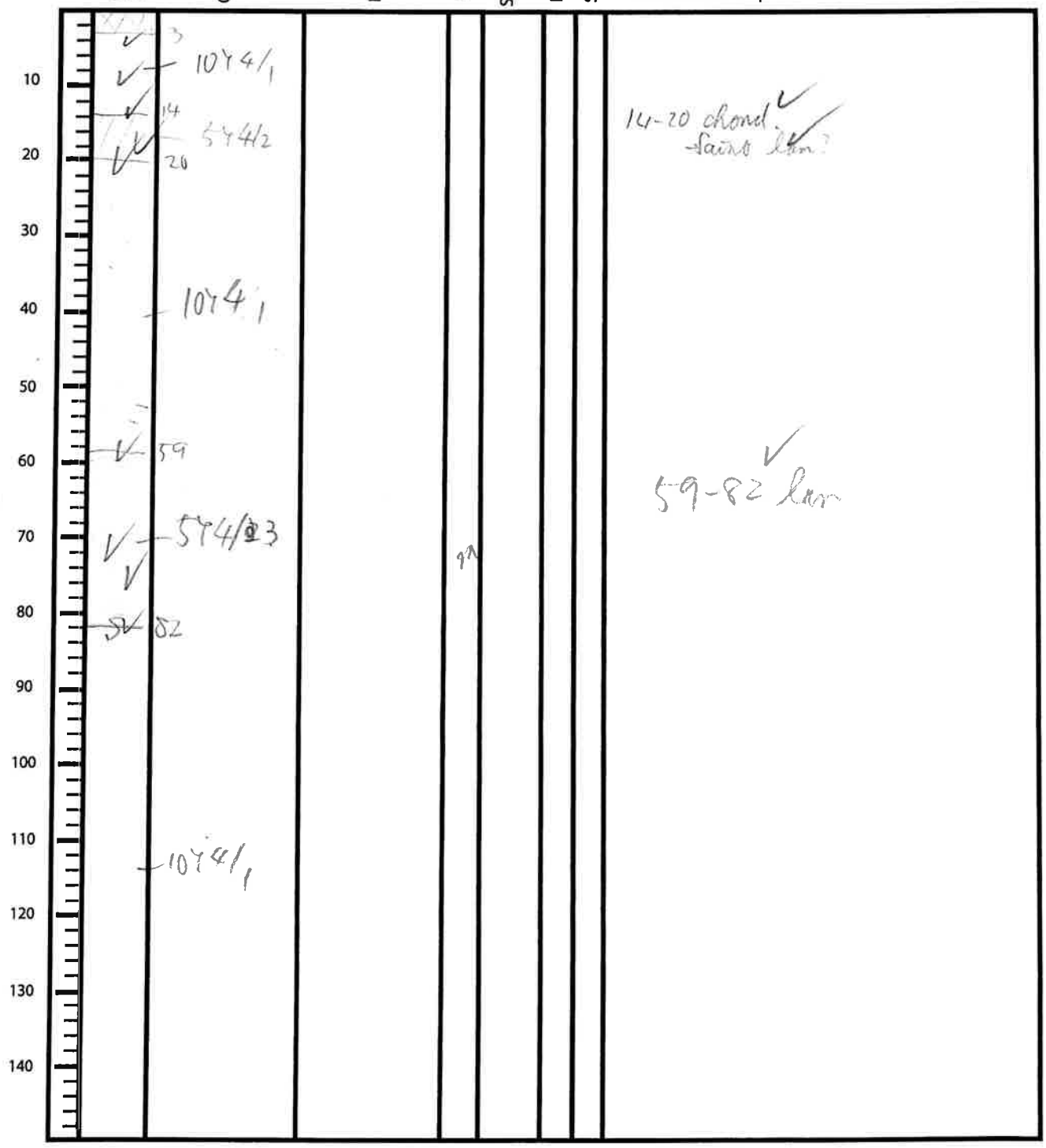


Observer: ____ Date: ____

1342 | D | 3 | 2 | ____
Site | Hole | Core | Section | Top Depth

Expedition 323
Bering Sea

Major Lithology: ____ Minor Lithology: ____

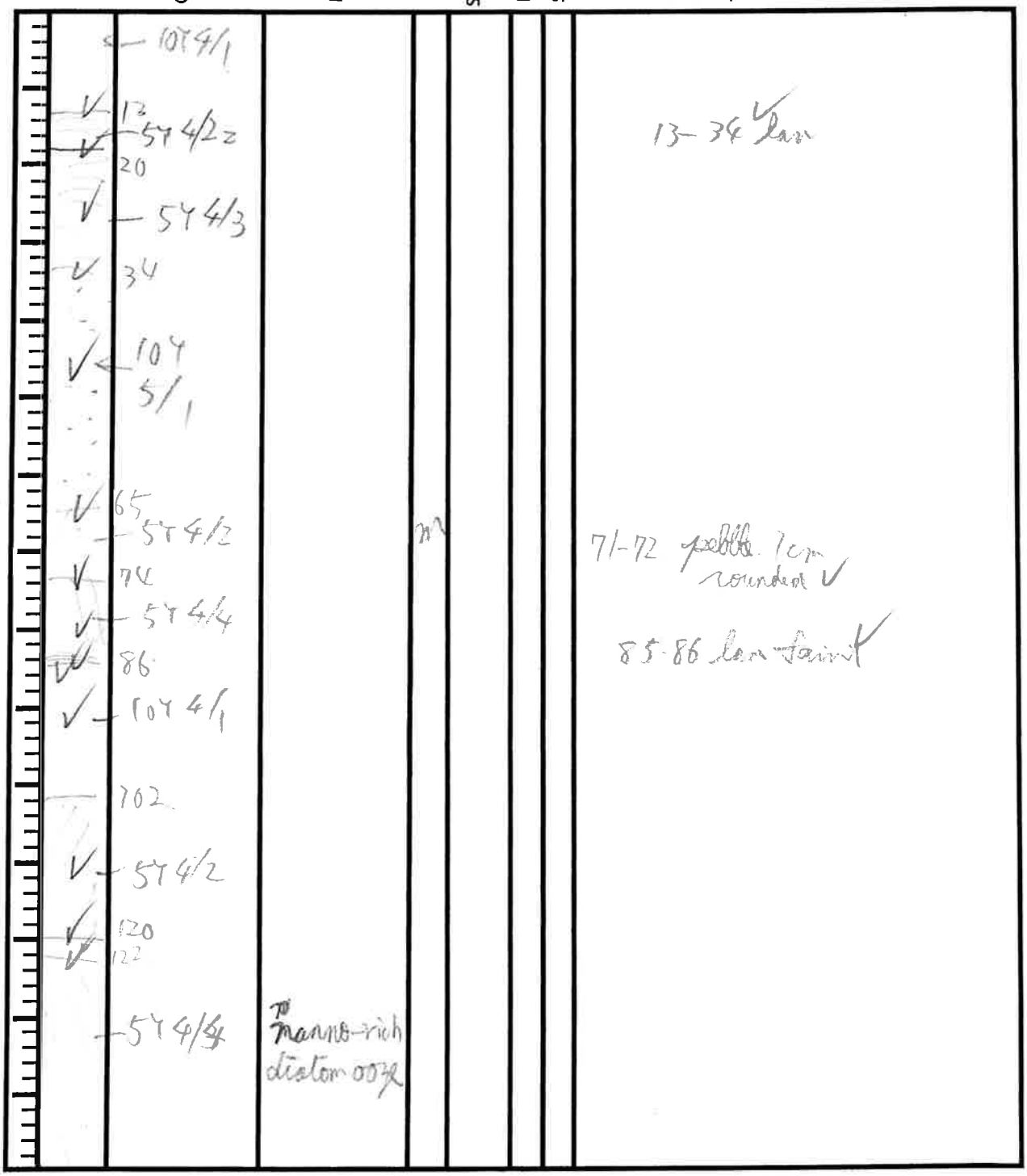


Observer: ____ Date: ____

1342 D 3 3 ____
Site Hole Core Section Top Depth

Expedition 323
Bering Sea

Major Lithology ____ Minor Lithology ____

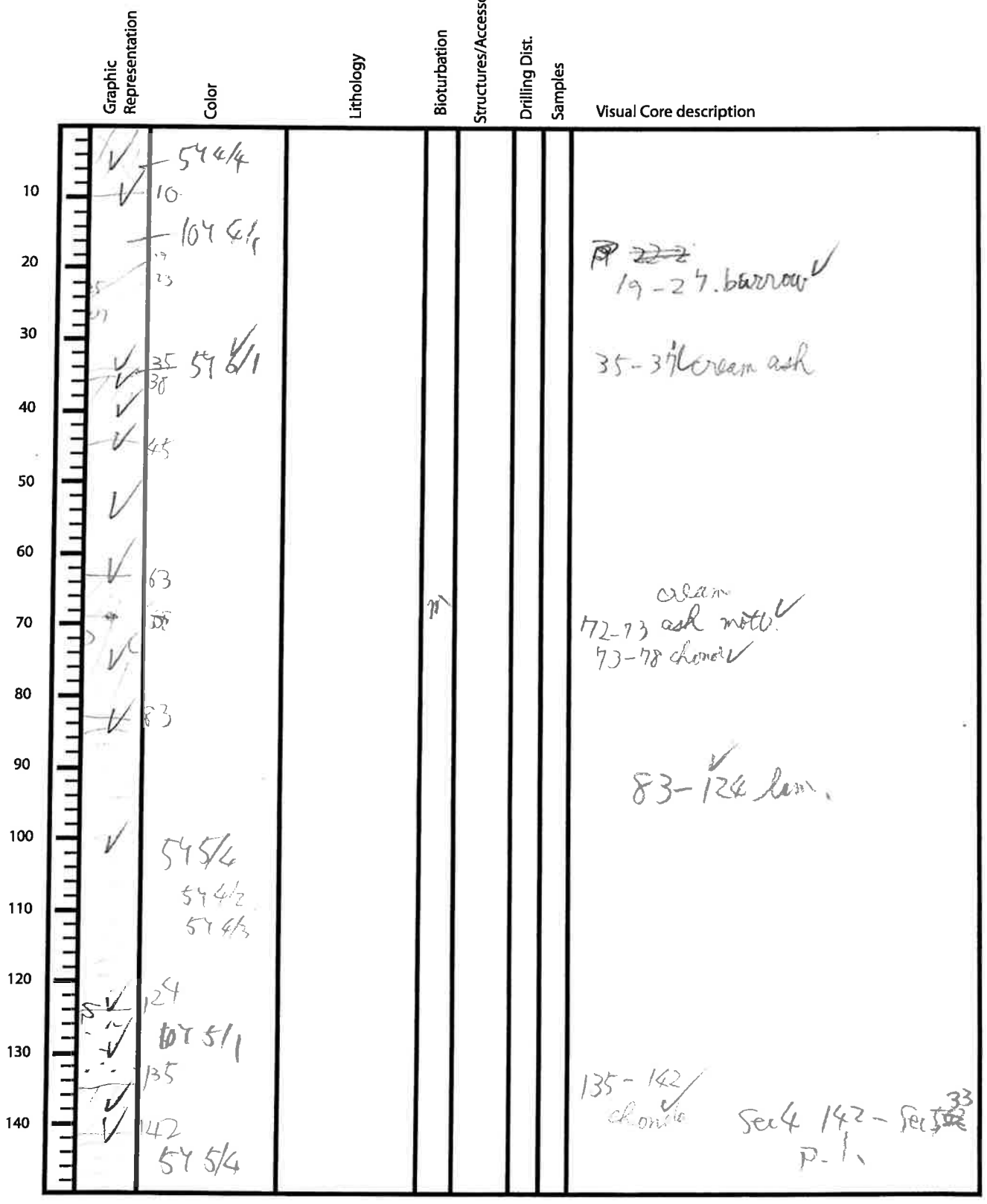


Observer: ____ Date: ____

1342 D 3 4 ____
Site Hole Core Section Top Depth

Expedition 323
Bering Sea

Major Lithology ____ Minor Lithology ____

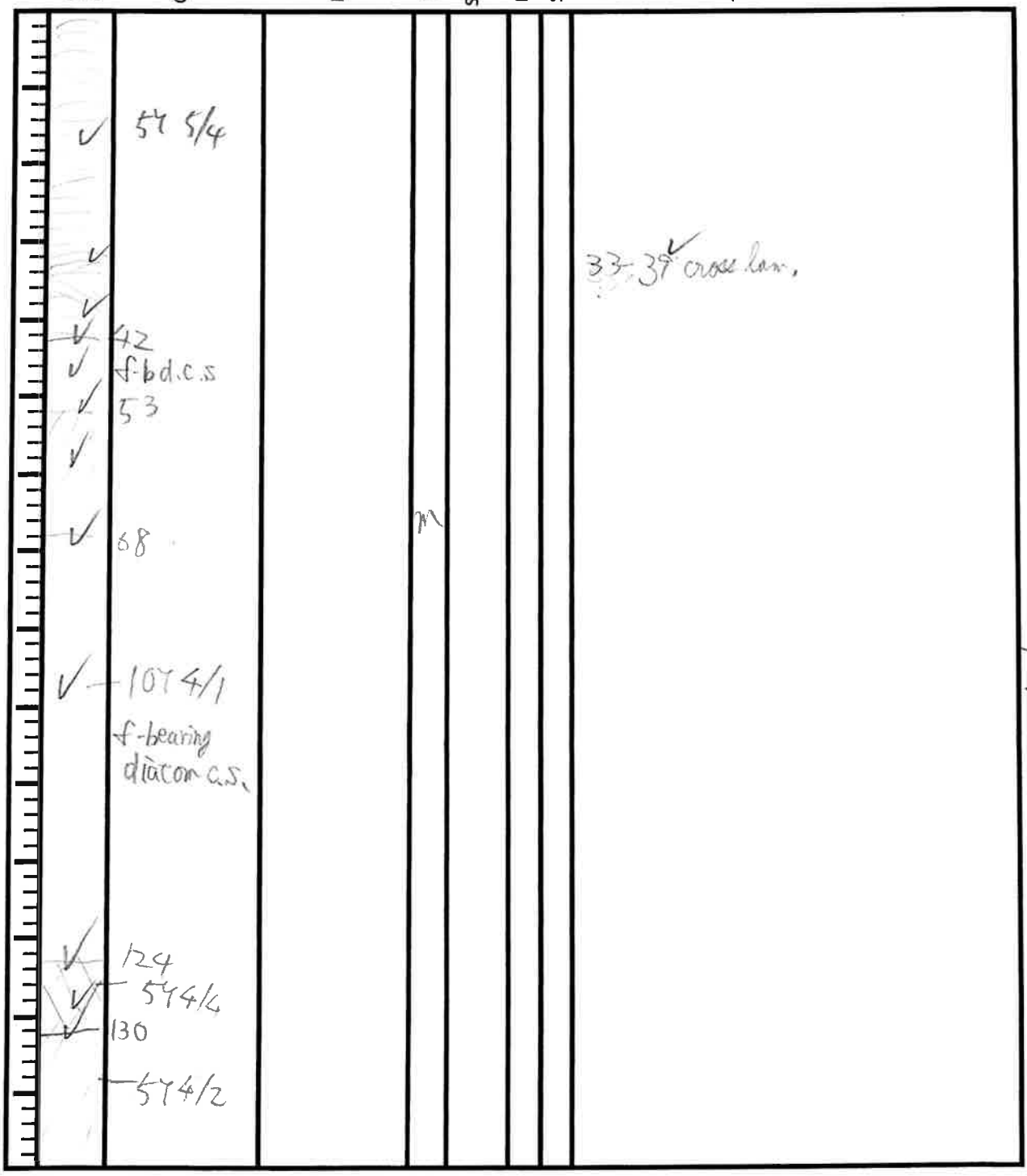


Observer: ____ Date: ____

1342 D 3 5 ____
Site Hole Core Section Top Depth

Expedition 323
Bering Sea

Major Lithology ____ Minor Lithology ____

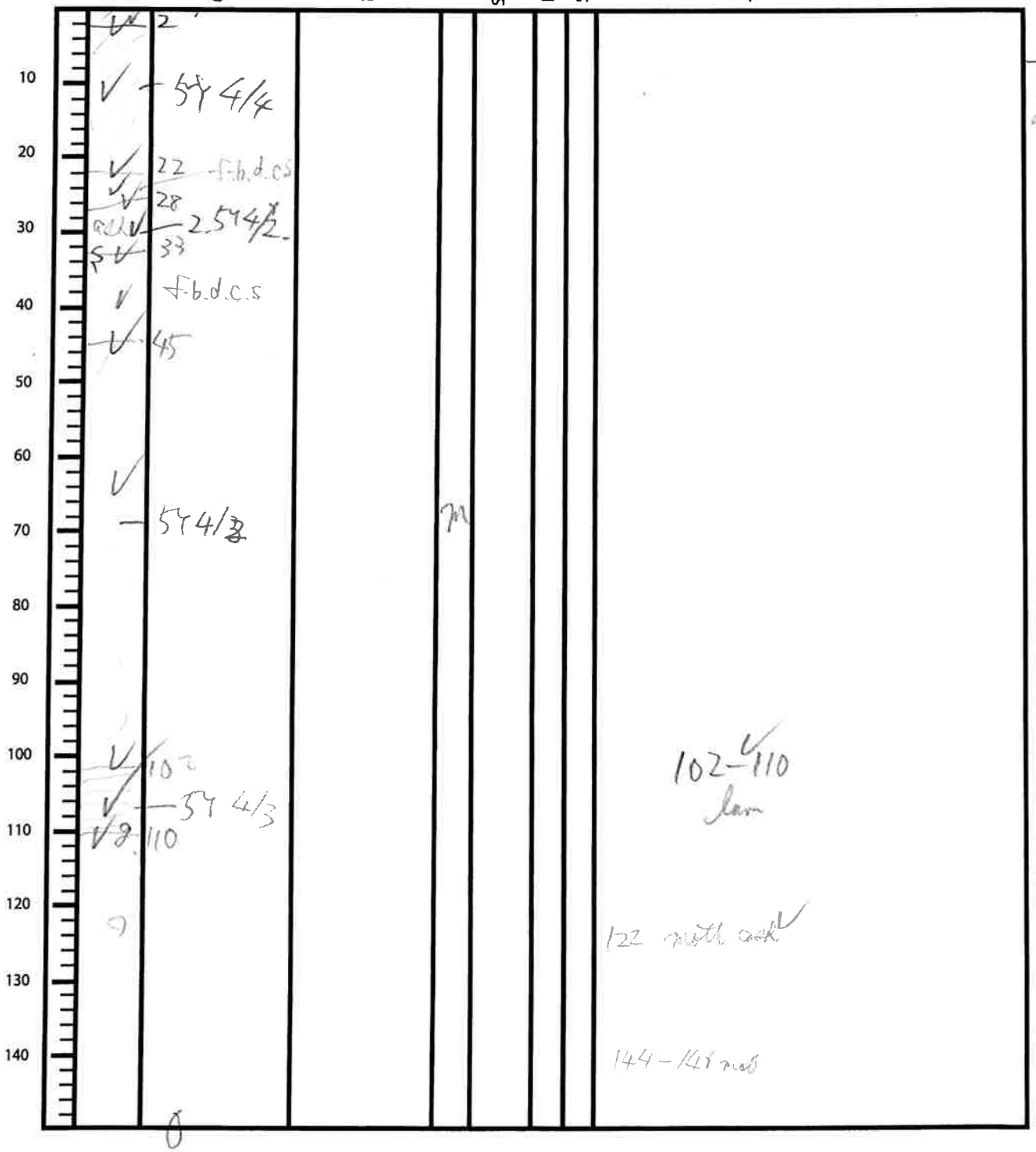


Observer: ____ Date: ____

B42 | D | 3 | 6 | ____
Site | Hole | Core | Section | Top Depth

Expedition 323
Bering Sea

Major Lithology ____ Minor Lithology ____



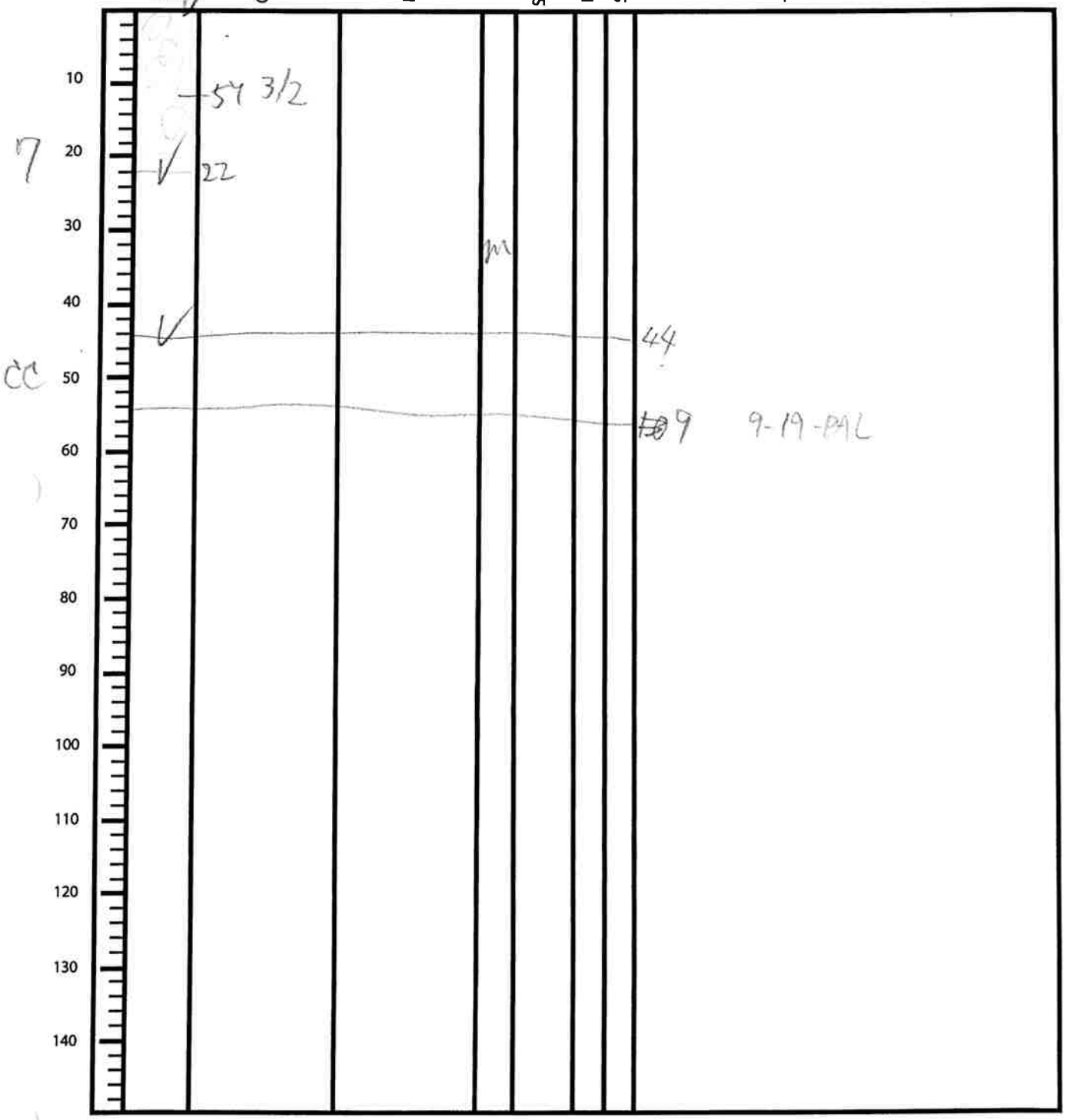
Observer: ____ Date: ____

1342 D 3 7+CC
Site Hole Core Section Top Depth

Expedition 323
Bering Sea

Major Lithology

Minor Lithology



Observer: _____ Date: _____

SM

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Bottom
	1342	D	3		5	80cm	

Sediment/Rock Name	FORAM-BEARING DIATOM CLAYEY SILT	Observer	LWA

Percent Texture		
Sand	Silt	Clay

Comments:

Percent	Component
	SILICICLASTIC GRAINS/MINERAL
	Framework minerals
8%	2 Quartz
19%	5 Feldspar
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
46%	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
19%	5 Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
4%	1 Pyrite
	Magnetite
	Fe-oxide
	Carbonates
	Calcite
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
4%	1 Vitric grain
	Lithic grain

Percent	Component
	BIOGENIC GRAINS
	Calcareous
8%	2 Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
38%	10 Diatoms
26%	7 Centric
12%	3 Pennate
	Chaetoceros Resting Spores
	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Bottom
	342	D	5		6	9 cm	

Sediment/Rock Name	NANNO-RICH DIATOM OOZE	Observer	LWH

Percent Texture		
Sand	Silt	Clay

Comments:

Percent	Component
SILICICLASTIC GRAINS/MINERAL	
	Framework minerals
2%	1 Quartz
2%	1 Feldspar
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
20%	10 Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
5%	2 Pyrite
	Magnetite
	Fe-oxide
	Carbonates
	Calcite
	Dolomite
VOLCANICLASTIC GRAINS	
	Crystal grain
3%	Vitric grain
	Lithic grain

Percent	Component
BIOGENIC GRAINS	
	Calcareous
	Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
16%	7 Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
51%	Diatoms
16%	7 Centric
35%	15 Pennate
	Chaetoceros Resting Spores
	x Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

SM

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Interval (cm) Bottom
323	B42	D	3		6	32	

Sediment/Rock Name	VITRIC FINE ASH	Observer	

Percent Texture		
Sand	Silt	Clay

Comments:

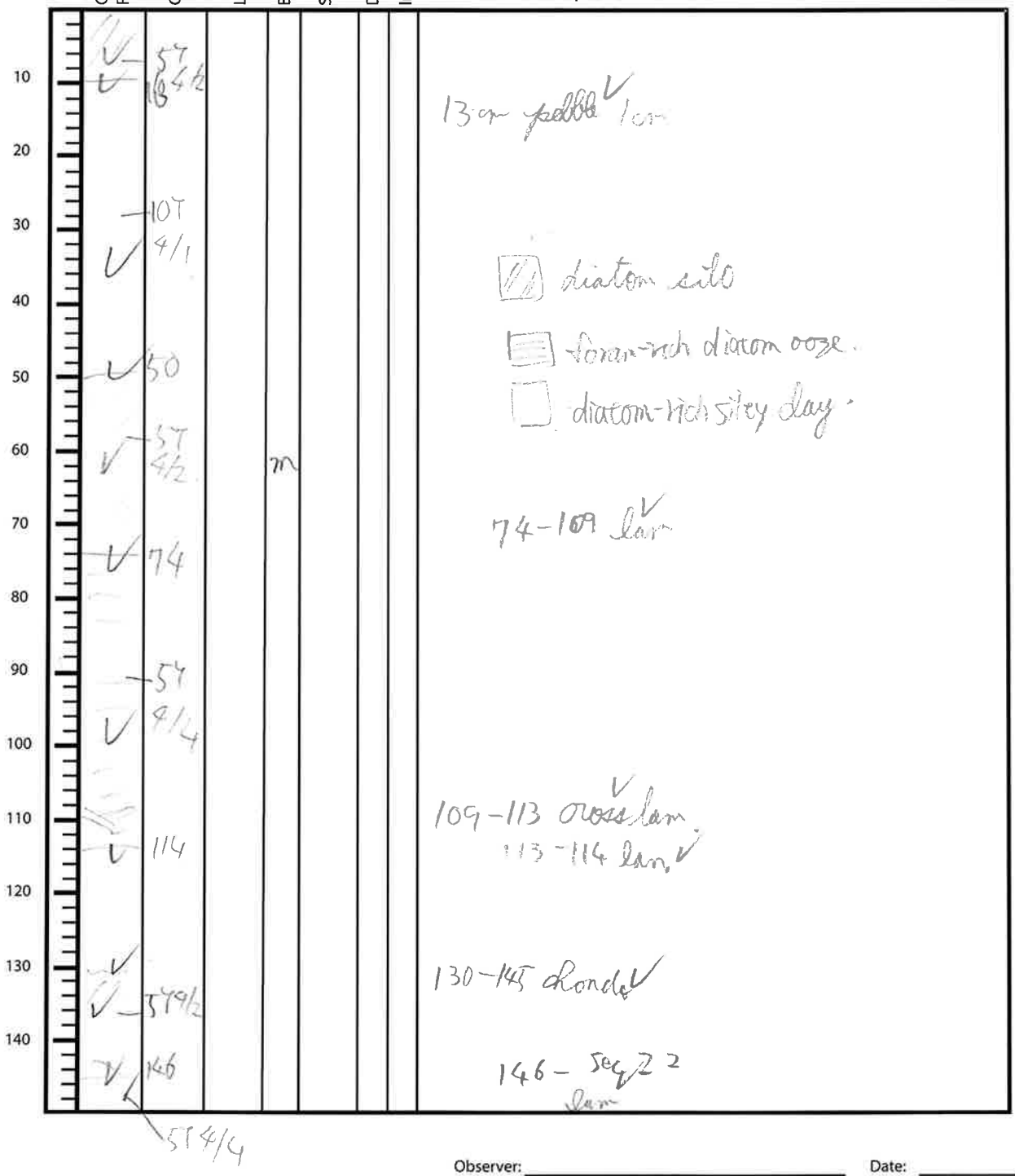
Percent	Component
	SILICICLASTIC GRAINS/MINERAL
	Framework minerals
5%	Quartz
5%	Feldspar
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
	Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
5%	Pyrite
	Magnetite
	Fe-oxide
	Carbonates
5%	Calcite
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
65%	Vitric grain
	Lithic grain

Percent	Component
	BIOGENIC GRAINS
	Calcareous
	Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
15%	Diatoms
10%	Centric
5%	Pennate
	Chaetoceros Resting Spores
	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

Expedition 323
Bering Sea

1342 | D | 4 | 1 | | |
Site | Hole | Core | Section | Top Depth | Scale

Major Lithology | Minor Lithology

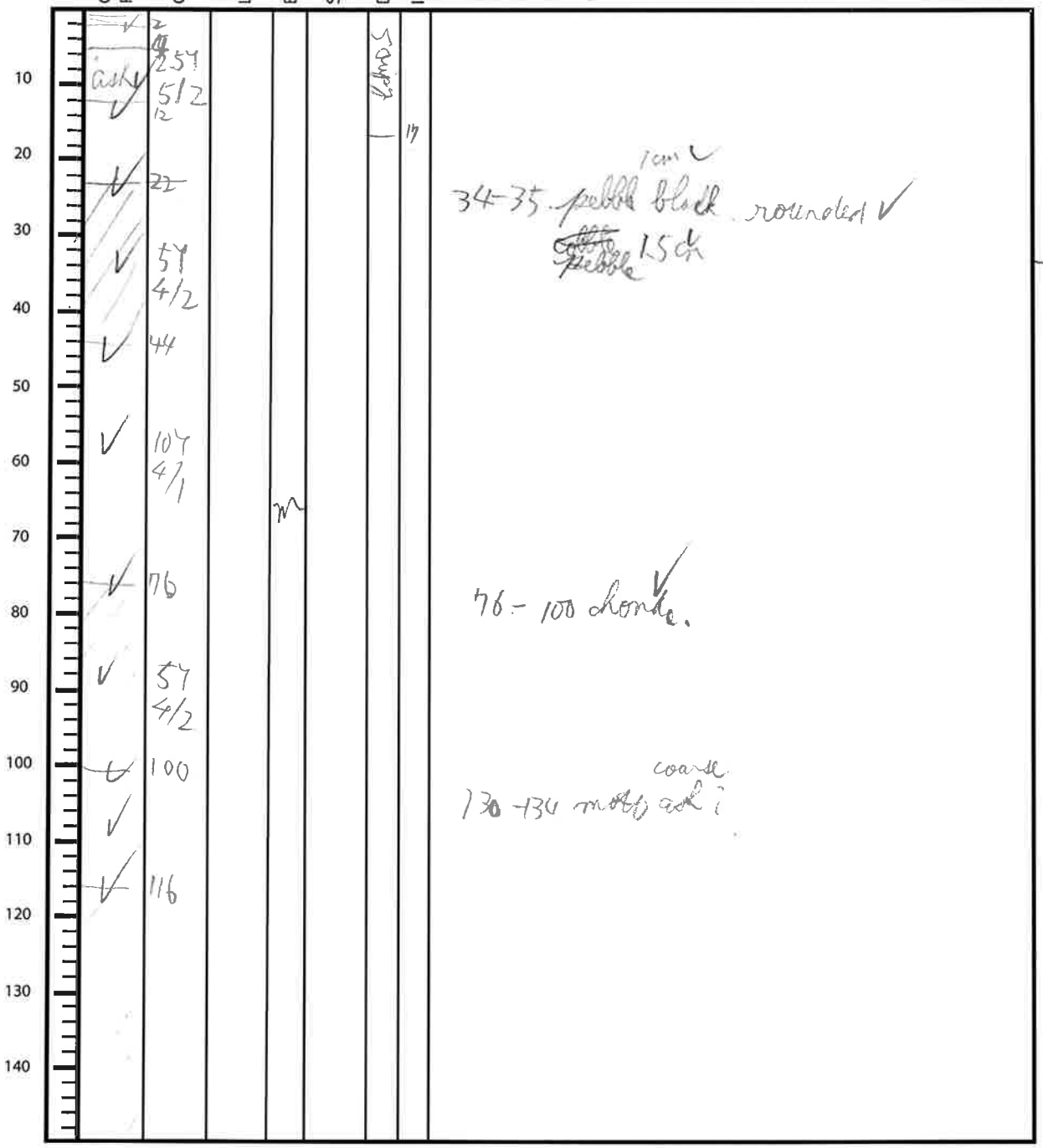


Observer: _____ Date: _____

Expedition 323
Bering Sea

1342 D 4 2 ____ ____
Site Hole Core Section Top Depth Scale

Major Lithology ____ Minor Lithology ____

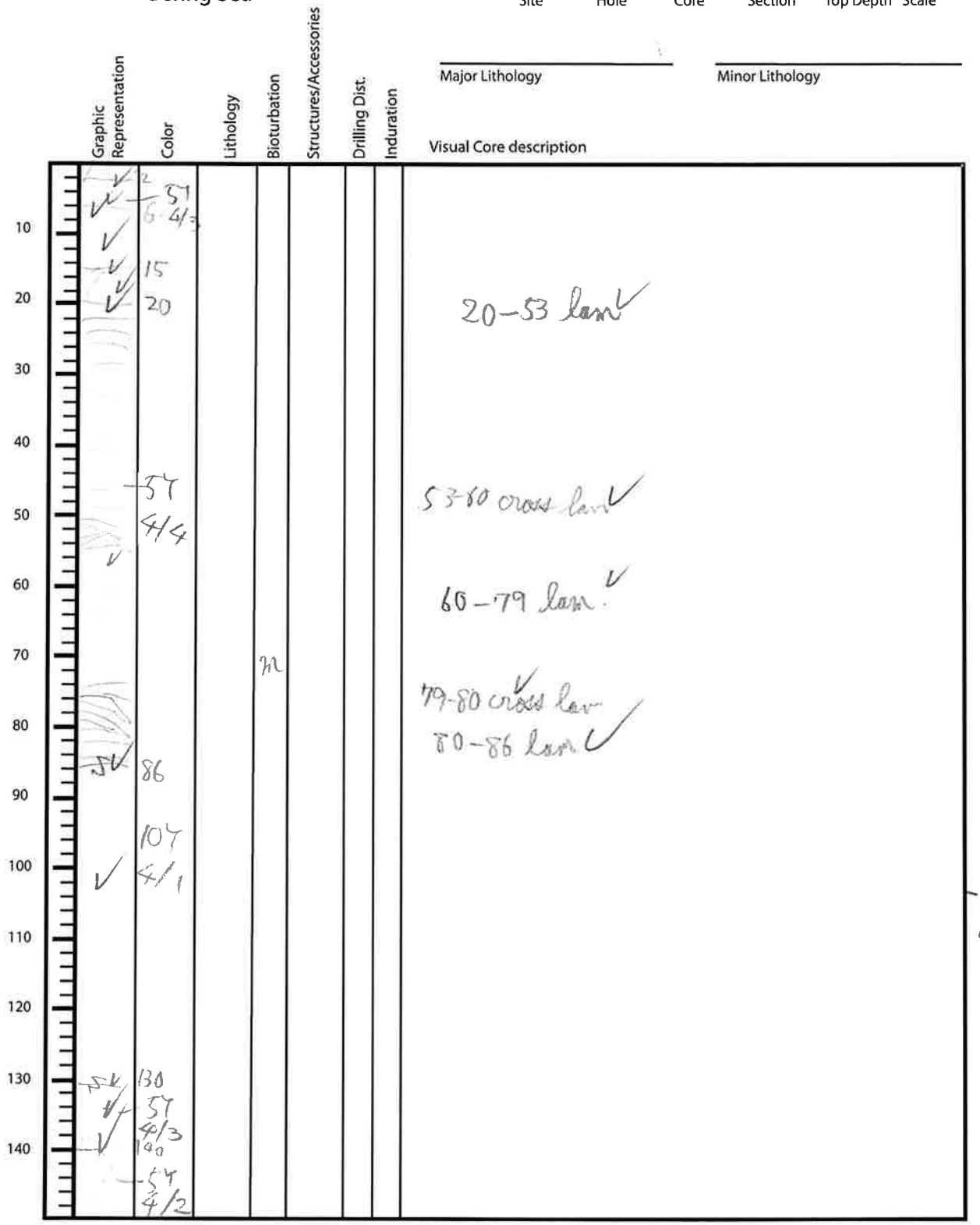


Observer: ____ Date: ____

Expedition 323
Bering Sea

1342 | D | 4 | 3 | | |
Site | Hole | Core | Section | Top Depth | Scale

Major Lithology | Minor Lithology

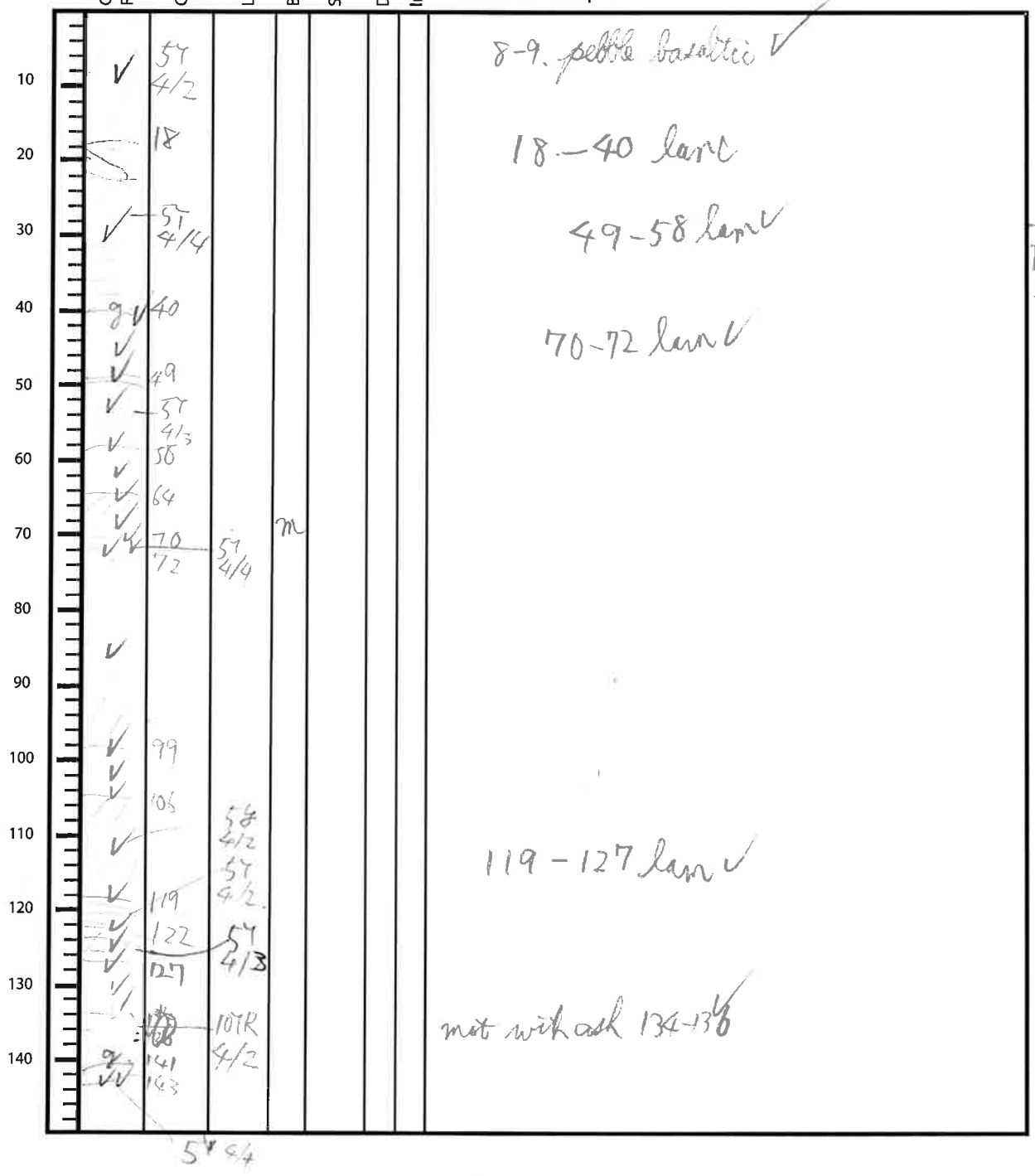


Observer: _____ Date: _____

Expedition 323
Bering Sea

1342 | D | 5 | 4 | | |
Site | Hole | Core | Section | Top Depth | Scale

Major Lithology | Minor Lithology

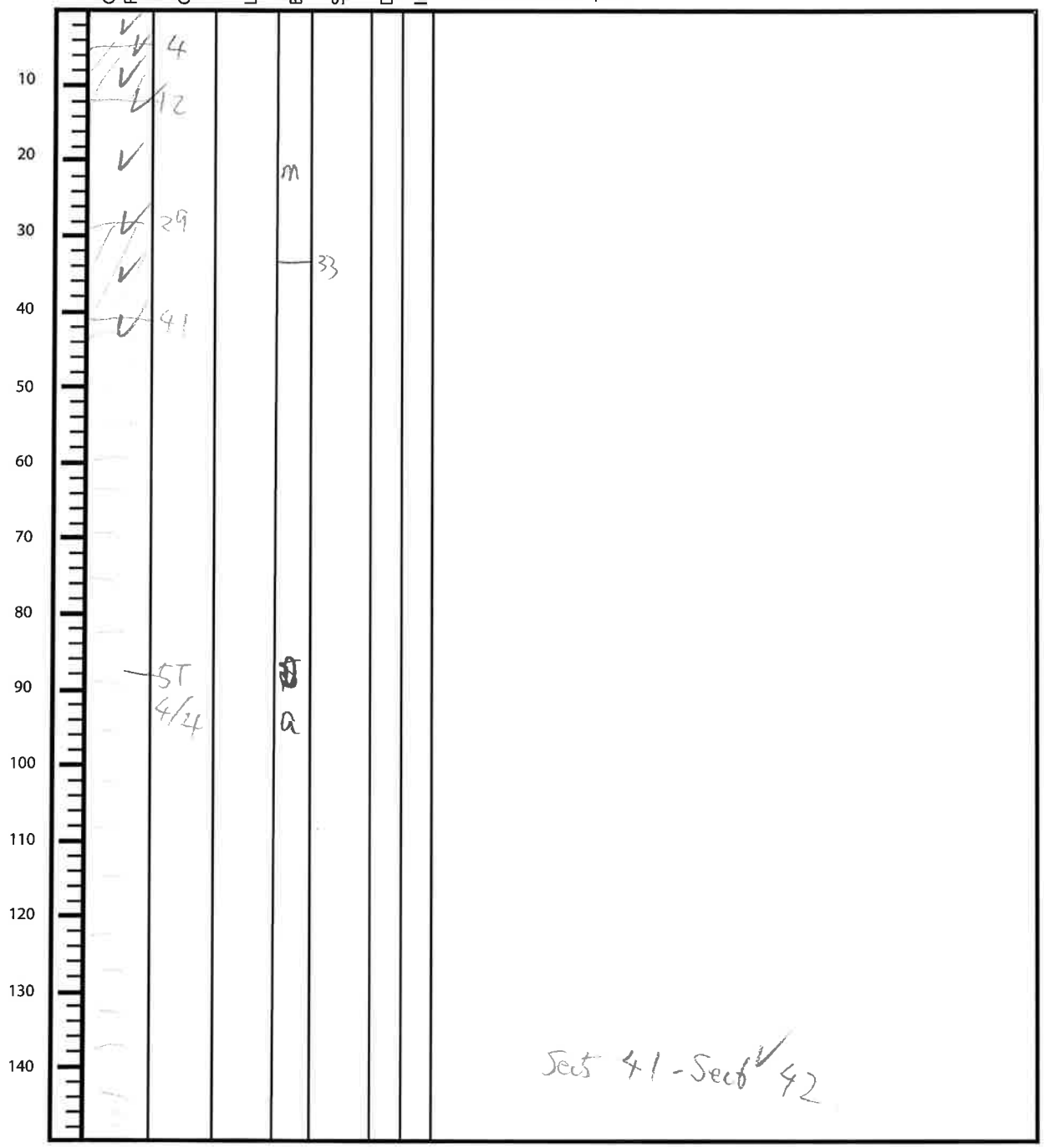


Observer: _____ Date: _____

Expedition 323
Bering Sea

1342 | D | 4 | 5 | | |
Site | Hole | Core | Section | Top Depth | Scale

Major Lithology | Minor Lithology

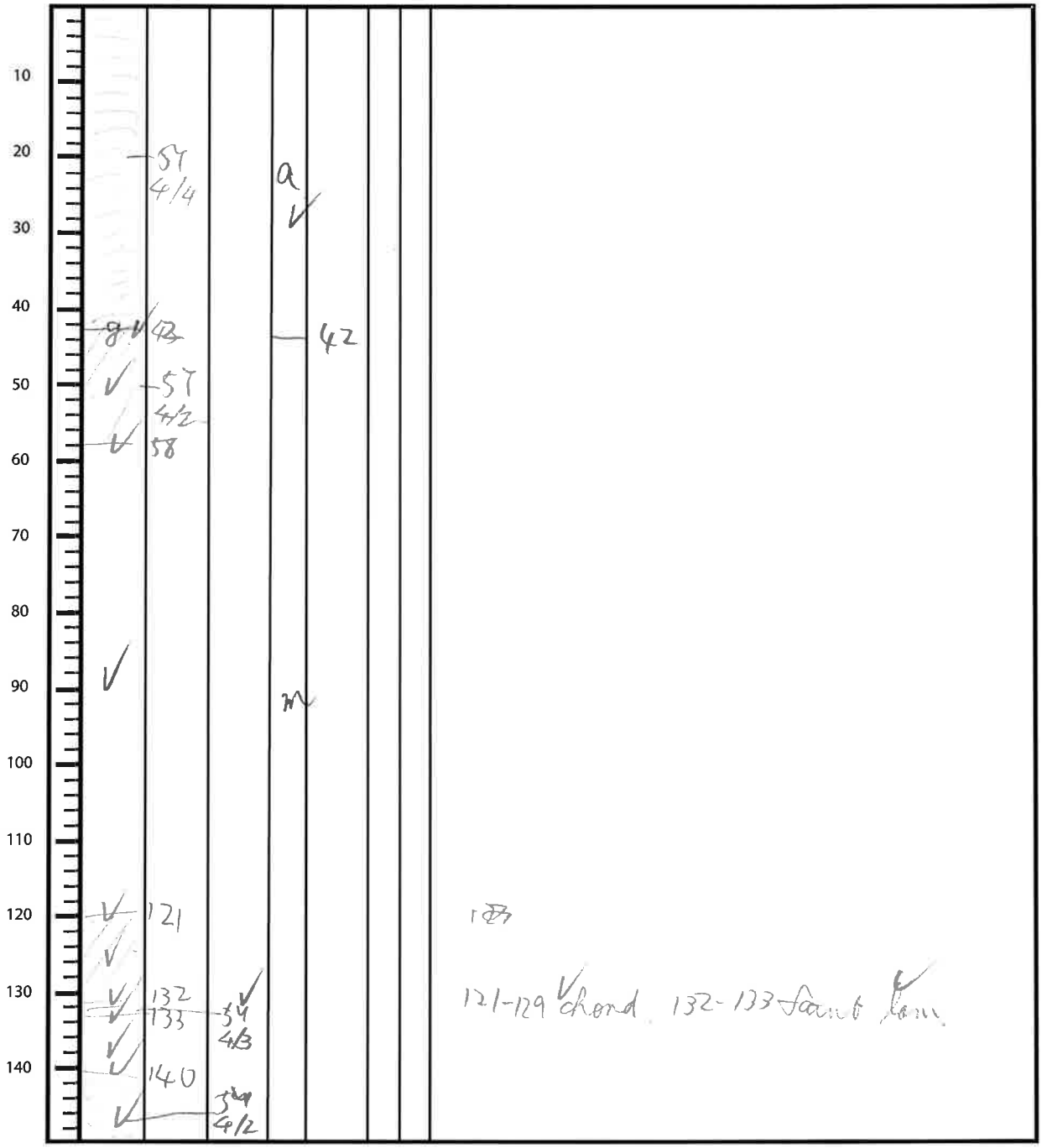


Observer: _____ Date: _____

Expedition 323
Bering Sea

1342 | D | 4 | 6 | | |
Site | Hole | Core | Section | Top Depth | Scale

Major Lithology | Minor Lithology



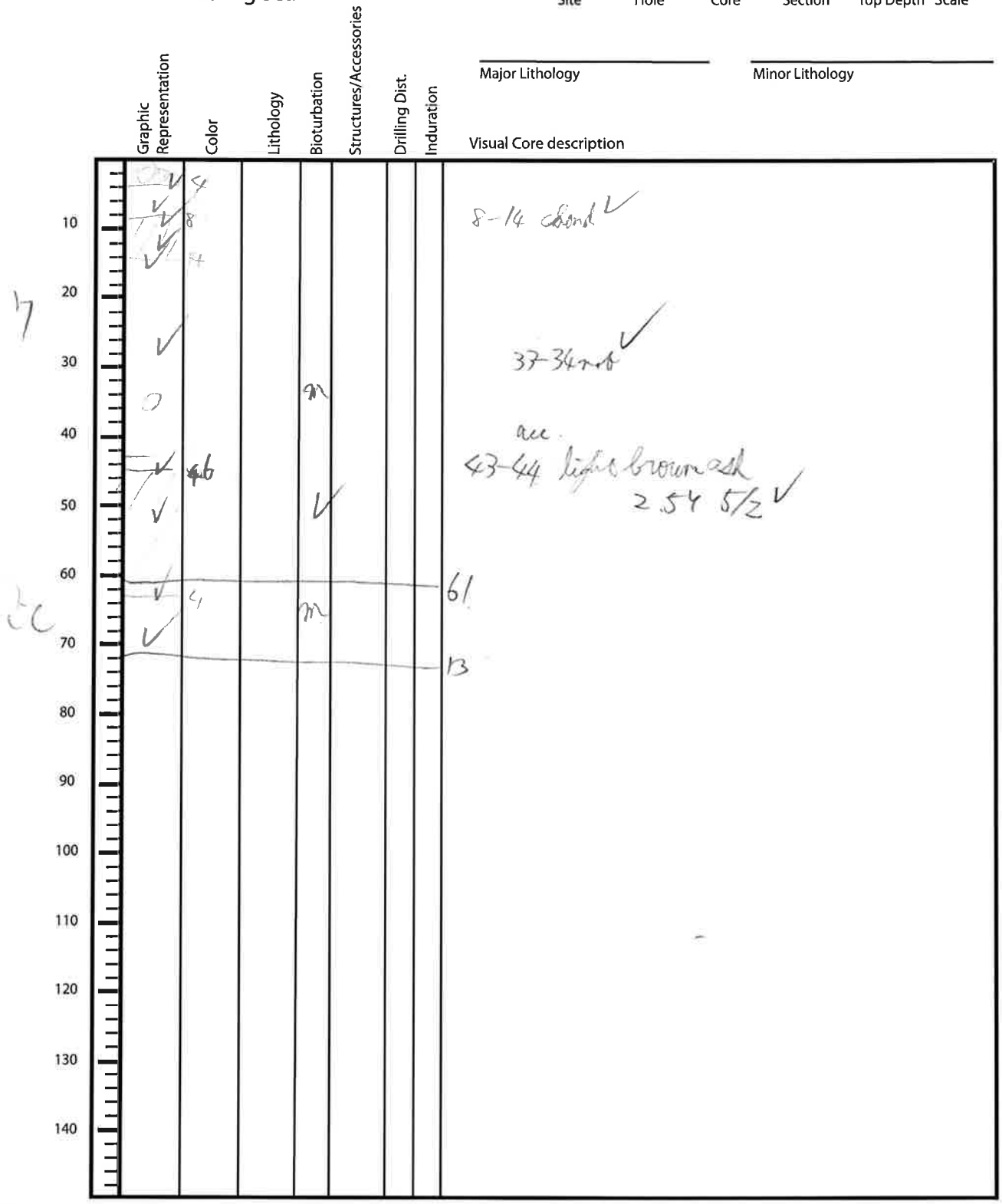
Observer: _____ Date: _____

Expedition 323
Bering Sea

1342 D 4 7+cc
Site Hole Core Section Top Depth Scale

Major Lithology

Minor Lithology



Observer: _____ Date: _____

X

SM

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Interval (cm) Bottom
323	U1342	D	4	H	2	35 cm	

Sediment/Rock Name	Diatom Silt Foram - rich	Observer	G.B.

Percent Texture		
Sand	Silt	Clay

Comments:

Percent	Component
	SILICICLASTIC GRAINS/MINERAL
	Framework minerals
35	Quartz
	Feldspar
	K-feldspar (Orthoclase, Microcline...)
5	Plagioclase
	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
	Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
5	Pyrite
	Magnetite
5	Fe-oxide
	Carbonates
5	Calcite
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
	Vitric grain
	Lithic grain

Percent	Component
	BIOGENIC GRAINS
	Calcareous
	Foraminifera
	Planktonic foraminifera
10	Benthic foraminifera
	Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
40	Diatoms
	Centric
	Pennate
	Chaetoceros Resting Spores
	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

X

SM

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Bottom
323	U1342	D	4	H	3	100 cm	

Sediment/Rock Name	Diatom-rich Silty Clay

Observer	G.B.

Percent Texture		
Sand	Silt	Clay

Comments:

Percent		Component
SILICICLASTIC GRAINS/MINERAL		
		Framework minerals
20	X	Quartz
		Feldspar
		K-feldspar (Orthoclase, Microcline...)
20	X	Plagioclase
		Rock fragments
		Accessory/trace minerals
		Micas
		Biotite
		Muscovite
30	X	Clay Minerals
		Chlorite
		Glauconite
		Chert
		Zircon
		Ferromagnesium minerals
		Authigenic minerals
		Barite
		Phosphorite/Apatite
		Zeolite
		Opaque minerals
1	X	Pyrite
		Magnetite
3	X	Fe-oxide + Hematite
		Carbonates
		Calcite
2	X	Dolomite
VOLCANICLASTIC GRAINS		
		Crystal grain
4	X	Vitric grain
		Lithic grain

Percent		Component
BIOGENIC GRAINS		
		Calcareous
		Foraminifera
		Planktonic foraminifera
		Benthic foraminifera
		Nannofossils
		Coccoliths
		Discoasters
		Pteropods
		Siliceous
		Radiolarians
		Spumellaria
		Nassellaria
20	X	Diatoms
		Centric
		Pennate
		Chaetoceros Resting Spores
		Silicoflagellates
		Sponge spicules
		Dinoflagellates
		Others
		Pollen
		Organic debris
		Plant debris
		Ebridians
		Echinoderm
		Fish remains (teeth, bones, scales)
		Bryozoans
		Bivalves
		Others

SM

X

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Bottom
323	U1342	D	4	H	4	30 cm	

Sediment/Rock Name	Observer
Rad-bearing, Silicof. bearing, Diatom ooze (foram-rich) Sponge spicule-bearing	GB

Percent Texture		
Sand	Silt	Clay

Comments:

Percent	Component
	SILICICLASTIC GRAINS/MINERAL
	Framework minerals
5	Quartz
	Feldspar
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
	Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
	Pyrite
	Magnetite
	Fe-oxide
	Carbonates
15 X	Calcite foram?
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
	Vitric grain
	Lithic grain

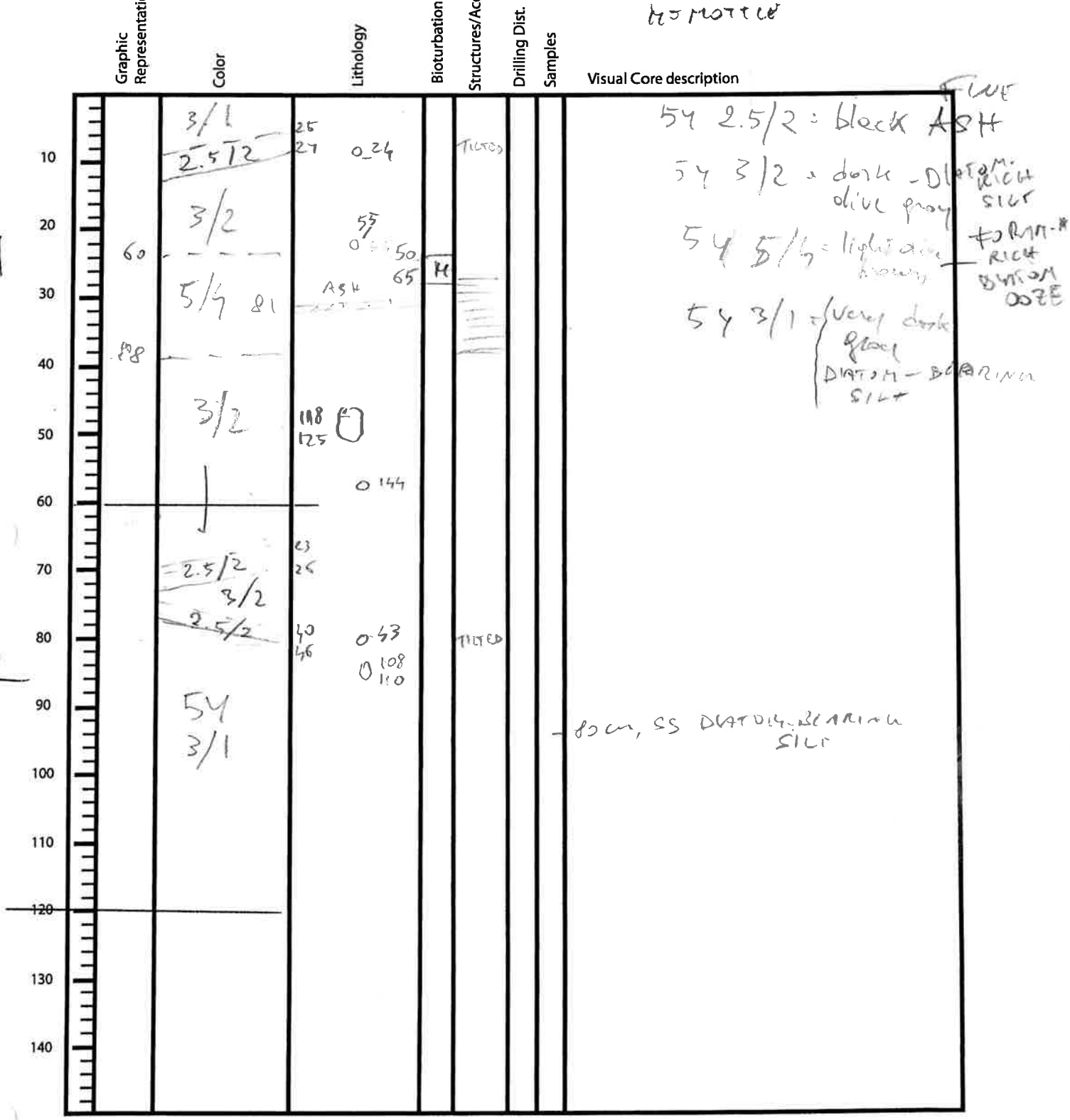
Percent	Component
	BIOGENIC GRAINS
	Calcareous
	Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
5 X	Radiolarians
	Spumellaria
	Nassellaria
60 X	Diatoms
	Centric
	Pennate
	Chaetoceros Resting Spores
5 X	Silicoflagellates
10 X	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

1342 D 5 1–2
Site Hole Core Section Top Depth

Expedition 323
Bering Sea

Major Lithology

Minor Lithology

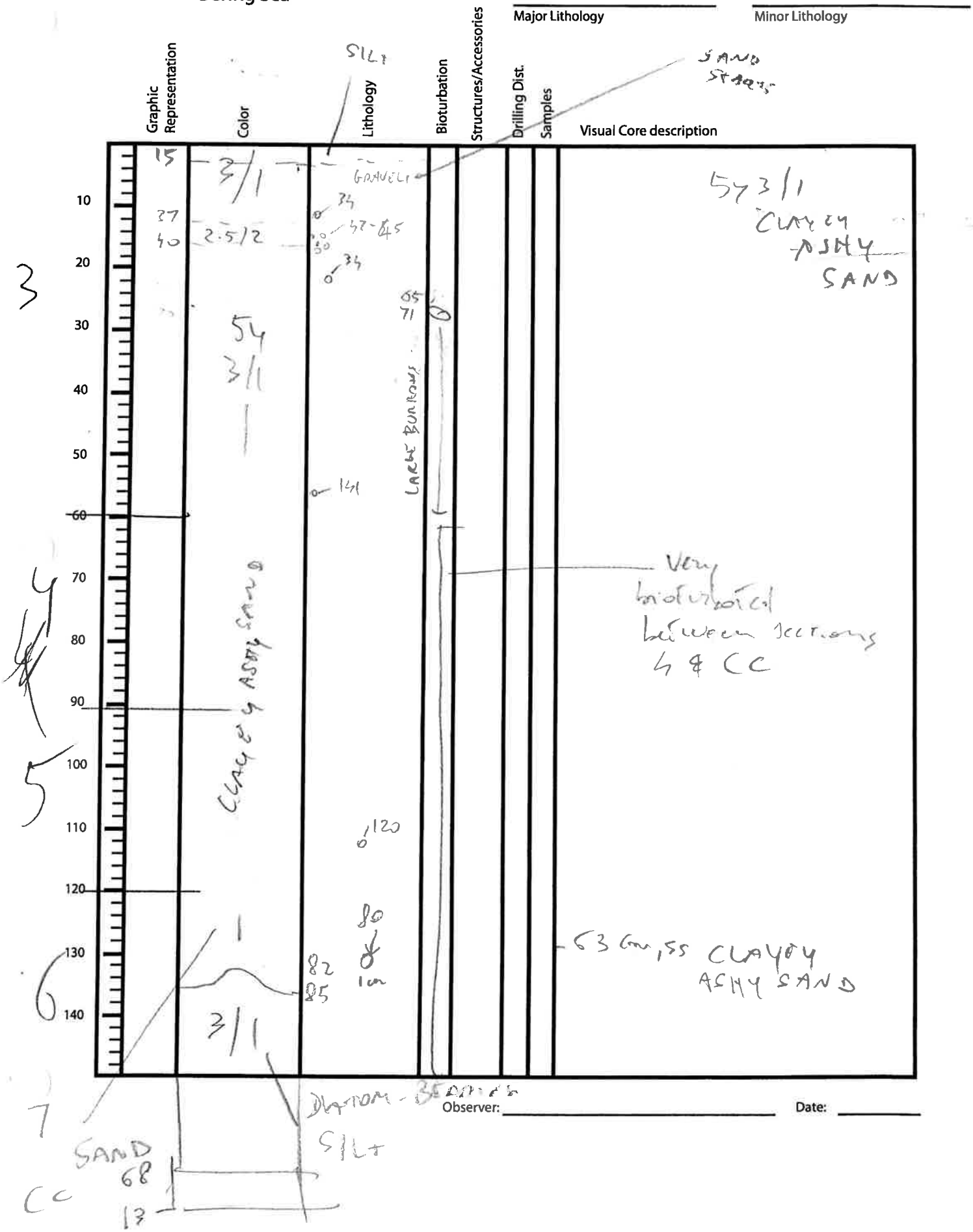


Observer: _____ Date: _____

1312D 5 3-CC
Site Hole Core Section Top Depth

Expedition 323
Bering Sea

Major Lithology Minor Lithology



Observer: Date:

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Bottom
323	U1342	D	5	H	2	80 cm	

SM

Sediment/Rock Name	Diatom. rich Silt

Observer	G.B.

Percent Texture		
Sand	Silt	Clay

Comments:

Percent	Component
SILICICLASTIC GRAINS/MINERAL	
	Framework minerals
50 X	Quartz
	Feldspar
5	K-feldspar (Orthoclase, Microcline...)
5	Plagioclase
	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
20 X	Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
	Pyrite
	Magnetite
5 X	Fe-oxide
	Carbonates
	Calcite
	Dolomite
VOLCANICLASTIC GRAINS	
	Crystal grain
5	
	Vitric grain
	Lithic grain

Percent	Component
BIOGENIC GRAINS	
	Calcareous
	Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
10 X	Diatoms
	Centric
	Pennate
	Chaetoceros Resting Spores
	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Bottom
323	U1342	D	5	H	5	10 cm	

Sediment/Rock Name	Diatom - rich Sand

Observer	G.B.

Percent Texture		
Sand	Silt	Clay

Comments:

Percent	Component
	SILICICLASTIC GRAINS/MINERAL
	Framework minerals
80 x	Quartz
5 x	Feldspar
	K-feldspar (Orthoclase, Microcline...)
5 x	Plagioclase
	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
20 x	Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
5 x	Pyrite
	Magnetite
5 x	Fe-oxide
	Carbonates
	Calcite
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
	Vitric grain
	Lithic grain

Percent	Component
	BIOGENIC GRAINS
	Calcareous
	Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
10 x	Diatoms
	Centric
	Pennate
	Chaetoceros Resting Spores
	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

X

SM

IODP Expedition 323
SEDIMENT SMEAR SLIDE WORKSHEET

Leg	Site	Hole	Core	Type	Sec	Interval (cm) Top	Bottom
	1342	D	5		6	63cm	

Sediment/Rock Name	~~Clayey Sand~~	Observer	KUA

~~Clayey Ashy Sand~~

30 20 45

Comments: Fine-ashy Clayey sand.

Percent Texture		
Sand	Silt	Clay
70	20	

Fine sand

↳ mostly siliciclastics

Percent	Component
	SILICICLASTIC GRAINS/MINERAL
	Framework minerals
15%	Quartz
15%	Feldspar
	K-feldspar (Orthoclase, Microcline...)
	Plagioclase
15%	Rock fragments
	Accessory/trace minerals
	Micas
	Biotite
	Muscovite
30%	Clay Minerals
	Chlorite
	Glauconite
	Chert
	Zircon
	Ferromagnesium minerals
	Authigenic minerals
	Barite
	Phosphorite/Apatite
	Zeolite
	Opaque minerals
	Pyrite
	Magnetite
	Fe-oxide
	Carbonates
	Calcite
	Dolomite
	VOLCANICLASTIC GRAINS
	Crystal grain
20%	Vitric grain
	Lithic grain

Percent	Component
	BIOGENIC GRAINS
	Calcareous
	Foraminifera
	Planktonic foraminifera
	Benthic foraminifera
	Nannofossils
	Coccoliths
	Discoasters
	Pteropods
	Siliceous
	Radiolarians
	Spumellaria
	Nassellaria
<5%	Diatoms
	Centric
	Pennate
	Chaetoceros Resting Spores
	Silicoflagellates
	Sponge spicules
	Dinoflagellates
	Others
	Pollen
	Organic debris
	Plant debris
	Ebridians
	Echinoderm
	Fish remains (teeth, bones, scales)
	Bryozoans
	Bivalves
	Others

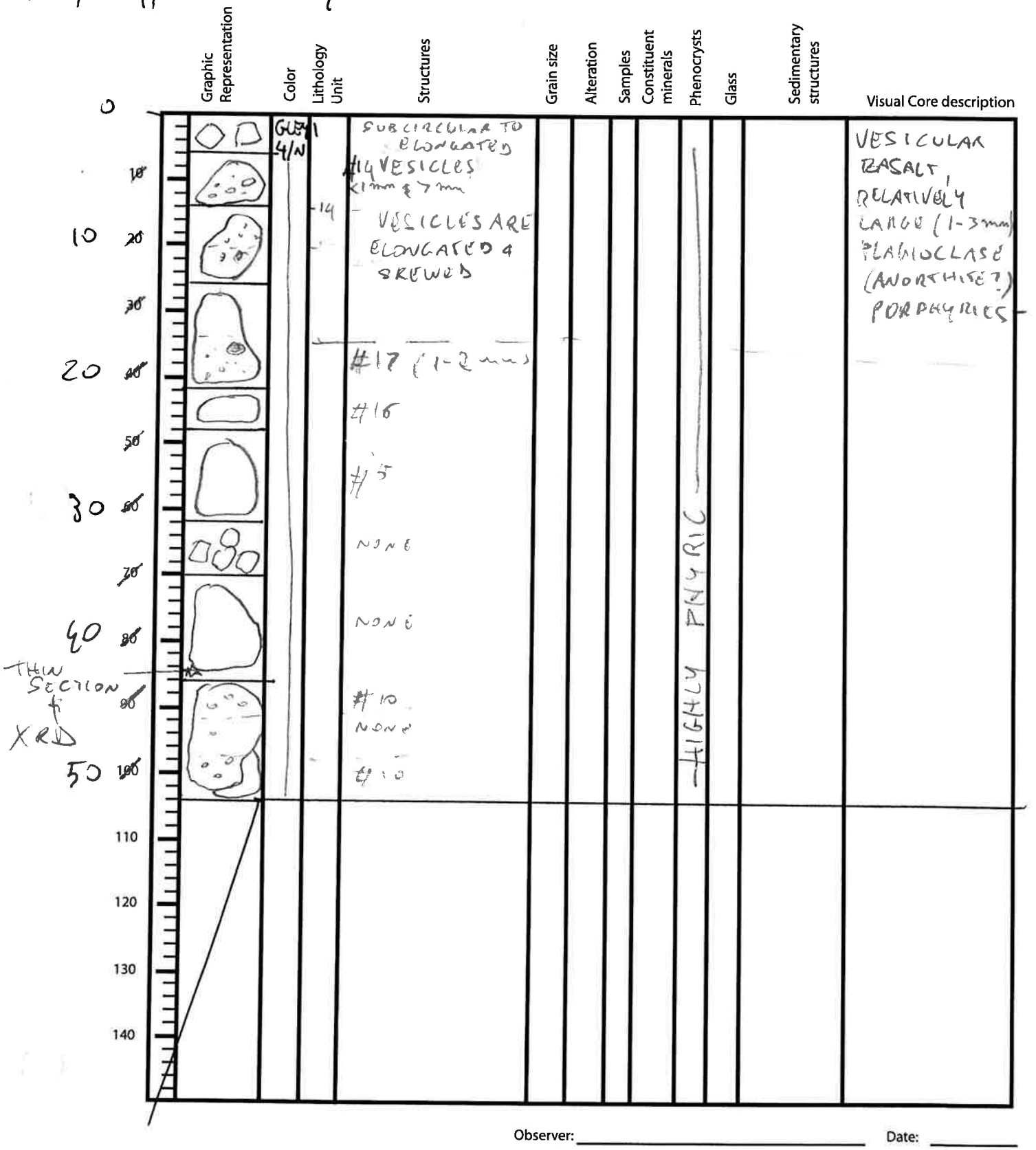
(dry color) VESICLES/inch^2

Expedition 323
Bering Sea
(Hard rock VCD)

1342 A 9X 1W
Site Hole Core Section Top Depth

GLEY 1 4/N = DARK GRAY

Major Lithology

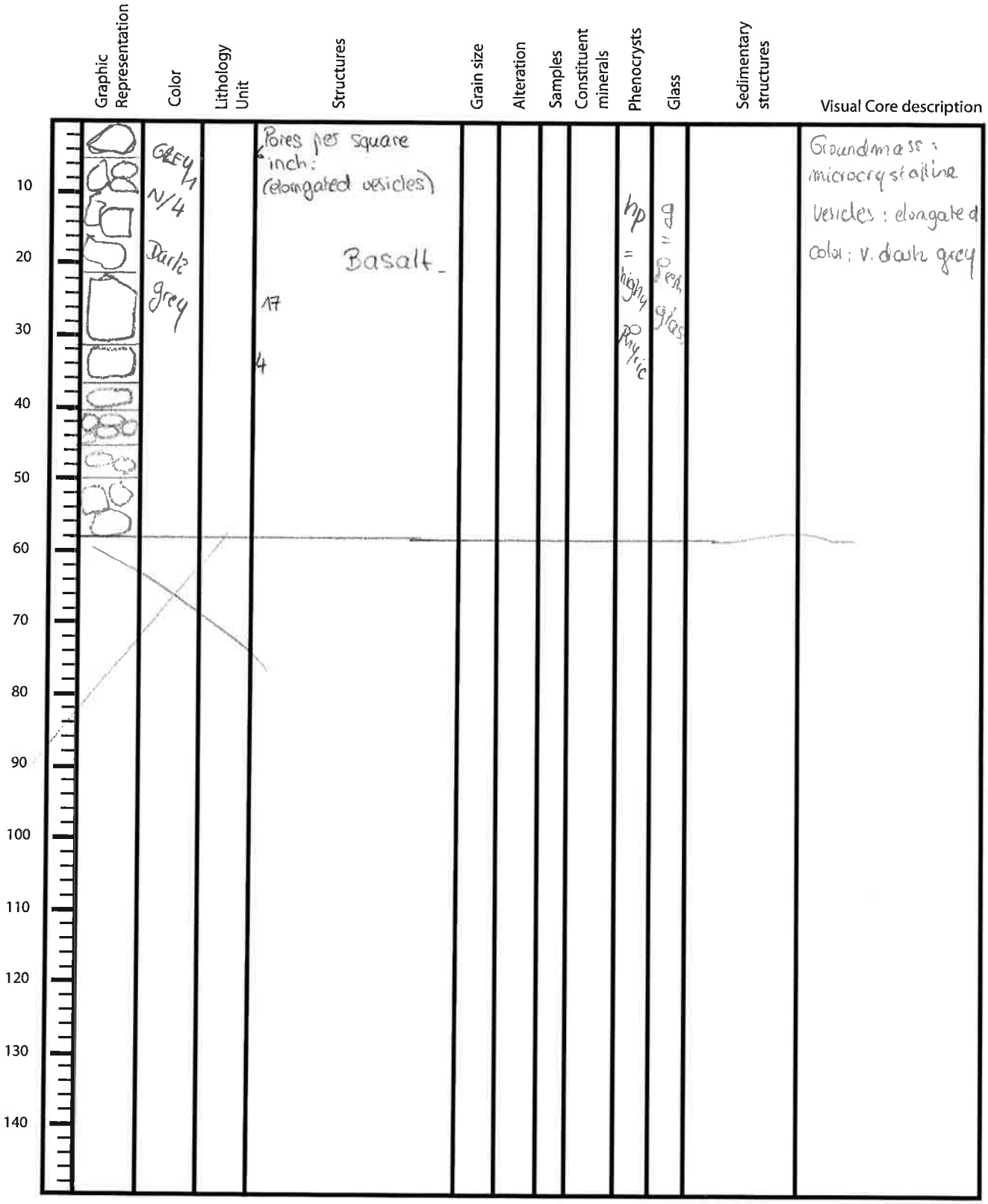


Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 (Site) | D (Hole) | 7X (Core) | 1 (Section) | _____ (Top Depth)

Major Lithology _____ _____



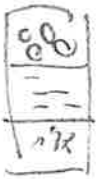
Observer: G.B. Date: _____

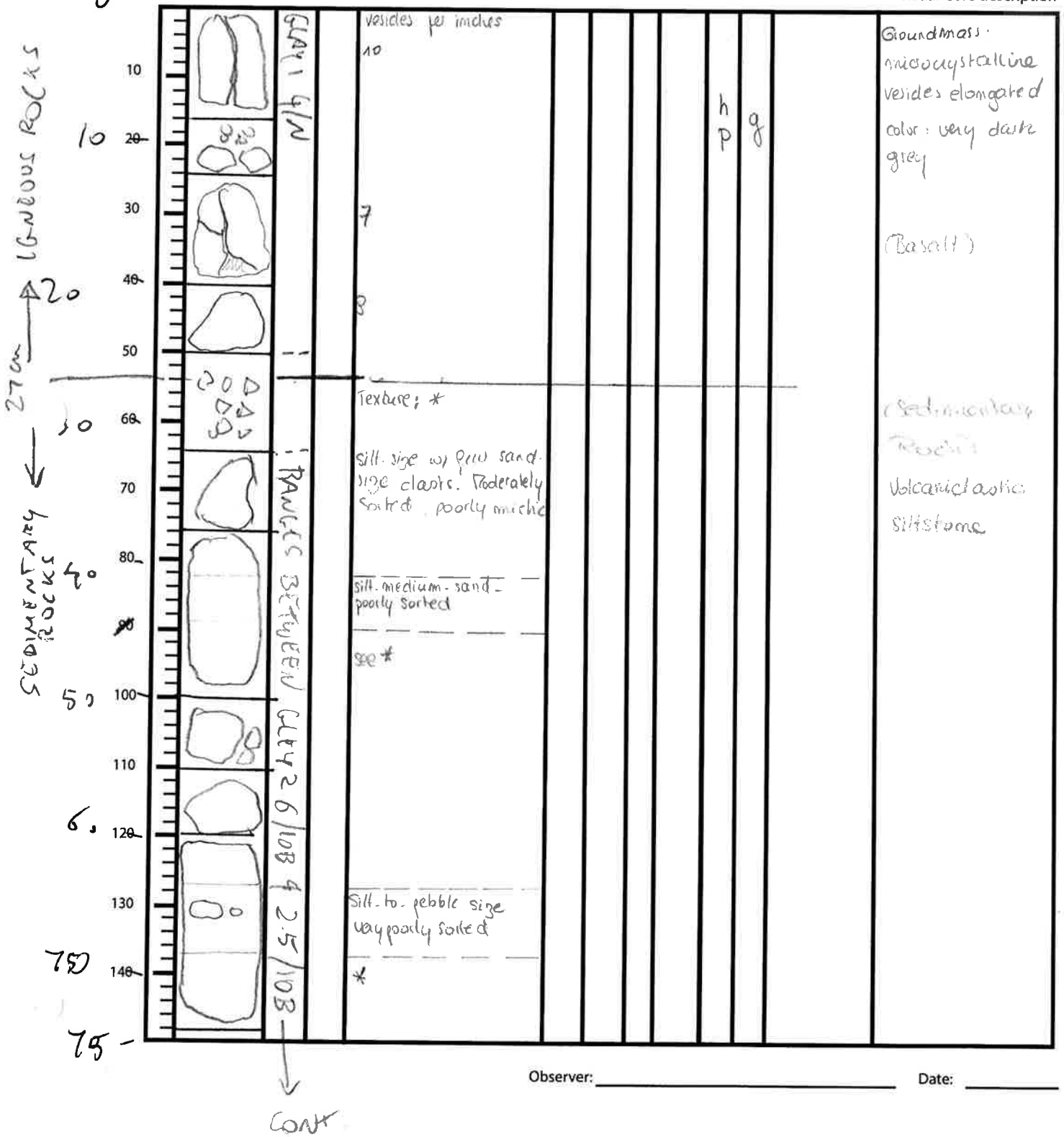
Expedition 323
Bering Sea
(Hard rock VCD)

1342 Site | D Hole | 8X Core | 1a Section | ____ Top Depth

Major Lithology

SORTING



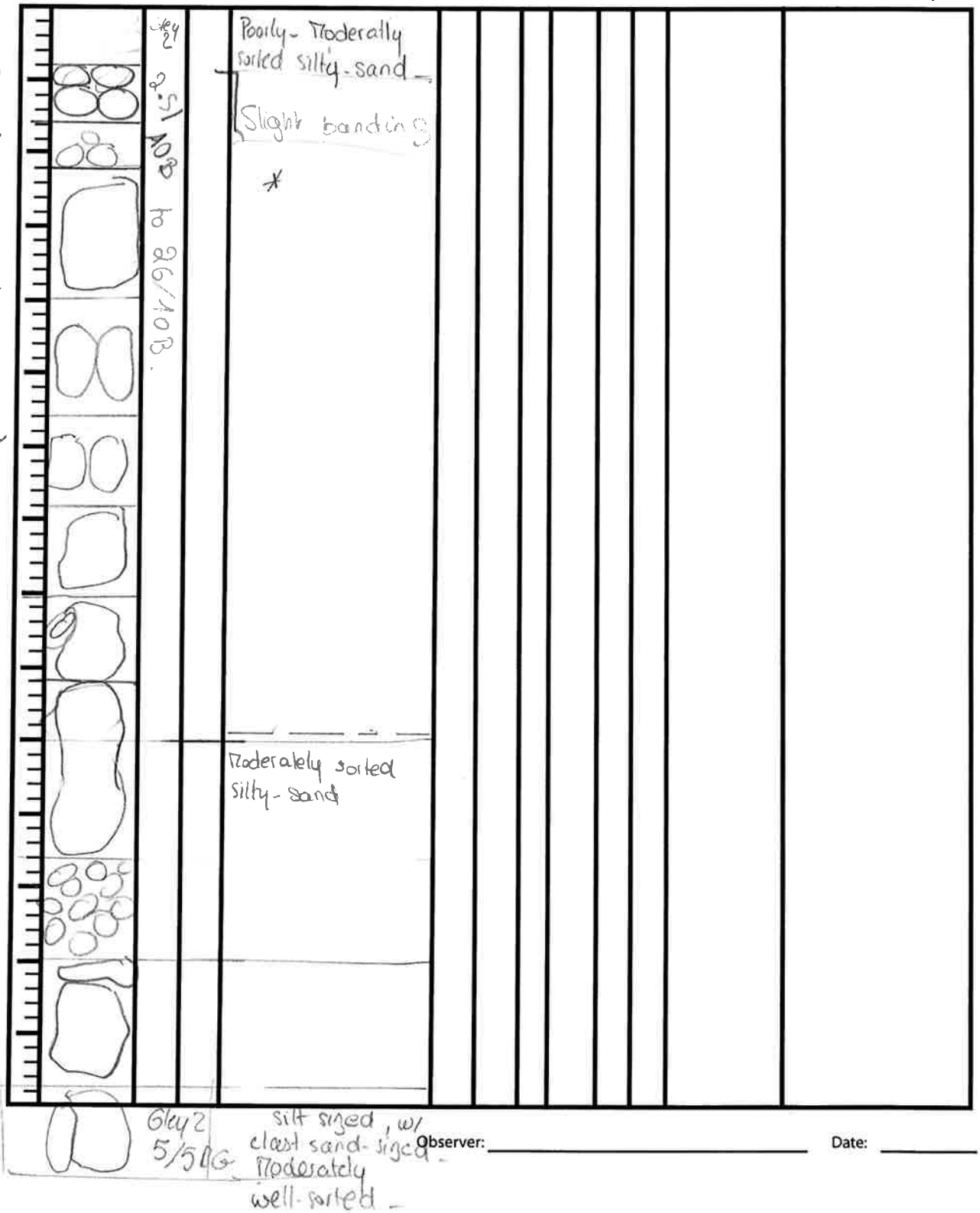


Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 | D | 8X | 1 | b
Site | Hole | Core | Section | Top Depth

Major Lithology

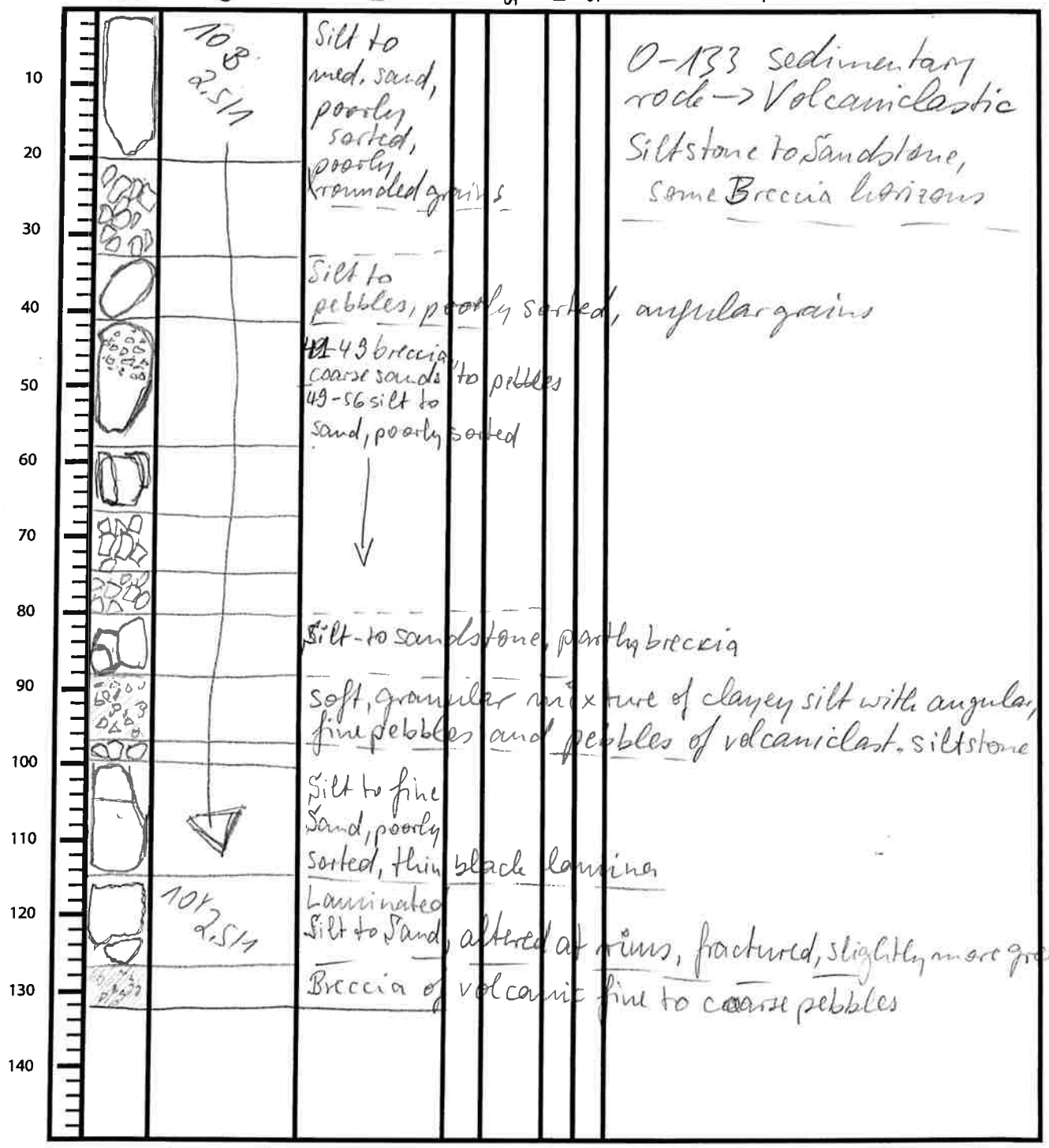


Observer: _____ Date: _____

1342 | D | 8X- | 2 | ____
Site | Hole | Core | Section | Top Depth

Expedition 323
Bering Sea
(Hard rock VCD)

Major Lithology _____ Minor Lithology _____



Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 Site | D Hole | 9X Core | 1 Section | _____ Top Depth

_____ Major Lithology

_____

Sedimentary rock (volcaniclastic)

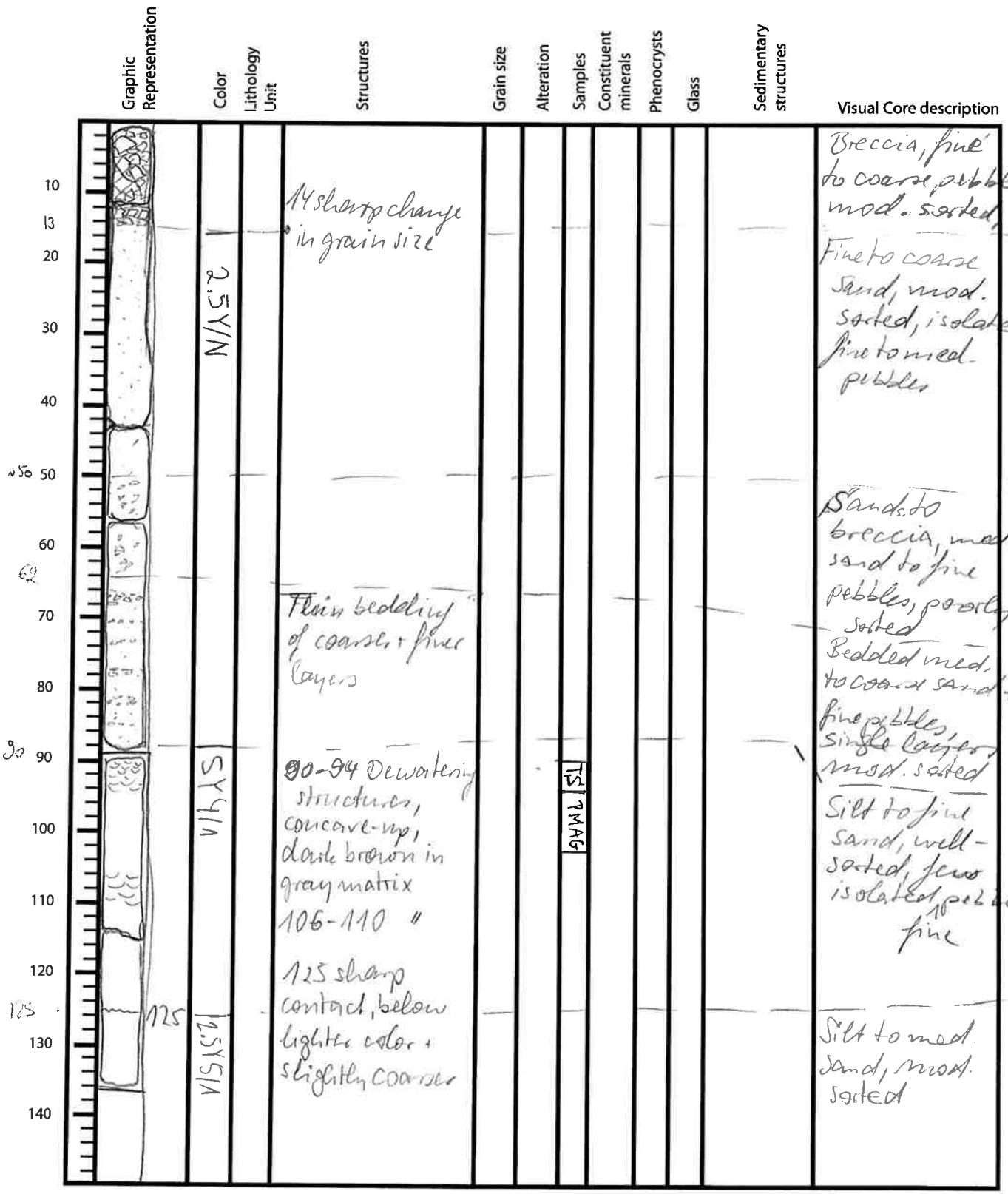
Graphic Representation	Color	Lithology Unit	Structures	Grain size	Alteration	Samples	Constituent minerals	Phenocrysts	Glass	Sedimentary structures	Visual Core description
10 20 30 40 50 60 70 80 90 100 110 120 130 140	5GY 2.5/1	68	Greenish streaks, maybe altered matrix material; comp. with colors from dark gray to light gray to dark greenish to reddish Fines fraction (sand) rather greenish 68 cm sharp grain size change		slight	TS8					Volcanoclast. Breccia, fine to coarse pebbles, angular, poorly sorted, not graded
	10G 2.5/1 5GY 2.5/1	85									Coarse sand to Breccia, fine to med. pebbles, angular, poorly sorted Silt to coarse sand, few breccia patches with fine pebbles, poorly sorted Breccia, med. to coarse pebbles, angular, well-sorted
					mod.	TS3					

Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 Site | D Hole | 9X Core | 2 Section | Top Depth

Major Lithology

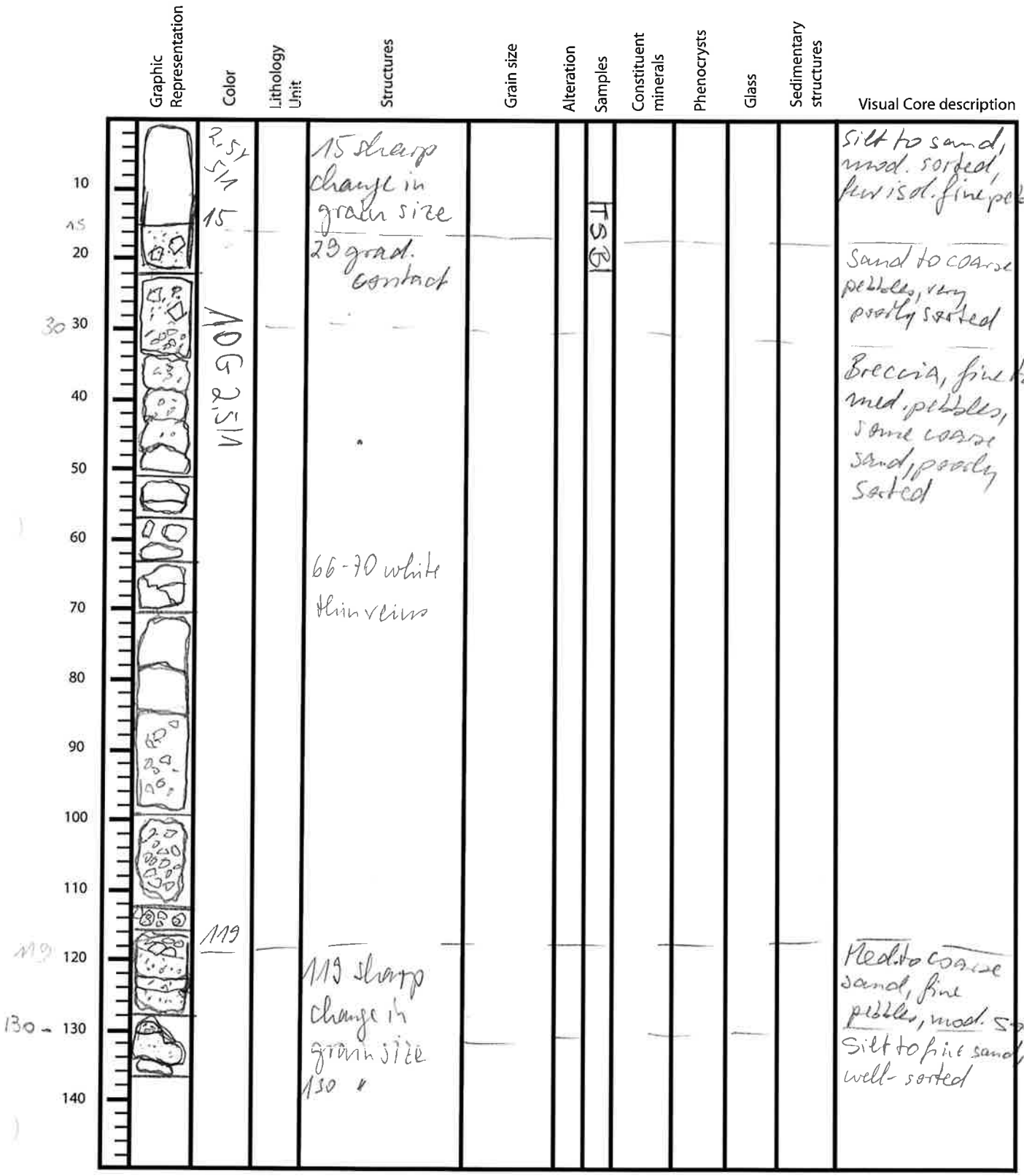


Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 (Site) D (Hole) 9X (Core) 3 (Section) ____ (Top Depth)

Major Lithology

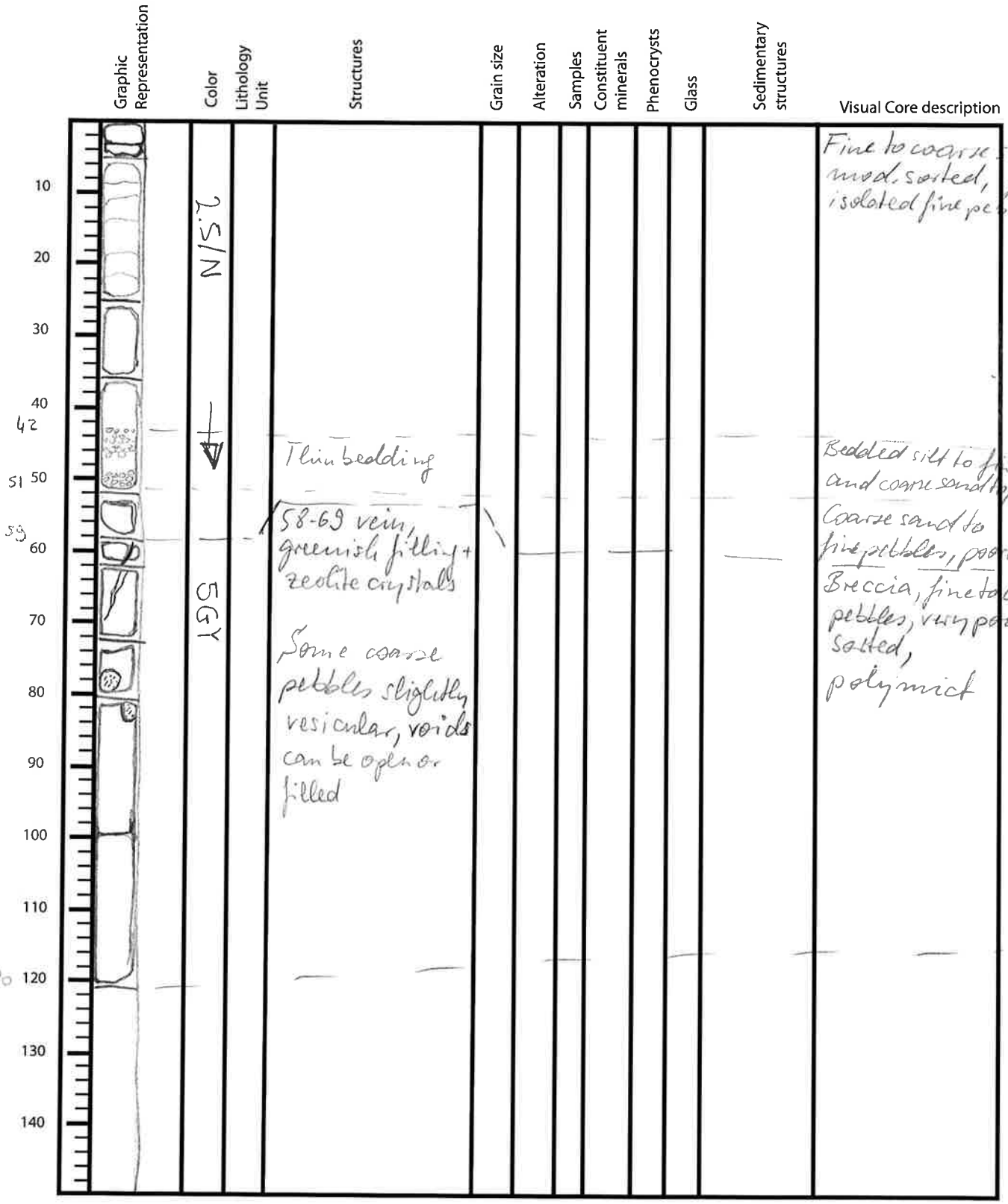


Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 (D) 10X 1 ____
Site Hole Core Section Top Depth

Major Lithology

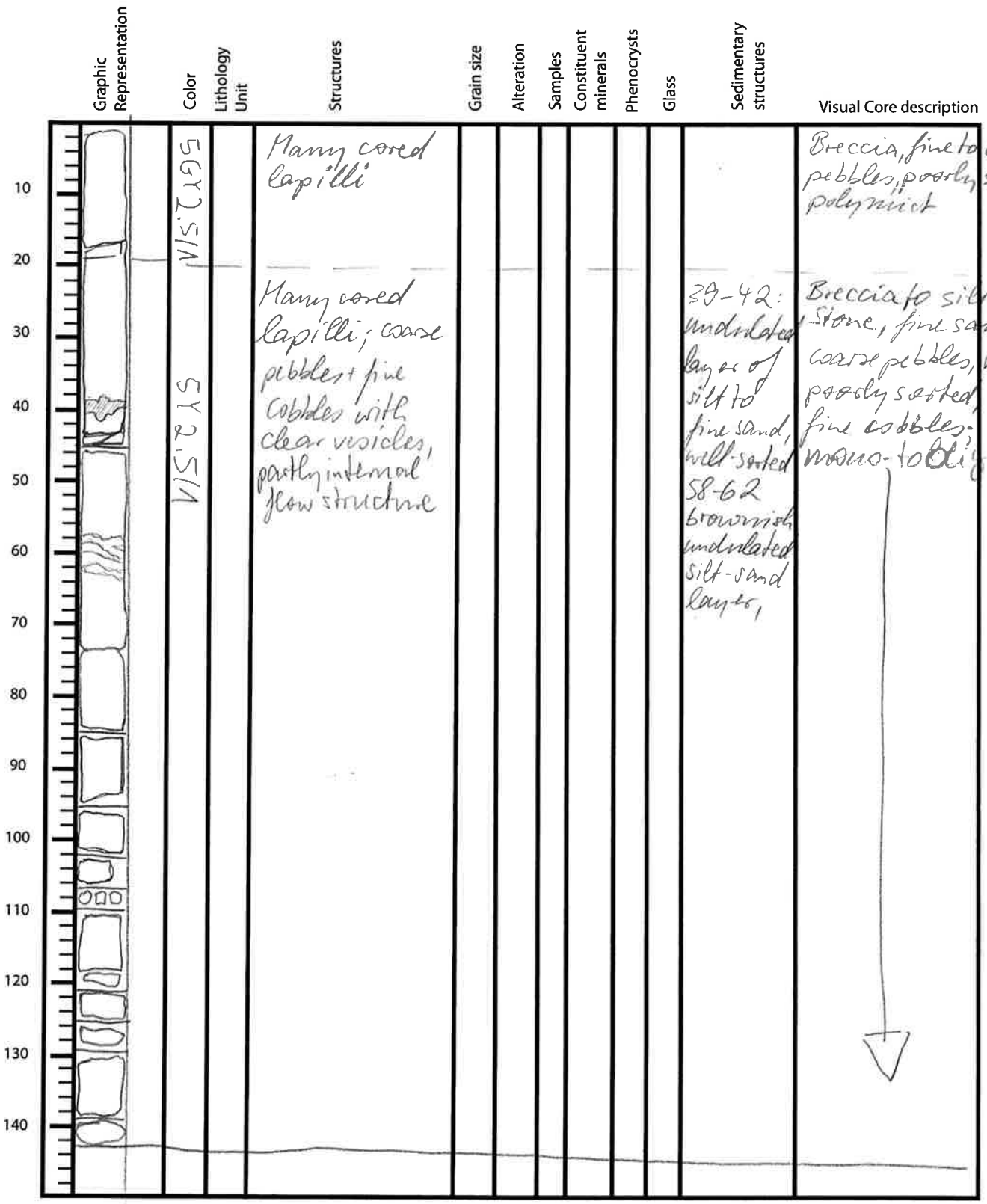


Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 Site | D Hole | 10X Core | 2 Section | Top Depth

Major Lithology

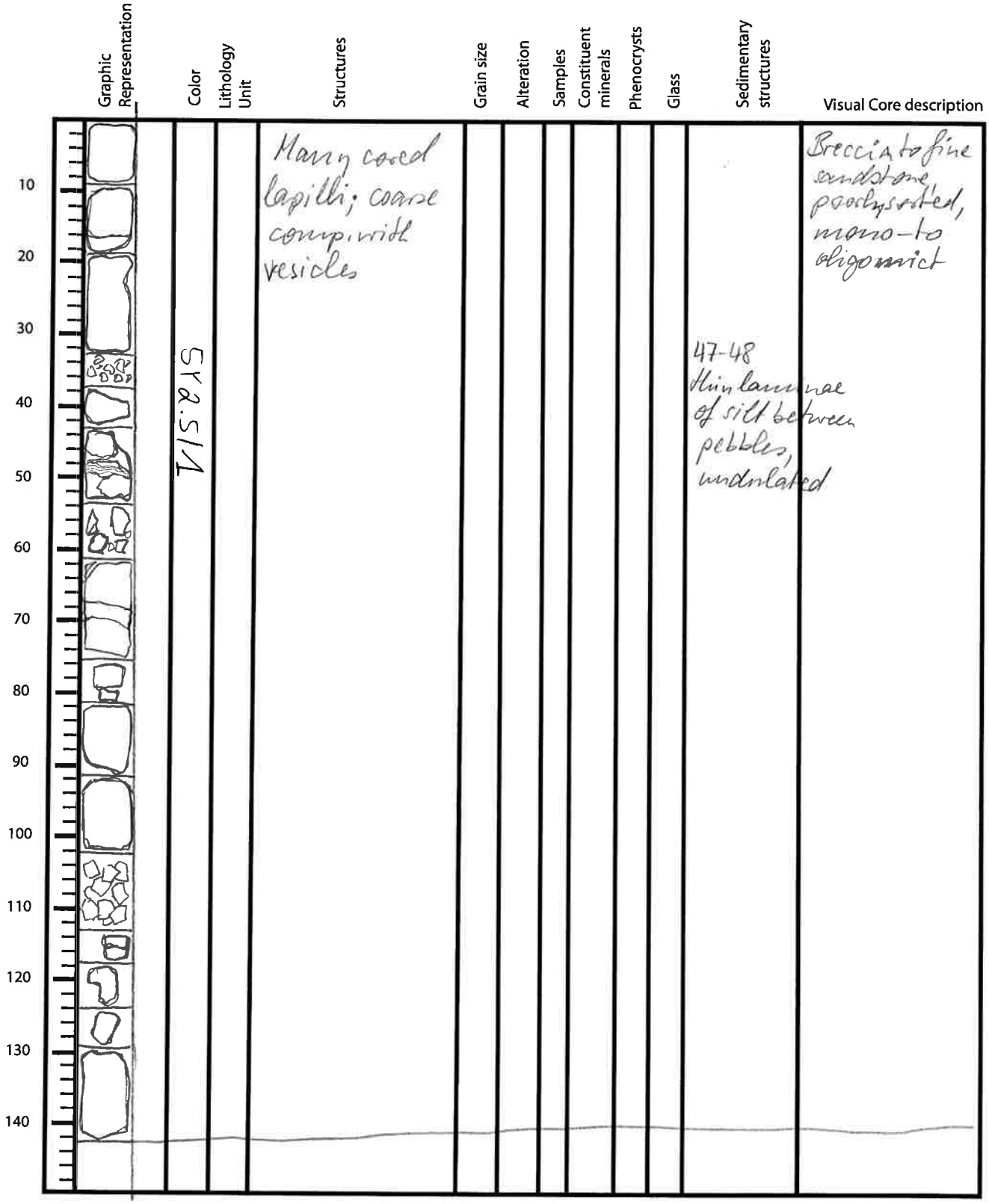


Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 / D / 10X / 3 / ____
Site / Hole / Core / Section / Top Depth

Major Lithology

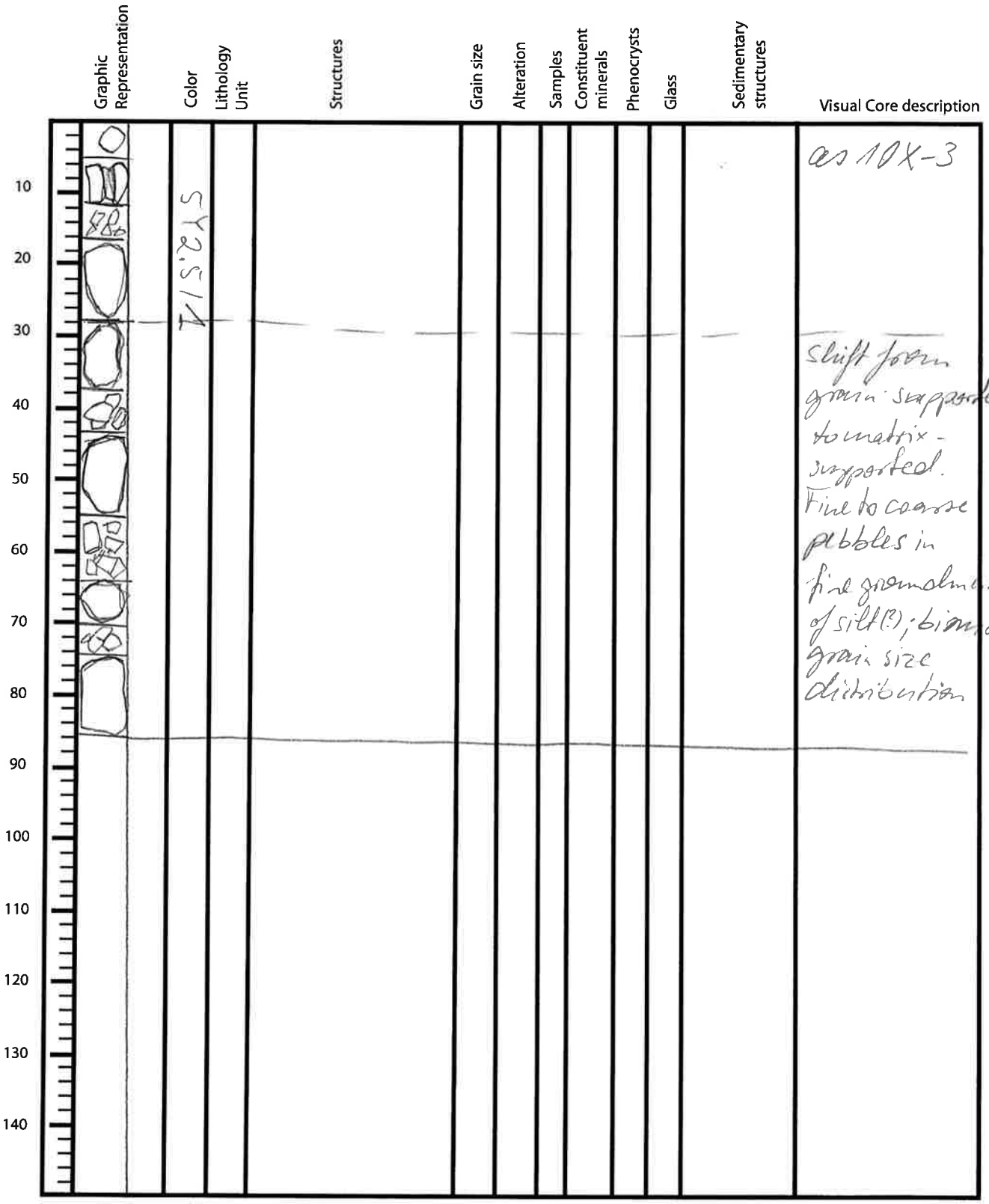


Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 Site | D Hole | 10X Core | 4 Section | _____ Top Depth

_____ Major Lithology



Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 (Site) D (Hole) 11X (Core) 1A (Section) ____ (Top Depth)

XLS = crystals

Major Lithology

Graphic Representation | Color | Lithology Unit | Structures | Grain size | Alteration | Samples | Constituent minerals | Phenocrysts | Glass | Sedimentary structures | Visual Core description

5 10 12 18 20 24.5 30 33 40 42.5 49.5 50 58 60 65 70 80 87.5 90 95 100 103 109 110 120.5 120 129.5 130 137.5 140 143

vesiculated basalt clasts

Poorly sorted

Most have halo surrounding it.

some vesicles have pale blue mineral coating

others filled w/ white XLS or pyrite

clast-supported

Matrix = v. fine grain, no vesicles visible

vesicles are elongate in general

2.5N groundmass w/ 6N "clasts"

11X 1 10A:

sub angular clasts

Poorly sorted clasts

Basalt clasts w/halo

Bottom 2 cm is lg basalt (vesiculated) piece. vesicles filled w/ calcite

Some clasts = altered glass?

Sm. vesicles = spherical

lg. vesicles = ovoid. ⊥ to bedding

mm to 5cm

Relatively fresh

58 60 75

Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 Site | D Hole | 11X Core | 2 Section | _____ Top Depth

_____ Major Lithology

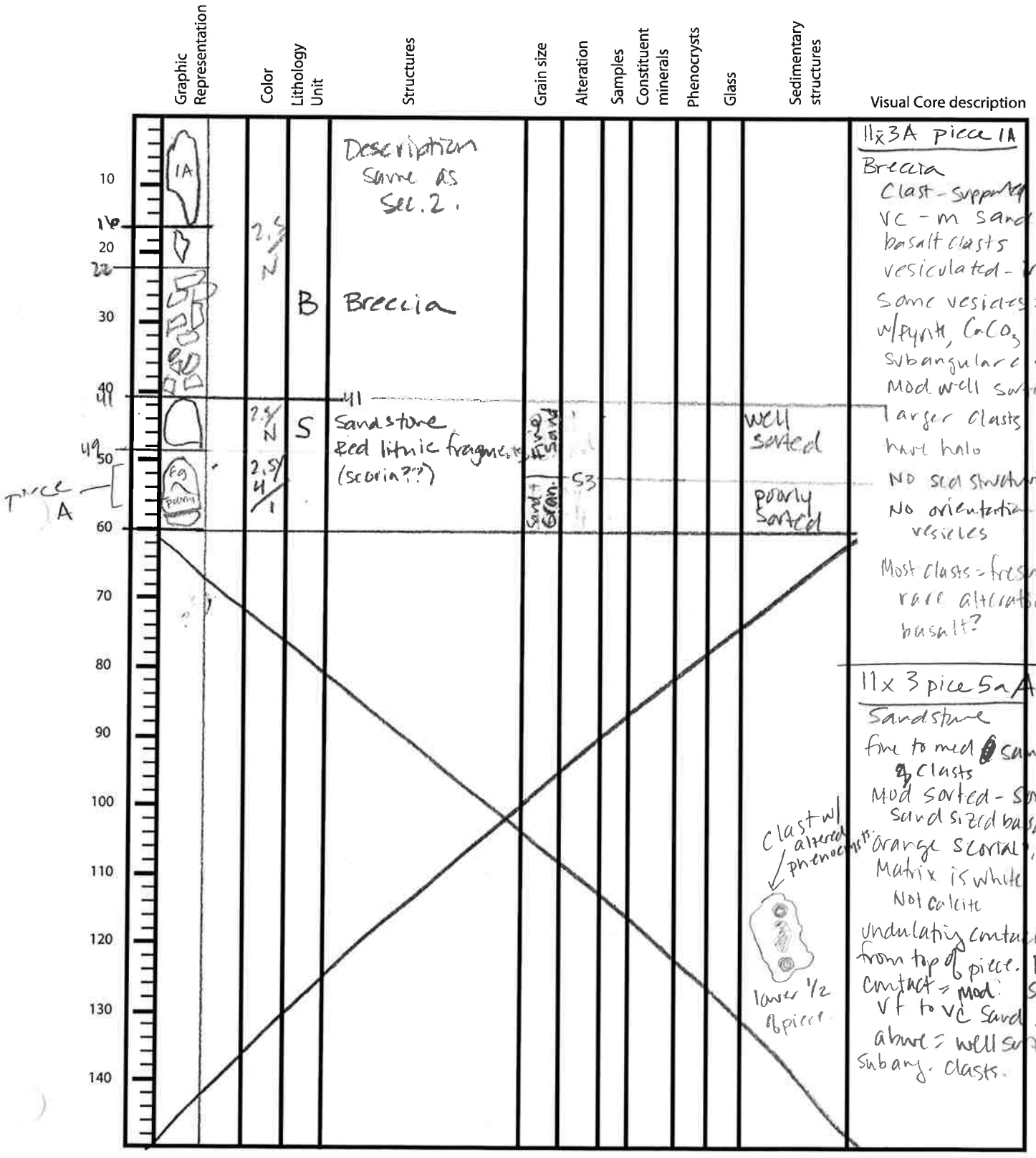
Graphic Representation	Color	Lithology Unit	Structures	Grain size	Alteration	Samples	Constituent minerals	Phenocrysts	Glass	Sedimentary structures	Visual Core description
8, 10, 14, 19.5, 20, 24.5, 30, 33, 40, 42, 50, 55.5, 60, 63, 70, 78, 80, 90, 99, 100, 106, 110, 114.5, 120, 123, 130, 133, 133.6, 140	2.5 Y 5/2	B	Pipe vesicles Vesiculated Basalt, } Maybe 1 Clast from breccia or may be primary flow? Breccia Desc. same as sec. 1		REL. FRESH	8-14 TS				 Clast w/ vesicles & alteration	Piece 11X 2A 14A description essentially the same as 11X 3A piece 1A

Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 Site | D Hole | 11X Core | 3 Section | _____ Top Depth

Major Lithology _____ _____



Visual Core description

11x3A piece 1A

Breccia

Clast-supported

VC - m sand sized basalt clasts

vesiculated - irregular

Some vesicles = filled w/ pyrite, $CaCO_3$

Subangular clasts

Mod. well sorted

larger clasts may have halo

NO sed structures visible

No orientation to vesicles

Most clasts = fresh

rare alteration of basalt?

11x3 piece 5a A

Sandstone

fine to med sand sized clasts

Mod sorted - Some coarse sand sized basalt clasts

orange scoria?) clasts

Matrix is white XL filling

Not calcite

undulating contact 3-5 cm from top of piece. Below contact = Mod. sorted

VF to VC sand clasts

above = well sorted.

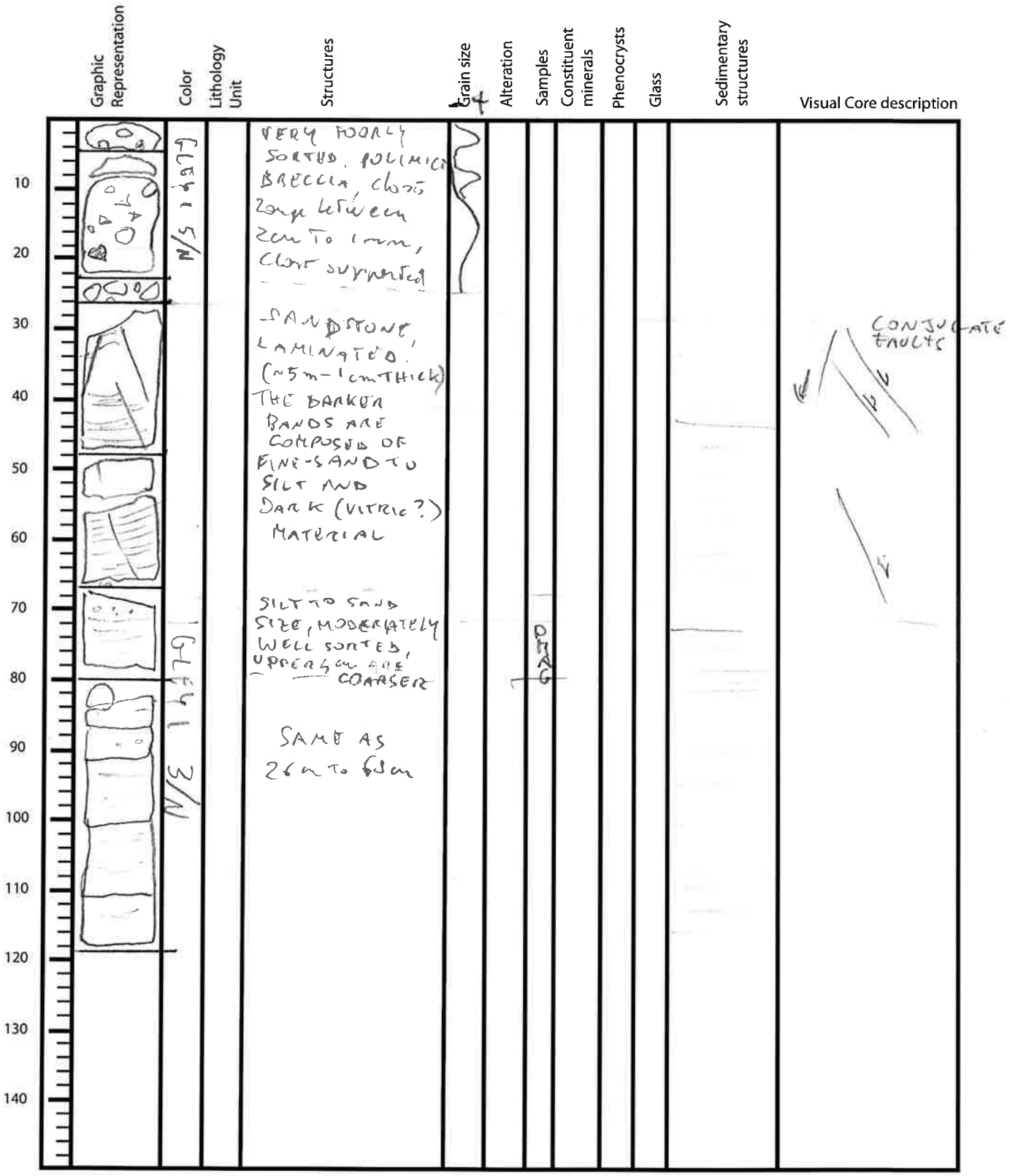
Subang. clasts.

Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 B 12X 1
Site Hole Core Section Top Depth

Major Lithology



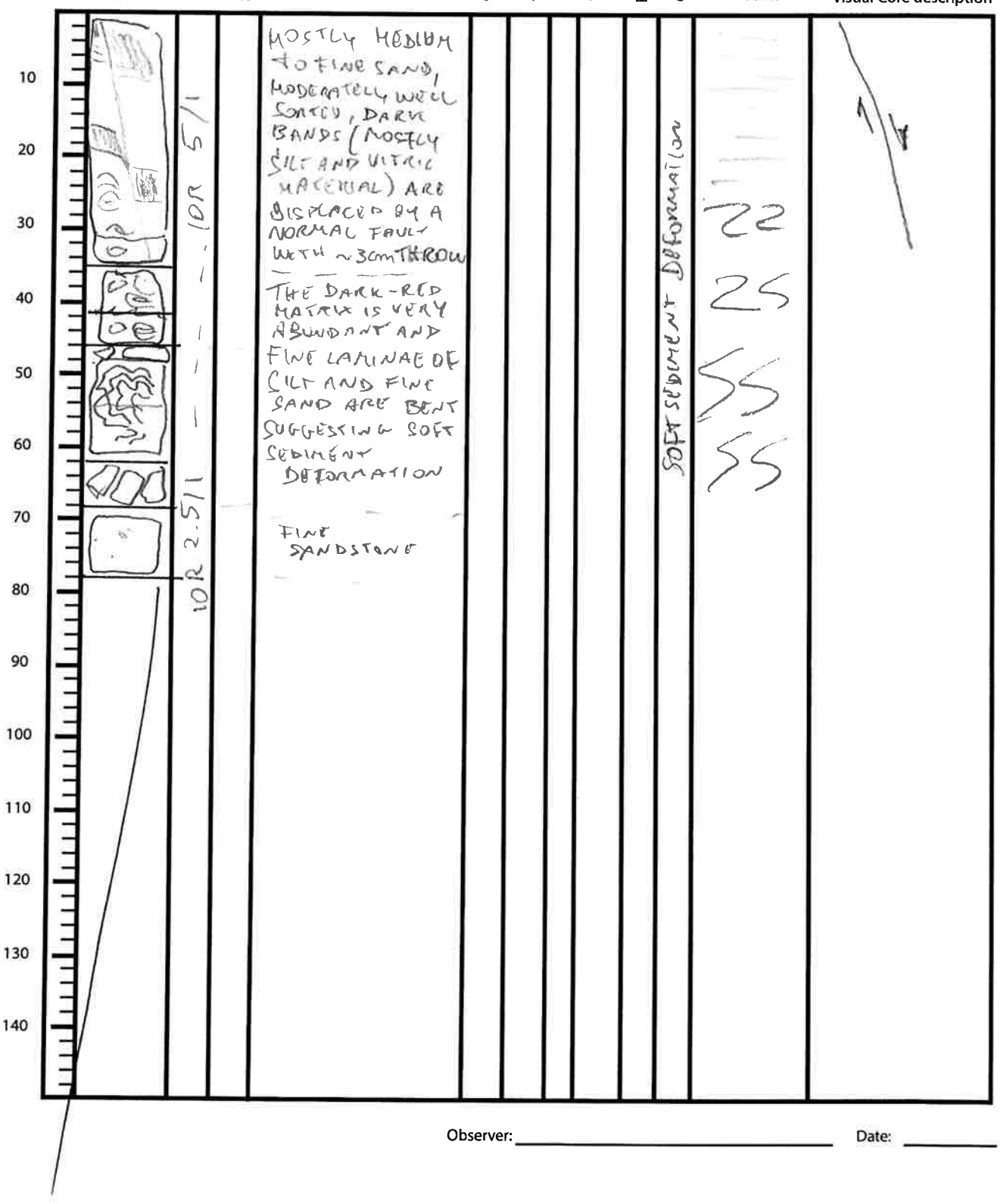
Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

Site	Hole	Core	Section	Top Depth
1352	D	12	2	

Major Lithology

SS - SLUMPING

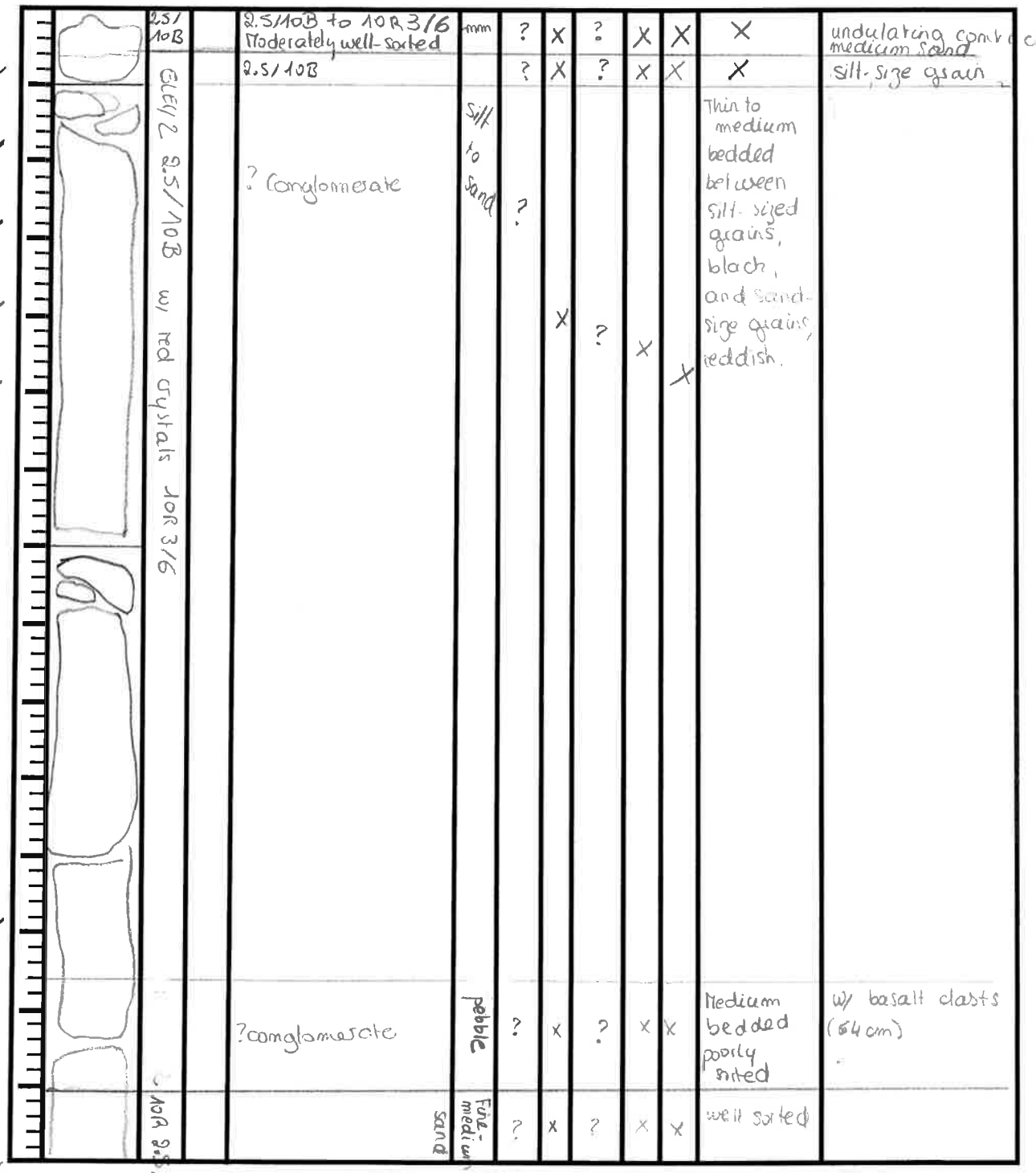


Observer: _____ Date: _____

Expedition 323
Bering Sea
(Hard rock VCD)

1342 Site | D Hole | 13X Core | 1 Section | Top Depth

Major Lithology



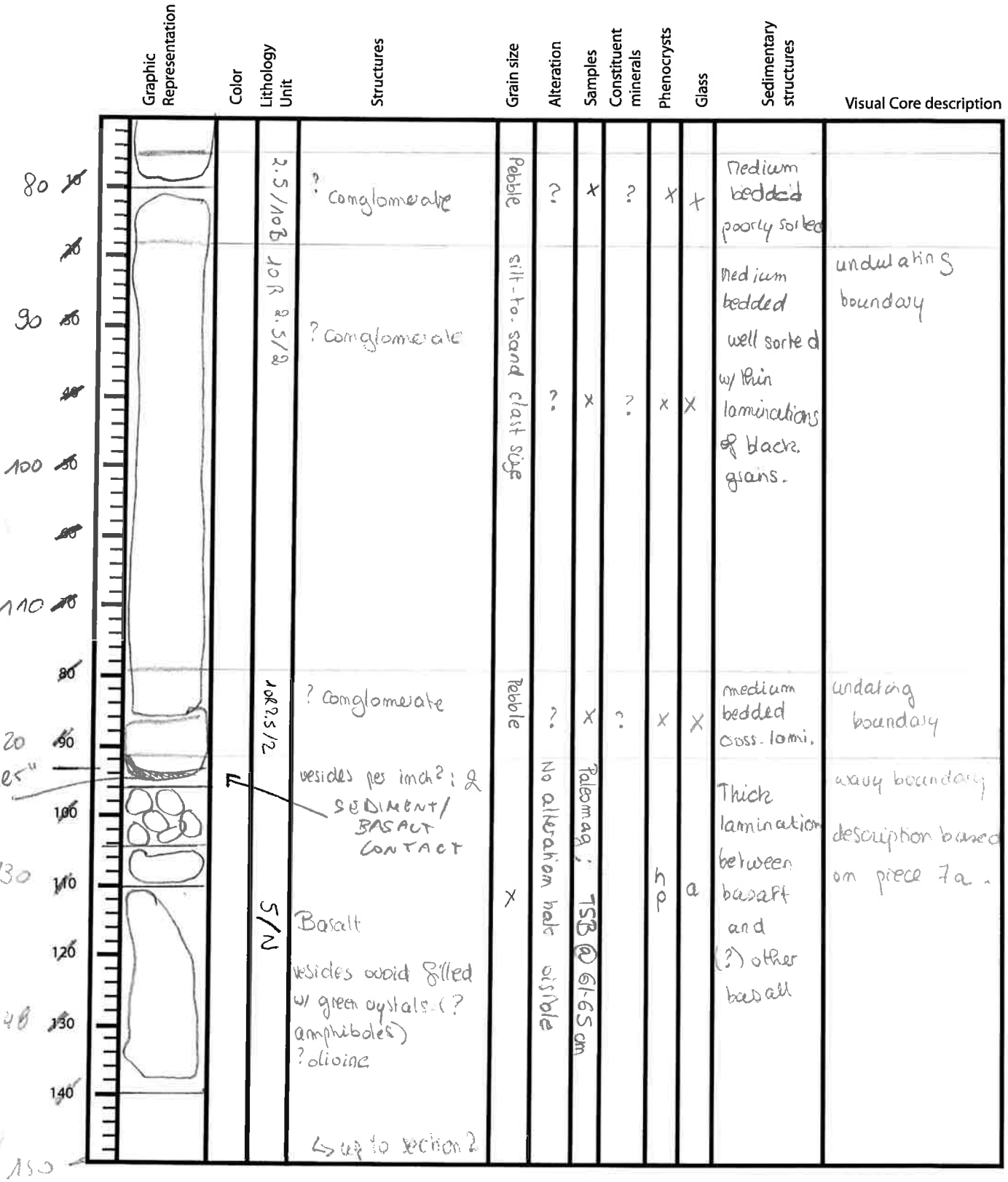
Graphic Representation	Color	Lithology Unit	Structures	Grain size	Alteration	Samples	Constituent minerals	Phenocrysts	Glass	Sedimentary structures	Visual Core description
	2.5/10B		2.5/10B to 10R3/6 Moderately well-sorted	mm	?	X	?	X	X	X	undulating contact medium sand
	GLEY1 2.5/10B w/ red crystals 10R3/6		2.5/10B		?	X	?	X	X	X	silt-size grain
			? Conglomerate	silt to sand	?	X	?	X	X	Thin to medium bedded between silt-sized grains, black, and sand-size grains, reddish.	
			?conglomerate	pebble	?	X	?	X	X	Medium bedded poorly sorted	w/ basalt clasts (64 cm)
	N3/A 2.5/2			fine-medium sand	?	X	?	X	X	well sorted	

Observer: G.B. Date:

Expedition 323
Bering Sea
(Hard rock VCD)

1349 Site | D Hole | 13X Core | 1 Section | BOTTOM Top Depth

Major Lithology

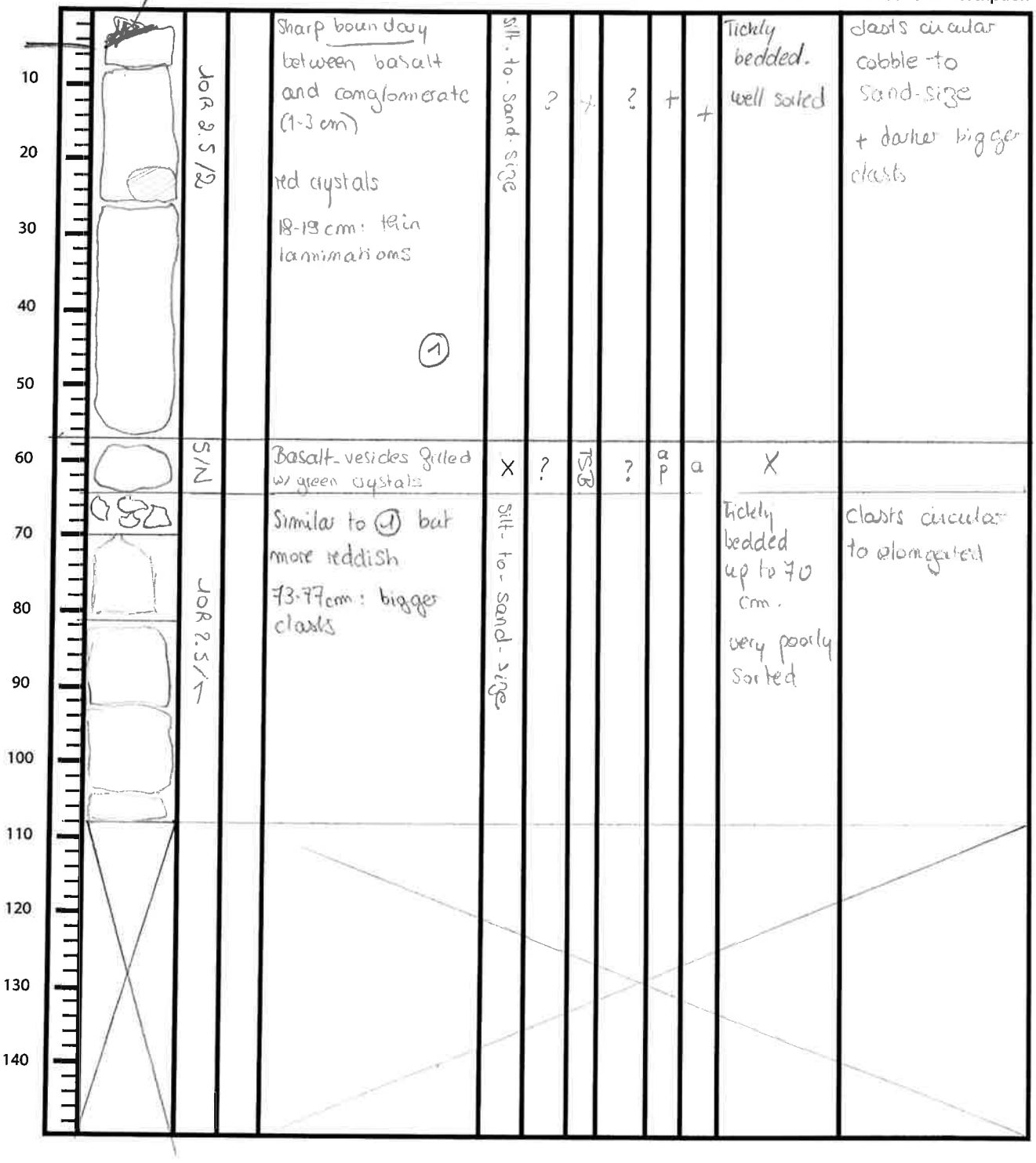


Observer: GB Date:

Expedition 323
Bering Sea
(Hard rock VCD)

1342 (Site) | D (Hole) | 13X- (Core) | 2 (Section) | _____ (Top Depth)

Major Lithology _____ _____



Observer: _____ Date: _____