



Bergvesenet

Postboks 3021, 7002 Trondheim

Rapportarkivet

Bergvesenet rapport nr BV 2880	Intern Journal nr	Internt arkiv nr	Rapport lokalisering Trondheim	Gradering Åpen
Kommer fra ..arkiv	Ekstern rapport nr DEVICO 143	Oversendt fra	Fortrolig pga	Fortrolig fra dato:
Tittel Foreløpig rapport. Avviksmåling Skiftesmyr og Godesjord.				
Forfatter Aursund, Elling Mørkhagen, Håvard		Dato 7 1991	Bedrift DEVICO	
Kommune Grong	Fylke Nord-Trøndelag	Bergdistrikt Trondheimske	1: 50 000 kartblad 18234	1: 250 000 kartblad Grong
Fagområde Boring	Dokument type Rapport	Forekomster Skiftesmyr Godesjord		
Råstofftype	Emneord			
Sammendrag Avviksmålingene omhandlet her ble foretatt 18. og 19. Juli 1991 Målingene er av følgende hull: Skiftesmyr: 1-9, 11-13. Godesjord: 1-10.				

RAPPORT

FORELØPIG RAPPORT

AVVIKSMÅLING

SKIFTESMYR & GODESJORD

18. - 19.07.91

PROSJEKT 143



DIRECTIONAL DRILLING

DEVIATION MEASUREMENT



Bergvesenet

Postboks 3021, 7002 Trondheim

Rapportarkivet

Bergvesenet rapport nr BV 2880	Intern Journal nr	Internt arkiv nr	Rapport lokalisering Trondheim	Gradering Åpen
Kommer fra arkiv	Ekstern rapport nr DEVICO 143	Oversendt fra	Fortrolig pga	Fortrolig fra dato:
Tittel Foreløpig rapport. Avviksmåling Skiftesmyr og Godesjord.				
Forfatter Aursund, Elling Mørkhagen, Håvard		Dato 7 1991	Bedrift DEVICO	
Kommune Grong	Fylke Nord-Trøndelag	Bergdistrikt Trondheimske	1: 50 000 kartblad 18234	1: 250 000 kartblad Grong
Fagområde Boring	Dokument type Rapport	Forekomster Skiftesmyr Godesjord		
Råstofftype	Emneord			
Sammendrag Avviksmålingene omhandlet her ble foretatt 18. og 19. Juli 1991 Målingene er av følgende hull: Skiftesmyr: 1-9, 11-13. Godesjord: 1-10.				

FORORD

Avviksmålingene omhandlet her ble foretatt
18. og 19. Juli 1991.

Målingene er av følgende hull :

Skiftesmyr : 1-9, 11-13.

Godesjord : 1-10.

DATAOVERSIKT

Målingene utført av	: Elling Aursund
Instrument	: Eastman Multiple Shot Survey Instrument 90° Angle Unit.
Måleintervall	: 10m
Innføringsmåte	: Wire og winsj.
Databehandling foretatt av	: Håvard Mørkhagen
Missvisning	: Ikke innmålt.
Diverse	: Ett uhell under måling har medført at det meste av G1 ikke har blitt målt. På bakgrunn av målinger i andre borhull i området er en sannsynlig hullbane konstruert. Ved hull G7 satte sonden seg ca 50m fra bunn, hullbanen er ekstrapolert i rett linje. Avmerket dyp ved siste stasjon.

MERK : DETTE ER EN FORLØPIG RAPPORT I PÅVENTE AV INNMÅLING.

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S1 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 1-91

DEPTH	DIR.	INCL.	X	Y	Z
.00	180.00	30.20	.00	.00	.00
4.00	180.00	30.20	-1.91	.62	-3.46
10.00	178.56	31.00	-4.81	1.60	-8.62
20.00	180.00	31.20	-9.70	3.25	-17.18
30.00	180.00	31.80	-14.67	4.86	-25.71
40.00	178.33	32.20	-19.69	6.57	-34.19
50.00	181.33	32.50	-24.77	8.23	-42.64
60.00	181.33	32.80	-29.94	9.79	-51.06
68.10	183.11	33.00	-34.17	11.01	-57.86
75.80	183.11	33.00	-38.21	12.11	-64.32

Direction in Gons , inclination in Degrees , zero down

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S1 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 1-91

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.02	-.04	-.02	.05	.01	1.15	.19
20.00	.13	-.14	-.10	.22	.01	.78	.08
30.00	.32	-.20	-.22	.44	.01	.67	.07
40.00	.55	-.35	-.38	.76	.02	.99	.10
50.00	.85	-.46	-.57	1.13	.02	1.64	.16
60.00	1.23	-.47	-.80	1.54	.03	.33	.03
68.10	1.59	-.42	-1.00	1.92	.03	.99	.12
75.80	1.95	-.32	-1.19	2.31	.03	.00	.00

DEV = Total offset from planned hole
DEV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S2 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.7.91 HOLE: 2-91

DEPTH	DIR.	INCL.	X	Y	Z
.00	186.67	30.00	.00	.00	.00
4.00	186.67	30.00	-1.96	.42	-3.46
10.00	186.67	30.20	-4.90	1.04	-8.66
20.00	186.67	31.30	-9.90	2.10	-17.25
30.00	187.56	32.50	-15.08	3.17	-25.74
40.00	187.00	35.30	-20.54	4.27	-34.04
50.00	186.67	38.30	-26.40	5.50	-42.04
60.00	184.67	41.20	-32.64	6.93	-49.73
70.00	183.67	43.00	-39.13	8.58	-57.15
80.00	183.33	45.00	-45.85	10.36	-64.34
90.00	182.22	45.50	-52.69	12.26	-71.38
100.00	182.78	46.00	-59.58	14.21	-78.36
110.00	183.67	46.80	-66.58	16.09	-85.26
120.00	183.33	47.20	-73.65	17.97	-92.08
140.00	183.33	47.20	-87.82	21.77	-105.67

Direction in Gons , inclination in Degrees , zero down

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
 OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
 PROJECT: 143S2 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
 CLIENT: Norsulfid DATE: 19.7.91 HOLE: 2-91

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.01	-.00	-.01	.01	.00	.22	.04
20.00	.12	-.03	-.07	.14	.01	1.22	.12
30.00	.40	-.05	-.24	.47	.02	1.41	.14
40.00	.98	-.12	-.60	1.16	.03	3.13	.31
50.00	1.95	-.31	-1.26	2.34	.05	3.34	.33
60.00	3.29	-.70	-2.23	4.04	.07	3.47	.35
70.00	4.90	-1.31	-3.47	6.14	.09	2.11	.21
80.00	6.72	-2.05	-4.94	8.59	.11	2.23	.22
90.00	8.67	-2.91	-6.56	11.26	.13	.96	.10
100.00	10.68	-3.81	-8.24	14.02	.14	.69	.07
110.00	12.78	-4.66	-10.00	16.88	.15	1.10	.11
120.00	14.96	-5.50	-11.84	19.85	.17	.51	.05
140.00	19.35	-7.22	-15.58	25.87	.18	.00	.00

DEV = Total offset from planned hole
 DEV/L = Total deviation/depth
 ANG = Angel between two points in Degrees
 ANG/L = ANG/depth

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S3 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 3-91

DEPTH	DIR.	INCL.	X	Y	Z
.00	194.44	6.50	.00	.00	.00
4.00	194.44	6.50	-.45	.04	-3.97
10.00	194.44	7.00	-1.15	.10	-9.93
20.00	194.44	7.20	-2.38	.21	-19.86
30.00	194.44	8.30	-3.73	.33	-29.76
40.00	197.78	9.30	-5.25	.42	-39.65
50.00	196.67	11.00	-7.02	.50	-49.49
60.00	195.56	13.00	-9.09	.62	-59.27
70.00	195.00	14.20	-11.44	.80	-68.99
80.00	194.44	14.80	-13.93	1.01	-78.67
90.00	195.00	15.30	-16.52	1.22	-88.33
100.00	192.22	15.80	-19.18	1.49	-97.96
110.00	192.78	16.30	-21.93	1.82	-107.57
120.00	193.89	17.00	-24.78	2.11	-117.15
130.00	194.22	17.80	-27.76	2.39	-126.70
140.00	193.33	18.50	-30.86	2.70	-136.20
150.00	192.22	19.00	-34.05	3.06	-145.67
160.00	192.22	19.50	-37.32	3.46	-155.11
170.00	194.22	20.00	-40.68	3.82	-164.52
180.00	194.44	20.80	-44.15	4.13	-173.89
190.00	194.44	21.30	-47.73	4.45	-183.23
200.00	192.78	21.70	-51.38	4.81	-192.53
210.60	192.78	21.70	-55.27	5.26	-202.38

Direction in Gons , inclination in Degrees , zero down

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 4-91

DEPTH	DIR.	INCL.	X	Y	Z
.00	188.89	28.00	.00	.00	.00
4.00	188.89	28.00	-1.85	.33	-3.53
10.00	188.89	28.30	-4.64	.82	-8.82
20.00	189.11	29.00	-9.36	1.64	-17.60
30.00	188.00	29.80	-14.19	2.52	-26.31
50.00	188.33	30.20	-24.02	4.37	-43.63
60.00	187.78	32.00	-29.09	5.33	-52.19
70.00	188.33	34.00	-34.44	6.35	-60.58
80.00	190.00	35.00	-40.02	7.31	-68.82
88.00	188.89	35.70	-44.59	8.07	-75.35
94.40	188.89	35.70	-48.27	8.72	-80.54

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVICE Version - 2.00 1991-06-11
 OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
 PROJECT: 143S4 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 4-91

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.01	-.00	-.01	.02	.00	.33	.06
20.00	.11	-.01	-.06	.13	.01	.78	.08
30.00	.32	-.07	-.18	.37	.01	1.04	.10
50.00	.90	-.29	-.52	1.08	.02	.47	.02
60.00	1.35	-.44	-.78	1.62	.03	2.02	.20
70.00	2.08	-.64	-1.23	2.50	.04	2.24	.22
80.00	3.04	-.78	-1.82	3.62	.05	1.46	.15
88.00	3.90	-.90	-2.35	4.65	.05	1.01	.13
94.40	4.62	-1.02	-2.81	5.50	.06	.00	.00

DEV = Total offset from planned hole

$$\text{DEV/L} = \text{Total deviation/depth}$$

ANG = Angel between two points in Degrees

$$\text{ANG/L} = \text{ANG/depth}$$

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S5 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 5-91

DEPTH	DIR.	INCL.	X	Y	Z
.00	187.78	29.50	.00	.00	.00
4.00	187.78	29.50	-1.93	.38	-3.48
10.00	188.33	30.00	-4.86	.93	-8.69
20.00	187.22	30.70	-9.82	1.90	-17.32
30.00	187.78	31.50	-14.88	2.90	-25.88
40.00	188.56	32.20	-20.07	3.88	-34.38
50.00	187.78	32.20	-25.31	4.86	-42.84
60.00	187.00	33.40	-30.62	5.93	-51.24
70.00	188.33	34.20	-36.08	7.00	-59.55
80.00	187.78	34.70	-41.63	8.05	-67.80
90.00	187.78	35.70	-47.29	9.15	-75.97
100.00	188.33	37.40	-53.14	10.26	-84.01
110.00	187.78	39.30	-59.24	11.42	-91.85
120.00	188.89	40.20	-65.53	12.59	-99.54
130.00	188.89	41.50	-71.97	13.72	-107.10
140.00	187.78	43.00	-78.58	14.95	-114.50
150.00	187.22	43.50	-85.30	16.29	-121.79
160.00	187.78	43.80	-92.07	17.63	-129.02
170.00	188.33	44.50	-98.91	18.93	-136.20
180.00	188.33	45.00	-105.83	20.21	-143.30
192.10	188.33	45.00	-114.25	21.77	-151.85

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S5 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 5-91

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.02	.01	-.01	.03	.00	.62	.10
20.00	.15	-.02	-.09	.17	.01	.96	.10
30.00	.38	-.08	-.23	.45	.02	.93	.09
40.00	.74	-.12	-.44	.86	.02	.88	.09
50.00	1.14	-.17	-.68	1.34	.03	.42	.04
60.00	1.62	-.29	-.98	1.91	.03	1.40	.14
70.00	2.24	-.42	-1.37	2.66	.04	1.16	.12
80.00	2.96	-.54	-1.83	3.52	.04	.64	.06
90.00	3.79	-.70	-2.36	4.52	.05	1.11	.11
100.00	4.81	-.87	-3.03	5.75	.06	1.92	.19
110.00	6.07	-1.09	-3.89	7.29	.07	2.14	.21
120.00	7.52	-1.31	-4.91	9.08	.08	1.23	.12
130.00	9.13	-1.51	-6.05	11.05	.09	1.44	.14
140.00	10.90	-1.80	-7.35	13.27	.09	1.83	.18
150.00	12.79	-2.19	-8.77	15.66	.10	.68	.07
160.00	14.73	-2.60	-10.24	18.12	.11	.51	.05
170.00	16.74	-2.96	-11.76	20.67	.12	.87	.09
180.00	18.82	-3.30	-13.37	23.32	.13	.56	.06
192.10	21.39	-3.73	-15.34	26.58	.14	.00	.00

DEV = Total offset from planned hole
DEV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S6 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 6-91

DEPTH	DIR.	INCL.	X	Y	Z
.00	176.67	7.00	.00	.00	.00
4.00	176.67	7.00	-.46	.17	-3.97
10.00	176.67	7.30	-1.15	.44	-9.92
20.00	176.67	7.80	-2.38	.91	-19.84
30.00	175.78	8.30	-3.68	1.42	-29.74
40.00	177.78	8.50	-5.05	1.95	-39.63
50.00	178.89	9.00	-6.48	2.45	-49.51
60.00	177.22	9.50	-7.99	3.00	-59.38
70.00	177.22	10.00	-9.58	3.59	-69.24
80.00	176.11	10.50	-11.24	4.23	-79.08
90.00	176.67	11.00	-12.98	4.90	-88.90
100.00	176.67	11.80	-14.82	5.61	-98.71
110.00	177.78	12.80	-16.82	6.36	-108.48
120.00	177.22	14.00	-18.99	7.16	-118.21
130.00	175.00	14.50	-21.28	8.06	-127.90
140.00	175.00	15.00	-23.64	9.04	-137.57
150.00	172.78	15.50	-26.05	10.09	-147.22
160.00	173.33	16.00	-28.52	11.20	-156.84
170.00	175.00	16.30	-31.08	12.30	-166.45
190.00	174.78	17.00	-36.37	14.50	-185.61
210.00	174.44	18.00	-41.91	16.84	-204.68
230.00	173.33	19.50	-47.80	19.40	-223.62
240.00	172.78	20.30	-50.91	20.80	-233.02
250.00	172.44	21.00	-54.11	22.27	-242.38
260.00	172.78	22.30	-57.47	23.81	-251.67
278.10	172.78	22.30	-63.72	26.66	-268.42

Direction in Gons , inclination in Degrees , zero down

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S6 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 6-91

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.01	-.01	-.00	.02	.00	.33	.06
20.00	.10	-.04	-.01	.11	.01	.56	.06
30.00	.27	-.11	-.04	.30	.01	.57	.06
40.00	.50	-.20	-.07	.54	.01	.37	.04
50.00	.79	-.27	-.11	.84	.02	.58	.06
60.00	1.17	-.38	-.17	1.24	.02	.62	.06
70.00	1.62	-.53	-.24	1.72	.02	.56	.06
80.00	2.14	-.73	-.32	2.28	.03	.59	.06
90.00	2.74	-.97	-.42	2.94	.03	.57	.06
100.00	3.45	-1.24	-.55	3.71	.04	.89	.09
110.00	4.31	-1.55	-.70	4.63	.04	1.14	.11
120.00	5.34	-1.92	-.90	5.75	.05	1.34	.13
130.00	6.49	-2.38	-1.13	7.01	.05	.78	.08
140.00	7.71	-2.92	-1.39	8.36	.06	.56	.06
150.00	8.98	-3.54	-1.67	9.79	.07	.81	.08
160.00	10.32	-4.21	-1.97	11.32	.07	.58	.06
170.00	11.74	-4.87	-2.29	12.91	.08	.57	.06
190.00	14.75	-6.20	-2.98	16.28	.09	.78	.04
210.00	18.02	-7.67	-3.75	19.94	.09	1.12	.06
230.00	21.64	-9.36	-4.67	24.03	.10	1.70	.09
240.00	23.60	-10.32	-5.19	26.28	.11	.91	.09
250.00	25.67	-11.35	-5.76	28.65	.11	.79	.08
260.00	27.88	-12.46	-6.39	31.20	.12	1.45	.14
278.10	32.07	-14.51	-7.61	36.02	.13	.00	.00

DEV = Total offset from planned hole
DEV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S7 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 7

DEPTH	DIR.	INCL.	X	Y	Z
.00	183.33	30.00	.00	.00	.00
4.00	183.33	30.00	-1.93	.52	-3.46
10.00	183.33	30.00	-4.83	1.29	-8.66
20.00	183.33	30.20	-9.67	2.59	-17.31
30.00	183.33	30.50	-14.55	3.90	-25.94
40.00	183.78	31.20	-19.51	5.21	-34.53
50.00	183.33	31.50	-24.54	6.54	-43.07
60.00	183.67	31.70	-29.61	7.88	-51.58
70.00	184.44	32.20	-34.73	9.19	-60.07
80.00	184.67	32.60	-39.93	10.48	-68.51
90.00	186.67	33.00	-45.21	11.69	-76.92
100.00	188.22	33.50	-50.59	12.76	-85.28
110.00	188.33	34.80	-56.11	13.79	-93.56
120.00	188.33	34.80	-61.72	14.83	-101.77
130.00	189.22	34.80	-67.34	15.83	-109.98
140.00	187.78	35.30	-72.99	16.86	-118.17
150.00	188.89	36.00	-78.72	17.93	-126.29
157.00	186.67	36.20	-82.77	18.71	-131.95
166.00	186.67	36.20	-87.97	19.82	-139.21

Direction in Gons , inclination in Degrees , zero down

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S7 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 7

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.00	.00	.00	.00	.00	.00	.00
20.00	.01	-.00	-.01	.02	.00	.22	.02
30.00	.07	-.02	-.04	.08	.00	.33	.03
40.00	.19	-.03	-.11	.23	.01	.81	.08
50.00	.39	-.07	-.23	.46	.01	.41	.04
60.00	.63	-.12	-.38	.74	.01	.28	.03
70.00	.93	-.13	-.55	1.09	.02	.69	.07
80.00	1.30	-.13	-.77	1.51	.02	.46	.05
90.00	1.75	-.04	-1.02	2.03	.02	1.17	.12
100.00	2.30	.18	-1.32	2.66	.03	1.02	.10
110.00	2.98	.45	-1.71	3.47	.03	1.45	.14
120.00	3.77	.70	-2.16	4.40	.04	.00	.00
130.00	4.56	.99	-2.60	5.34	.04	.51	.05
140.00	5.38	1.26	-3.08	6.32	.05	1.00	.10
150.00	6.28	1.49	-3.61	7.39	.05	1.01	.10
157.00	6.94	1.61	-4.02	8.18	.05	1.33	.19
166.00	7.80	1.67	-4.55	9.18	.06	.00	.00

DEV = Total offset from planned hole
DEV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S8 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 8-91

DEPTH	DIR.	INCL.	X	Y	Z
.00	187.22	29.30	.00	.00	.00
4.00	187.22	29.30	-1.22	.39	-3.49
10.00	187.22	29.80	-4.82	.98	-8.71
20.00	187.22	30.50	-9.74	1.98	-17.35
30.00	186.67	31.40	-14.77	3.03	-25.93
40.00	186.67	32.00	-19.91	4.12	-34.44
50.00	186.11	32.70	-25.14	5.26	-42.89
60.00	185.89	33.70	-30.49	6.45	-51.25
70.00	187.22	34.80	-35.99	7.63	-59.52
80.00	187.22	35.80	-41.65	8.78	-67.68
90.00	188.89	36.30	-47.43	9.88	-75.77
100.00	188.89	37.50	-53.35	10.92	-83.76
110.00	188.89	38.20	-59.39	11.99	-91.66
120.00	188.89	39.50	-65.57	13.08	-99.45
130.00	189.44	40.30	-71.89	14.16	-107.12
140.00	188.89	41.00	-78.31	15.27	-114.71
150.00	190.00	41.80	-84.83	16.36	-122.21
160.00	189.67	42.20	-91.44	17.42	-129.64
170.00	189.22	42.70	-98.09	18.54	-137.02
180.00	188.89	43.20	-104.81	19.70	-144.34
186.00	188.11	44.30	-108.89	20.45	-148.67
196.80	188.11	44.30	-115.30	21.85	-156.40

Direction in Gons , inclination in Degrees , zero down

D E V **BOREHOLE SURVEY** **DEVICO** **Version - 2.00 1991-06-11**
OPERATOR: EA **DATE: 91-07-30** **LOCATION: Skiftesmyr**
PROJECT: 143S8 **FILELOCATION: A:**

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid **DATE: 19.07.91** **HOLE: 8-91**

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.02	-.00	-.01	.03	.00	.56	.09
20.00	.15	-.03	-.09	.17	.01	.78	.08
30.00	.39	-.10	-.23	.46	.02	1.04	.10
40.00	.73	-.22	-.44	.88	.02	.67	.07
50.00	1.17	-.38	-.72	1.42	.03	.83	.08
60.00	1.71	-.60	-1.07	2.11	.04	1.12	.11
70.00	2.42	-.80	-1.52	2.97	.04	1.43	.14
80.00	3.29	-.98	-2.08	4.01	.05	1.11	.11
90.00	4.27	-1.10	-2.72	5.18	.06	1.13	.11
100.00	5.39	-1.16	-3.44	6.50	.07	1.33	.13
110.00	6.64	-1.25	-4.27	7.99	.07	.78	.08
120.00	8.02	-1.37	-5.20	9.66	.08	1.44	.14
130.00	9.55	-1.48	-6.25	11.51	.09	.96	.10
140.00	11.17	-1.61	-7.38	13.49	.10	.86	.09
150.00	12.90	-1.72	-8.60	15.60	.10	1.15	.12
160.00	14.71	-1.81	-9.89	17.82	.11	.50	.05
170.00	16.57	-1.95	-11.23	20.11	.12	.63	.06
180.00	18.49	-2.14	-12.64	22.49	.12	.60	.06
186.00	19.69	-2.30	-13.53	24.00	.13	1.34	.22
196.80	21.92	-2.64	-15.22	26.82	.14	.00	.00

DEV = Total offset from planned hole
DEV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S9 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 9-91

DEPTH	DIR.	INCL.	X	Y	Z
.00	190.56	7.30	.00	.00	.00
4.00	190.56	7.30	-.50	.08	-3.97
10.00	190.56	7.80	-1.28	.19	-9.92
20.00	190.78	8.00	-2.64	.39	-19.82
30.00	191.11	9.50	-4.15	.61	-29.70
40.00	190.56	10.00	-5.82	.85	-39.56
50.00	191.11	10.30	-7.57	1.10	-49.40
60.00	192.22	10.70	-9.37	1.34	-59.24
70.00	191.11	10.80	-11.22	1.58	-69.06
80.00	191.11	11.30	-13.12	1.85	-78.87
90.00	191.11	11.70	-15.10	2.13	-88.67
100.00	190.78	12.00	-17.13	2.42	-98.46
110.00	191.67	12.30	-19.21	2.71	-108.24
120.00	191.11	12.30	-21.32	3.00	-118.01
130.00	190.00	12.70	-23.46	3.32	-127.77
140.00	191.11	12.80	-25.65	3.64	-137.52
150.00	191.67	13.00	-27.86	3.94	-147.27
160.00	190.56	13.30	-30.11	4.26	-157.01
170.00	190.00	13.30	-32.39	4.61	-166.74
180.00	190.00	14.00	-34.72	4.98	-176.46
190.00	190.00	14.70	-37.16	5.37	-186.15
200.00	190.00	14.80	-39.68	5.77	-195.82
210.00	188.89	15.20	-42.23	6.19	-205.48
220.00	188.89	15.30	-44.82	6.65	-215.12
230.00	188.89	16.00	-47.48	7.12	-224.75
240.00	188.33	16.40	-50.22	7.61	-234.36
250.00	188.89	17.20	-53.07	8.13	-243.93
260.00	188.89	17.50	-56.01	8.65	-253.47
270.00	188.33	17.80	-58.99	9.19	-263.00
280.00	188.56	18.20	-62.03	9.74	-272.51
286.00	188.00	18.70	-63.90	10.09	-278.21
299.80	188.00	18.70	-68.24	10.92	-291.28

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
 OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
 PROJECT: 143S9 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
 CLIENT: Norsulfid DATE: 19.07.91 HOLE: 9-91

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.03	-.00	-.00	.03	.00	.56	.09
20.00	.13	-.02	-.02	.13	.01	.22	.02
30.00	.38	-.04	-.05	.38	.01	1.67	.17
40.00	.80	-.10	-.12	.81	.02	.56	.06
50.00	1.28	-.16	-.19	1.31	.03	.35	.03
60.00	1.83	-.21	-.28	1.87	.03	.49	.05
70.00	2.43	-.27	-.37	2.47	.04	.23	.02
80.00	3.07	-.35	-.48	3.12	.04	.56	.06
90.00	3.79	-.44	-.60	3.86	.04	.44	.04
100.00	4.56	-.54	-.73	4.65	.05	.34	.03
110.00	5.39	-.64	-.87	5.50	.05	.38	.04
120.00	6.24	-.74	-1.02	6.37	.05	.12	.01
130.00	7.13	-.88	-1.18	7.28	.06	.51	.05
140.00	8.05	-1.01	-1.34	8.23	.06	.27	.03
150.00	9.01	-1.13	-1.51	9.20	.06	.26	.03
160.00	10.01	-1.26	-1.69	10.23	.06	.42	.04
170.00	11.02	-1.42	-1.88	11.27	.07	.13	.01
180.00	12.10	-1.60	-2.08	12.38	.07	.78	.08
190.00	13.29	-1.80	-2.31	13.61	.07	.78	.08
200.00	14.55	-2.01	-2.56	14.91	.07	.11	.01
210.00	15.84	-2.25	-2.82	16.25	.08	.53	.05
220.00	17.18	-2.52	-3.09	17.63	.08	.11	.01
230.00	18.57	-2.80	-3.38	19.09	.08	.78	.08
240.00	20.06	-3.11	-3.70	20.64	.09	.47	.05
250.00	21.65	-3.44	-4.04	22.29	.09	.90	.09
260.00	23.33	-3.77	-4.42	24.04	.09	.33	.03
270.00	25.06	-4.12	-4.81	25.85	.10	.37	.04
280.00	26.84	-4.49	-5.22	27.71	.10	.45	.04
286.00	27.95	-4.72	-5.48	28.87	.10	.58	.10
299.80	30.57	-5.29	-6.09	31.61	.11	.00	.00

DEV = Total offset from planned hole
 DEV/L = Total deviation/depth
 ANG = Angel between two points in Degrees
 ANG/L = ANG/depth

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S11 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 11

DEPTH	DIR.	INCL.	X	Y	Z
.00	186.67	28.80	.00	.00	.00
4.00	186.67	28.80	-1.88	.40	-3.51
10.00	187.78	30.00	-4.77	.99	-8.73
20.00	186.67	31.30	-9.77	2.00	-17.34
30.00	187.22	31.30	-14.85	3.06	-25.88
40.00	187.22	32.00	-19.99	4.11	-34.39
50.00	184.44	32.30	-25.18	5.28	-42.86
60.00	183.89	32.30	-30.36	6.60	-51.31
70.00	185.56	32.50	-35.57	7.87	-59.76
80.00	185.22	34.20	-40.92	9.12	-68.11
88.10	185.00	35.00	-45.39	10.19	-74.78
95.00	185.00	35.00	-49.24	11.11	-80.43

Direction in Gons , inclination in Degrees , zero down

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S11 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 11

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.06	.01	-.03	.07	.01	1.44	.24
20.00	.34	-.00	-.19	.39	.02	1.55	.16
30.00	.72	-.06	-.41	.83	.03	.29	.03
40.00	1.15	-.10	-.66	1.33	.03	.78	.08
50.00	1.62	-.28	-.96	1.90	.04	1.52	.15
60.00	2.09	-.59	-1.27	2.51	.04	.29	.03
70.00	2.58	-.86	-1.59	3.15	.04	.92	.09
80.00	3.22	-1.11	-2.00	3.95	.05	1.90	.19
88.10	3.88	-1.37	-2.43	4.78	.05	.90	.11
95.00	4.48	-1.60	-2.82	5.53	.06	.00	.00

DEV = Total offset from planned hole
DEV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/ depth

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S12 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 12

DEPTH	DIR.	INCL.	X	Y	Z
.00	191.67	28.50	.00	.00	.00
4.00	191.67	28.50	-1.89	.25	-3.52
10.00	191.67	31.20	-4.85	.64	-8.72
20.00	191.67	30.40	-9.93	1.31	-17.31
30.00	190.56	31.50	-15.02	2.02	-25.88
40.00	191.67	32.50	-20.27	2.76	-34.36
50.00	193.89	32.50	-25.61	3.37	-42.80
60.00	189.22	34.50	-31.07	4.10	-51.14
70.00	190.56	35.00	-36.70	5.00	-59.36
79.40	190.00	34.70	-42.01	5.82	-67.07
87.10	190.00	34.70	-46.34	6.51	-73.40

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S12 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 12

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.12	-.02	-.07	.14	.01	3.00	.50
20.00	.47	-.06	-.27	.54	.03	.89	.09
30.00	.83	-.16	-.48	.97	.03	1.35	.13
40.00	1.35	-.27	-.79	1.58	.04	1.26	.13
50.00	1.95	-.25	-1.14	2.28	.05	1.19	.12
60.00	2.69	-.37	-1.59	3.15	.05	3.40	.34
70.00	3.59	-.65	-2.16	4.24	.06	.94	.09
79.40	4.45	-.88	-2.71	5.28	.07	.46	.05
87.10	5.14	-1.08	-3.15	6.12	.07	.00	.00

DEV = Total offset from planned hole
DEV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S13 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 13-91

DEPTH	DIR.	INCL.	X	Y	Z
.00	188.89	27.50	.00	.00	.00
4.00	188.89	27.50	-1.82	.32	-3.55
10.00	188.89	27.80	-4.56	.80	-8.86
20.00	188.89	28.50	-9.21	1.62	-17.68
30.00	189.44	29.70	-14.00	2.45	-26.42
40.00	188.00	30.20	-18.91	3.33	-35.08
50.00	187.78	31.00	-23.91	4.29	-43.69
60.00	187.56	32.20	-29.05	5.30	-52.21
70.00	188.89	32.80	-34.34	6.29	-60.64
80.00	188.67	33.20	-39.70	7.24	-69.03
90.00	188.89	33.50	-45.11	8.20	-77.38
100.00	188.89	34.00	-50.58	9.17	-85.70
110.00	186.67	35.30	-56.16	10.26	-93.92
120.00	186.11	35.30	-61.81	11.48	-102.08
130.00	188.89	36.00	-67.52	12.62	-110.21
140.00	190.56	36.50	-73.36	13.57	-118.27
151.90	190.56	36.50	-80.36	14.61	-127.84

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Skiftesmyr
PROJECT: 143S13 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 13-91

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.01	-.00	-.01	.02	.00	.33	.06
20.00	.11	-.02	-.06	.13	.01	.78	.08
30.00	.36	-.04	-.19	.41	.01	1.36	.14
40.00	.72	-.12	-.40	.84	.02	.91	.09
50.00	1.18	-.28	-.66	1.38	.03	.90	.09
60.00	1.77	-.49	-1.01	2.10	.03	1.34	.13
70.00	2.50	-.67	-1.45	2.97	.04	.98	.10
80.00	3.32	-.83	-1.93	3.93	.05	.46	.05
90.00	4.18	-.99	-2.45	4.95	.05	.35	.04
100.00	5.11	-1.15	-3.01	6.04	.06	.56	.06
110.00	6.14	-1.44	-3.65	7.29	.07	1.92	.19
120.00	7.24	-1.86	-4.36	8.65	.07	.32	.03
130.00	8.41	-2.19	-5.10	10.08	.08	1.80	.18
140.00	9.70	-2.34	-5.91	11.59	.08	1.13	.11
151.90	11.29	-2.43	-6.90	13.45	.09	.00	.00

DEV = Total offset from planned hole
DEV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G1 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 1

DEPTH	DIR.	INCL.	X	Y	Z
0.00	185.56	30.50	0.00	0.00	0.00
4.00	185.56	30.50	-1.98	0.46	-3.45
10.00	185.56	32.00	-5.01	1.16	-8.58
20.00	186.33	33.50	-10.29	2.34	-16.99
30.00	185.00	34.00	-15.70	3.58	-25.30
40.00	186.67	35.00	-21.23	4.83	-33.54
50.00	186.11	35.00	-26.83	6.05	-41.73
54.00	187.22	35.50	-29.09	6.53	-45.00
58.70	187.22	35.50	-31.77	7.07	-48.83

Direction in Gons , inclination in Degrees , zero down

D E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G1 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 1

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.07	-.02	-.04	.08	.01	1.67	.28
20.00	.40	-.06	-.25	.47	.02	1.72	.17
30.00	.87	-.16	-.55	1.04	.03	.92	.09
40.00	1.45	-.26	-.92	1.74	.04	1.46	.15
50.00	2.11	-.34	-1.35	2.52	.05	.32	.03
54.00	2.39	-.36	-1.53	2.86	.05	.85	.21
58.70	2.74	-.37	-1.75	3.27	.06	.00	.00

DEV = Total offset from planned hole
DEV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G2 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 2

DEPTH	DIR.	INCL.	X	Y	Z
.00	188.89	6.00	.00	.00	.00
4.00	188.89	6.20	-.42	.07	-3.98
10.00	188.89	6.70	-1.08	.19	-9.94
20.00	188.89	7.50	-2.30	.41	-19.86
30.00	188.89	8.70	-3.69	.65	-29.76
40.00	188.89	10.00	-5.29	.93	-39.63
50.00	188.89	11.30	-7.11	1.25	-49.46
60.00	188.89	12.00	-9.10	1.60	-59.25
70.00	188.89	12.50	-11.19	1.97	-69.02
80.00	188.89	13.00	-13.36	2.36	-78.78
86.40	188.89	13.00	-14.78	2.61	-85.01

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
 OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
 PROJECT: 143G2 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
 CLIENT: Norsulfid DATE: 19.07.91 HOLE: 2

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.01	-.00	-.00	.01	.00	.22	.06
10.00	.05	-.01	-.01	.05	.01	.56	.09
20.00	.24	-.04	-.03	.25	.01	.89	.09
30.00	.60	-.11	-.07	.61	.02	1.33	.13
40.00	1.17	-.21	-.15	1.20	.03	1.44	.14
50.00	1.96	-.35	-.27	2.01	.04	1.44	.14
60.00	2.92	-.51	-.42	2.99	.05	.78	.08
70.00	3.98	-.70	-.59	4.08	.06	.56	.06
80.00	5.12	-.90	-.79	5.26	.07	.56	.06
86.40	5.88	-1.04	-.91	6.04	.07	.00	.00

DEV = Total offset from planned hole

DEV/L = Total deviation/depth

ANG = Angel between two points in Degrees

ANG/L = ANG/depth

E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G3-4 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 3(4)

DEPTH	DIR.	INCL.	X	Y	Z
.00	193.33	6.30	.00	.00	.00
4.00	193.33	6.30	-.44	.05	-3.98
10.00	193.33	7.00	-1.13	.12	-9.94
20.00	192.78	7.80	-2.41	.26	-19.85
30.00	192.78	9.00	-3.86	.42	-29.74
40.00	194.44	10.20	-5.52	.59	-39.60
50.00	195.56	11.80	-7.42	.74	-49.42
60.00	197.22	13.00	-9.56	.86	-59.19
70.00	199.44	13.30	-11.84	.92	-68.92
80.00	200.00	13.30	-14.14	.93	-78.66
90.00	199.44	13.80	-16.48	.94	-88.38
00.00	199.44	13.80	-18.87	.96	-98.09
06.40	199.44	13.80	-20.39	.97	-104.30

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G3-4 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 3(4)

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.04	-.00	-.00	.04	.00	.78	.13
20.00	.23	-.03	-.03	.23	.01	.89	.09
30.00	.59	-.08	-.07	.60	.02	1.33	.13
40.00	1.15	-.13	-.15	1.17	.03	1.36	.14
50.00	1.96	-.16	-.28	1.99	.04	1.79	.18
60.00	3.02	-.17	-.45	3.05	.05	1.38	.14
70.00	4.20	-.11	-.65	4.25	.06	.61	.06
80.00	5.41	-.01	-.86	5.48	.07	.13	.01
90.00	6.66	.09	-1.08	6.75	.07	.57	.06
100.00	7.95	.19	-1.31	8.06	.08	.00	.00
106.40	8.78	.25	-1.45	8.90	.08	.00	.00

DEV = Total offset from planned hole

DEV/L = Total deviation/depth

ANG = Angel between two points in Degrees

ANG/L = ANG/depth

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G4-3 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 4(3)

DEPTH	DIR.	INCL.	X	Y	Z
.00	186.11	31.00	.00	.00	.00
4.00	186.11	31.00	-2.01	.45	-3.43
10.00	186.11	31.00	-5.03	1.11	-8.57
20.00	186.33	33.00	-10.20	2.25	-17.05
30.00	185.00	35.80	-15.71	3.52	-25.30
40.00	185.56	36.80	-21.47	4.87	-33.36
50.00	186.11	37.00	-27.33	6.20	-41.36
60.00	187.22	37.20	-33.23	7.45	-49.33
70.00	187.22	37.20	-39.15	8.66	-57.30

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G4-3 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 4(3)

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.00	.00	.00	.00	.00	.00	.00
20.00	.15	-.02	-.09	.17	.01	2.23	.22
30.00	.62	-.17	-.41	.77	.03	3.20	.32
40.00	1.36	-.41	-.93	1.70	.04	1.16	.12
50.00	2.19	-.62	-1.50	2.72	.05	.40	.04
60.00	3.06	-.76	-2.10	3.79	.06	.71	.07
70.00	3.95	-.85	-2.70	4.87	.07	.00	.00

DEV = Total offset from planned hole

DEV/L = Total deviation/depth

ANG = Angel between two points in Degrees

ANG/L = ANG/depth

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G5 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 5

DEPTH	DIR.	INCL.	X	Y	Z
.00	186.67	29.70	.00	.00	.00
4.00	186.67	29.70	-1.94	.41	-3.47
10.00	186.67	30.00	-4.86	1.03	-8.68
20.00	186.67	30.70	-9.80	2.08	-17.31
30.00	186.44	31.00	-14.82	3.16	-25.89
40.00	186.67	31.00	-19.85	4.24	-34.46
50.00	186.11	31.50	-24.92	5.34	-43.01
60.00	186.67	32.00	-30.06	6.45	-51.52
70.00	188.33	32.20	-35.28	7.49	-59.99
80.00	189.22	32.70	-40.56	8.43	-68.43
90.00	188.89	32.80	-45.89	9.36	-76.84
100.00	188.89	32.90	-51.23	10.30	-85.24
110.00	190.00	33.00	-56.59	11.20	-93.63
120.00	189.78	33.30	-61.99	12.06	-102.00
128.60	189.78	33.30	-66.65	12.82	-109.19

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G5 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 5

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
0.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.01	-.00	-.01	.02	.00	.33	.06
20.00	.11	-.02	-.06	.13	.01	.78	.08
30.00	.28	-.07	-.17	.33	.01	.35	.04
40.00	.47	-.12	-.28	.56	.01	.12	.01
50.00	.69	-.19	-.42	.83	.02	.63	.06
60.00	.99	-.28	-.60	1.19	.02	.63	.06
70.00	1.35	-.28	-.82	1.60	.02	.91	.09
80.00	1.79	-.19	-1.06	2.09	.03	.73	.07
90.00	2.27	-.09	-1.34	2.64	.03	.21	.02
100.00	2.77	-.00	-1.62	3.21	.03	.11	.01
110.00	3.28	.13	-1.92	3.81	.03	.61	.06
120.00	3.84	.30	-2.23	4.45	.04	.35	.04
128.60	4.33	.43	-2.52	5.03	.04	.00	.00

EV = Total offset from planned hole
EV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G6 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 6

DEPTH	DIR.	INCL.	X	Y	Z
.00	194.44	15.30	.00	.00	.00
4.00	194.44	15.30	-1.05	.09	-3.86
10.00	194.44	15.50	-2.64	.23	-9.64
20.00	194.44	16.20	-5.36	.47	-19.26
30.00	193.89	18.50	-8.33	.74	-28.81
40.00	195.00	19.50	-11.57	1.03	-38.26
50.00	194.44	20.70	-15.00	1.31	-47.65
60.00	195.56	22.50	-18.67	1.60	-56.95
70.00	197.78	22.70	-22.50	1.80	-66.18
80.00	200.00	23.30	-26.41	1.87	-75.39
90.00	199.44	24.80	-30.48	1.88	-84.52
100.00	200.78	25.00	-34.69	1.88	-93.59
110.00	200.00	26.00	-39.00	1.85	-102.62
120.00	198.89	26.30	-43.41	1.89	-111.59
130.00	197.78	26.70	-47.87	2.01	-120.54
140.00	197.78	27.20	-52.40	2.17	-129.46
148.70	197.78	27.20	-56.37	2.30	-137.19

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVI Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G6 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 6

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
0.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.01	-.00	-.00	.01	.00	.22	.04
20.00	.10	-.01	-.03	.11	.01	.78	.08
30.00	.44	-.05	-.13	.46	.02	2.56	.26
40.00	1.06	-.11	-.32	1.11	.03	1.17	.12
50.00	1.85	-.16	-.58	1.95	.04	1.35	.13
60.00	2.89	-.22	-.92	3.05	.05	2.04	.20
70.00	4.10	-.19	-1.34	4.32	.06	.88	.09
80.00	5.38	-.03	-1.78	5.67	.07	1.09	.11
90.00	6.83	.19	-2.29	7.20	.08	1.68	.17
100.00	8.41	.42	-2.87	8.89	.09	.61	.06
110.00	10.08	.68	-3.49	10.69	.10	1.16	.12
120.00	11.86	.87	-4.15	12.60	.10	.59	.06
130.00	13.69	.98	-4.85	14.56	.11	.67	.07
140.00	15.60	1.06	-5.58	16.60	.12	.56	.06
148.70	17.28	1.12	-6.24	18.41	.12	.00	.00

EV = Total offset from planned hole

EV/L = Total deviation/depth

ANG = Angel between two points in Degrees

ANG/L = ANG/depth

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G7 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 7

DEPTH	DIR.	INCL.	X	Y	Z
.00	197.22	30.20	.00	.00	.00
4.00	197.22	30.20	-2.01	.09	-3.46
10.00	197.22	31.00	-5.06	.22	-8.62
20.00	197.22	31.80	-10.27	.45	-17.16
30.00	197.78	32.00	-15.55	.66	-25.65
40.00	196.67	32.80	-20.90	.89	-34.09
50.00	196.67	34.00	-26.40	1.18	-42.44
60.00	197.22	33.00	-31.91	1.44	-50.78
70.00	197.22	34.00	-37.42	1.68	-59.12
22.30	197.22	34.00	-66.64	2.96	-102.47

Direction in Gons , inclination in Degrees , zero down

E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
PERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G7 FILELOCATION: A:

EVIANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 7

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.04	-.00	-.02	.04	.00	.89	.15
20.00	.22	-.01	-.13	.25	.01	.89	.09
30.00	.47	.00	-.28	.55	.02	.37	.04
40.00	.80	-.01	-.48	.93	.02	1.07	.11
50.00	1.27	-.08	-.78	1.49	.03	1.33	.13
60.00	1.76	-.13	-1.08	2.07	.03	1.15	.12
70.00	2.25	-.15	-1.38	2.64	.04	1.11	.11
22.30	5.18	-.27	-3.23	6.11	.05	.00	.00

EV = Total offset from planned hole
EV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth

E V **BOREHOLE SURVEY** **DEVICO** **Version - 2.00 1991-06-11**
PERATOR: EA **DATE: 91-07-30** **LOCATION: Godesjord**
ROJECT: 143G8 **FILELOCATION: A:**

LIENT: Norsulfid DATE: 19.07.91 HOLE: 8

DEPTH	DIR.	INCL.	X	Y	Z
0.00	187.78	29.20	.00	.00	.00
4.00	187.78	29.20	-1.92	.37	-3.49
8.00	187.78	29.50	-4.80	.93	-8.72
12.00	187.78	30.00	-9.67	1.88	-17.40
16.00	189.22	30.30	-14.61	2.78	-26.05
20.00	191.67	31.00	-19.65	3.54	-34.65
24.00	192.00	31.20	-24.78	4.20	-43.22
28.00	195.22	31.70	-29.97	4.73	-51.75
32.00	195.00	31.70	-35.21	5.13	-60.26
36.00	195.00	32.00	-40.47	5.54	-68.75
39.10	195.33	32.50	-45.31	5.91	-76.45
42.20	195.33	32.50	-48.58	6.15	-81.59

Direction in Gons , inclination in Degrees , zero down

E V BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
 OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
 PROJECT: 143G8 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
 CLIENT: Norsulfid DATE: 19.07.91 HOLE: 8

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.01	-.00	-.01	.02	.00	.33	.06
20.00	.10	-.02	-.05	.11	.01	.56	.06
30.00	.25	.01	-.14	.28	.01	.80	.08
40.00	.50	.18	-.26	.59	.01	1.47	.15
50.00	.83	.45	-.43	1.04	.02	.28	.03
60.00	1.23	.86	-.63	1.63	.03	1.77	.18
70.00	1.68	1.39	-.85	2.34	.03	.12	.01
80.00	2.15	1.90	-1.08	3.07	.04	.33	.03
89.10	2.64	2.38	-1.33	3.80	.04	.58	.06
95.20	2.99	2.71	-1.51	4.31	.05	.00	.00

DEV = Total offset from planned hole

DEV/L = Total deviation/depth

ANG = Angel between two points in Degrees

ANG/L = ANG/depth

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G9 FILELOCATION: A:

CLIENT: Nordsulfid DATE: 19.07.91 HOLE: 9

DEPTH	DIR.	INCL.	X	Y	Z
.00	185.56	29.70	.00	.00	.00
4.00	185.56	29.70	-1.93	.45	-3.47
10.00	185.56	30.00	-4.84	1.12	-8.68
20.00	185.00	31.00	-9.78	2.28	-17.29
30.00	186.11	31.80	-14.86	3.45	-25.83
40.00	185.00	32.70	-20.06	4.65	-34.29
50.00	186.67	33.30	-25.37	5.85	-42.67
60.00	187.78	34.00	-30.80	6.96	-51.00
70.00	188.33	35.00	-36.36	8.01	-59.24
80.00	188.11	35.00	-42.00	9.07	-67.43
90.00	188.89	35.30	-47.66	10.10	-75.61
100.00	188.11	35.50	-53.36	11.14	-83.76
114.00	188.11	35.50	-61.35	12.65	-95.16

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G9 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Nordsulfid DATE: 19.07.91 HOLE: 9

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.01	-.00	-.01	.02	.00	.33	.06
20.00	.13	-.05	-.08	.16	.01	1.15	.11
30.00	.37	-.11	-.23	.45	.02	1.06	.11
40.00	.75	-.20	-.46	.90	.02	1.16	.12
50.00	1.23	-.28	-.76	1.47	.03	1.13	.11
60.00	1.83	-.27	-1.12	2.16	.04	.99	.10
70.00	2.57	-.22	-1.56	3.02	.04	1.15	.12
80.00	3.38	-.16	-2.06	3.96	.05	.13	.01
90.00	4.22	-.08	-2.57	4.94	.05	.56	.06
100.00	5.09	-.00	-3.10	5.96	.06	.50	.05
114.00	6.32	.05	-3.87	7.41	.06	.00	.00

DEV = Total offset from planned hole
DEV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G10 FILELOCATION: A:

CLIENT: Norsulfid DATE: 19.07.91 HOLE: 10

DEPTH	DIR.	INCL.	X	Y	Z
.00	184.44	29.80	.00	.00	.00
4.00	184.44	29.80	-1.93	.48	-3.47
10.00	184.44	30.20	-4.84	1.21	-8.67
20.00	184.78	30.80	-9.77	2.42	-17.28
30.00	185.56	31.00	-14.76	3.61	-25.86
40.00	184.44	31.00	-19.77	4.81	-34.44
50.00	184.44	31.50	-24.81	6.06	-42.98
60.00	185.56	31.50	-29.89	7.28	-51.51
70.00	186.11	31.80	-35.00	8.44	-60.02
80.00	186.11	32.00	-40.16	9.59	-68.51
90.00	185.56	32.00	-45.33	10.76	-76.99
100.00	185.78	32.50	-50.53	11.95	-85.45
110.00	186.11	32.50	-55.78	13.12	-93.89
120.00	186.11	31.80	-60.97	14.28	-102.35
130.00	186.67	32.00	-66.13	15.40	-110.84
140.00	186.67	32.00	-71.32	16.50	-119.32
149.50	186.67	32.00	-76.24	17.54	-127.38

Direction in Gons , inclination in Degrees , zero down

DEV BOREHOLE SURVEY DEVICO Version - 2.00 1991-06-11
OPERATOR: EA DATE: 91-07-30 LOCATION: Godesjord
PROJECT: 143G10 FILELOCATION: A:

DEVIATION ANALYSE COMPARED TO HOLE WITHOUT DEV.
CLIENT: Norsulfid DATE: 19.07.91 HOLE: 10

DEPTH	dX	dY	dZ	DEV	DEV/L	ANG	ANG/L
.00	.00	.00	.00	.00	.00	.00	.00
4.00	.00	.00	.00	.00	.00	.00	.00
10.00	.02	-.00	-.01	.02	.00	.44	.07
20.00	.12	-.02	-.07	.14	.01	.69	.07
30.00	.30	.00	-.17	.34	.01	.46	.05
40.00	.48	.00	-.27	.56	.01	.58	.06
50.00	.70	-.05	-.40	.81	.02	.56	.06
60.00	.95	-.07	-.55	1.11	.02	.59	.06
70.00	1.25	-.02	-.72	1.44	.02	.44	.04
80.00	1.59	.03	-.91	1.83	.02	.22	.02
90.00	1.93	.07	-1.10	2.23	.02	.29	.03
100.00	2.31	.08	-1.32	2.67	.03	.57	.06
110.00	2.73	.11	-1.57	3.15	.03	.18	.02
120.00	3.11	.16	-1.78	3.58	.03	.78	.08
130.00	3.45	.24	-1.97	3.98	.03	.37	.04
140.00	3.81	.34	-2.16	4.40	.03	.00	.00
149.50	4.15	.44	-2.35	4.79	.03	.00	.00

DEV = Total offset from planned hole
DEV/L = Total deviation/depth
ANG = Angel between two points in Degrees
ANG/L = ANG/depth