

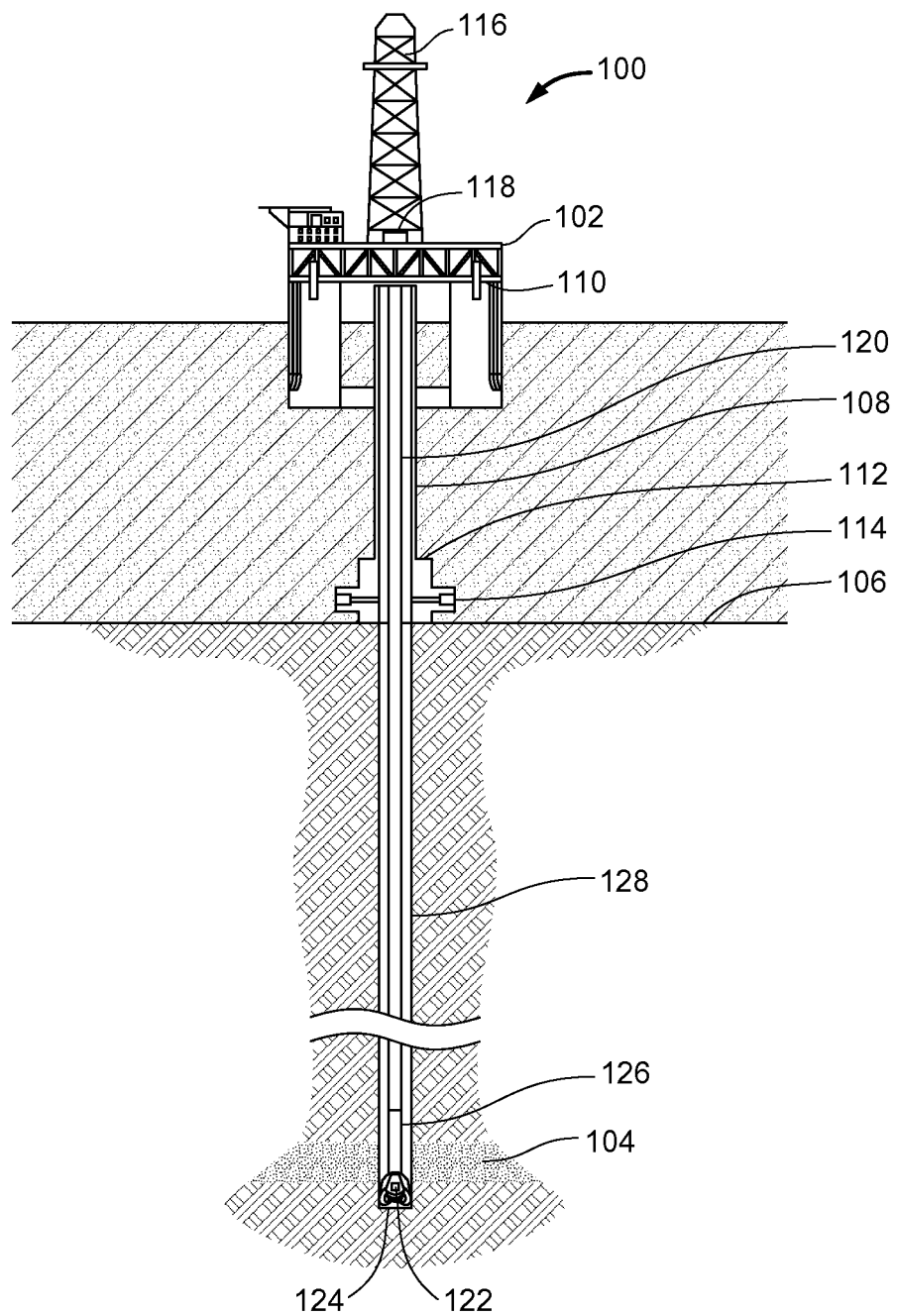
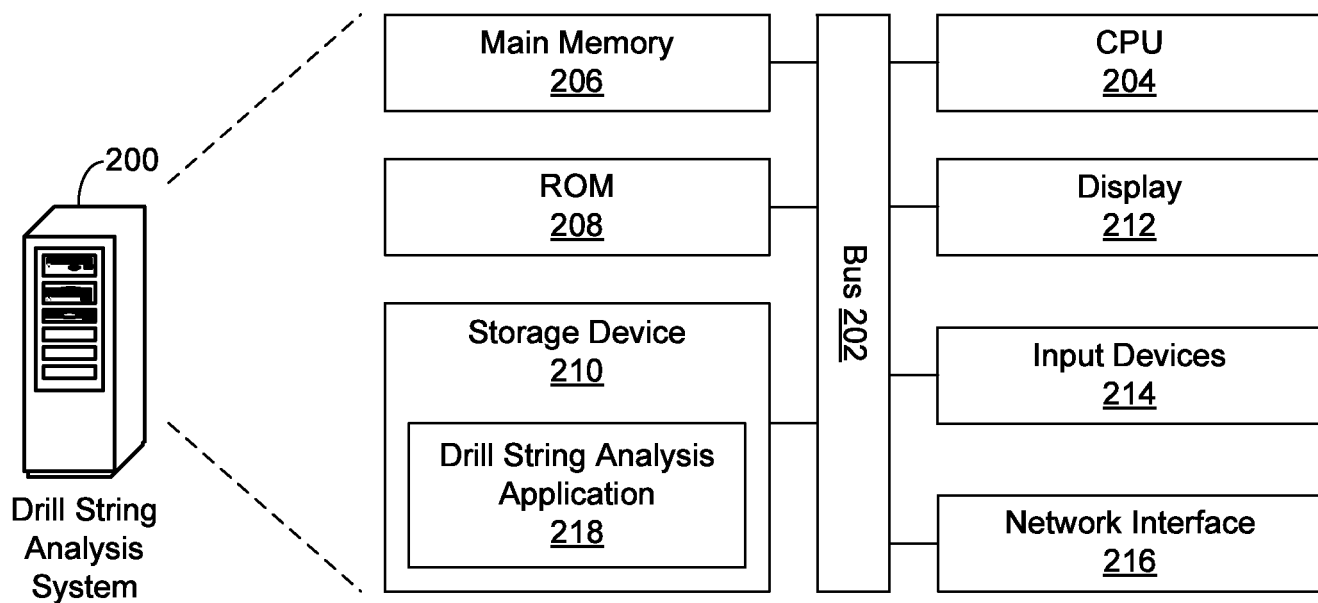
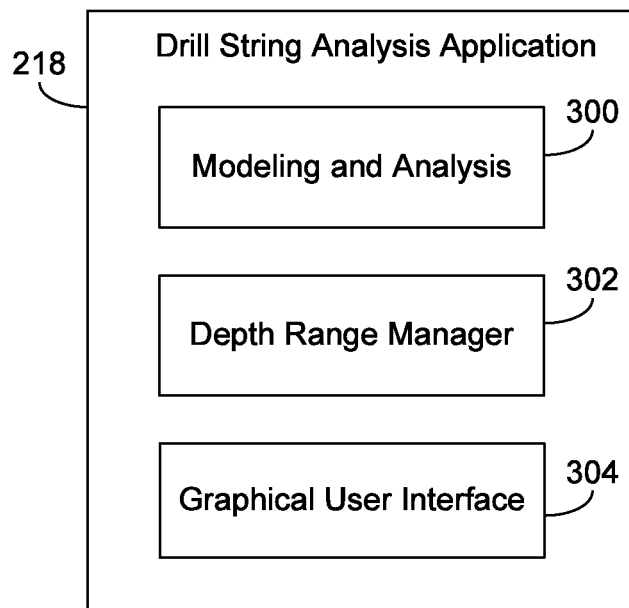


FIG. 1

**FIG. 2**

**FIG. 3**

400

FIG. 4A	FIG. 4C	FIG. 4B
<u>402</u>	<u>406</u>	<u>404</u>

FIG. 4

402

Operational Parameters 410

Depth Range Manager

	Start Depth (ft)	End Depth (ft)	Description	Enabled
1	0.0	20,000.0	Full Analysis	☒ 412
				☐ 414

☐ Common

-Operational Pump Rate _____

Pump rate: gpm

☐ Torque & Drag

-Drilling Operations _____

- ☐ Use Tripping In _____

Speed: ft/min RPM: rpm 416

FIG. 4A

404 → Analysis Settings

▲ Common

-Depth Range Manger Options—
Active Depth Range: Full Analysis ▼ ⓘ
-Calculation Options—
Sea water density: 8.60 ppg

▲ Torque & Drag

-Hook Load/Weight-Indicator Correction —
Block weight: 50.00 kip
-Analytical Method —
☐ Use Bending Stress Magnification
-String Analysis Model —
☐ Use stiff string ⓘ
☐ Use viscous torque and drag ⓘ
Buckling limit factor: ⓘ
-Maximum Overpull —
using % of yield: 90.00 %
-Fluid Column —
☐ Use fluid column gradient ⓘ

FIG. 4B

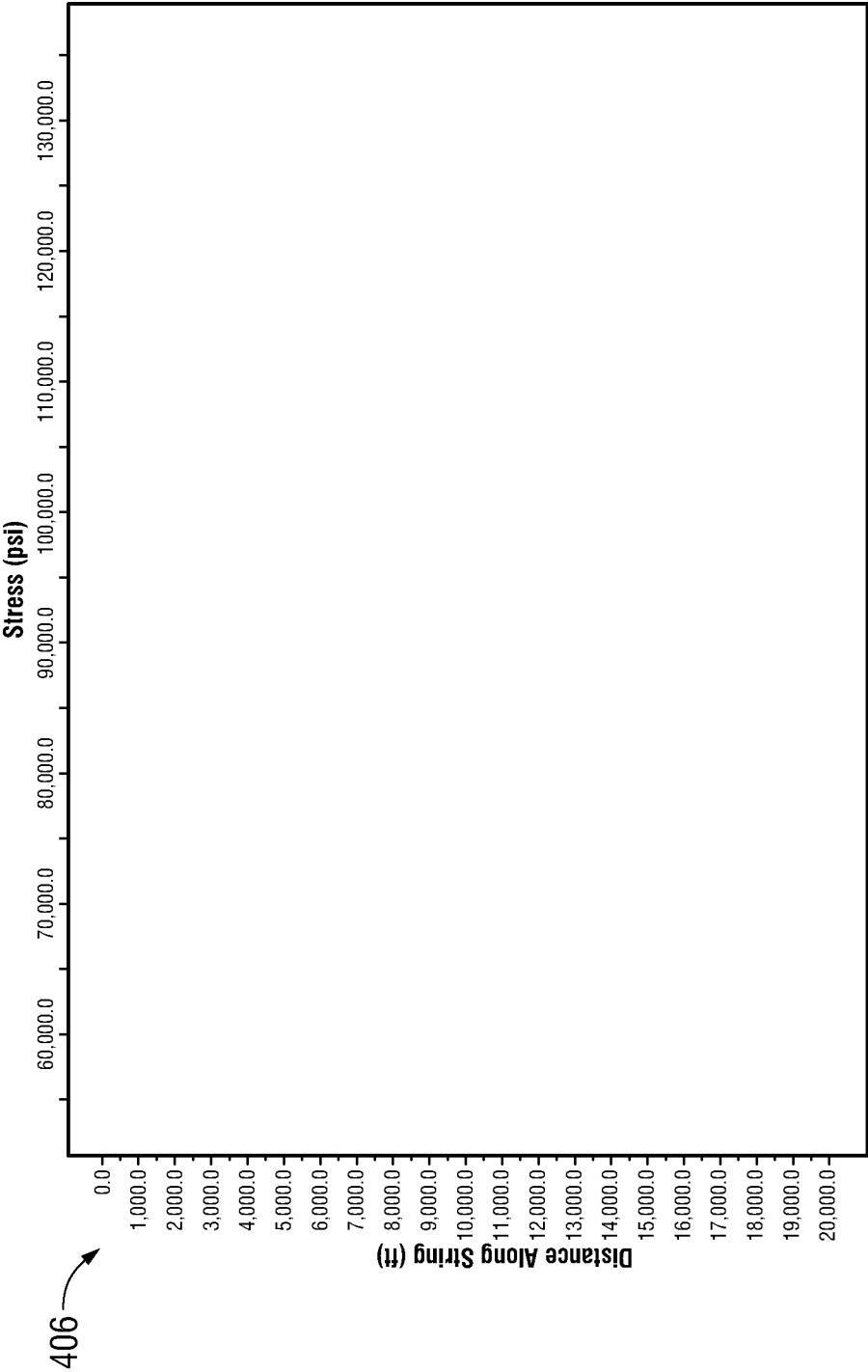


FIG. 4C

400

FIG. 5A	FIG. 5C	FIG. 5B
<u>402</u>	<u>406</u>	<u>404</u>

FIG. 5

Operational Parameters 410

402

Depth Range Manager

	Start Depth (ft)	End Depth (ft)	Description	Enabled
1	0.0	20,000.0	Full Analysis	☒ 412
				☐ 414

▲ Common

-Operational Pump Rate _____

Pump rate: gpm

▲ Torque & Drag

-Drilling Operations _____

- ☒ Use Tripping In _____

Speed: ft/min RPM: rpm

FIG. 5A

404 → Analysis Settings

▲ Common

-Depth Range Manger Options—
Active Depth Range: Full Analysis ▼ ⓘ
-Calculation Options—
Sea water density: 8.60 ppg

▲ Torque & Drag

-Hook Load/Weight-Indicator Correction —
Block weight: 50.00 kip
-Analytical Method —
☐ Use Bending Stress Magnification
-String Analysis Model —
☐ Use stiff string ⓘ
☐ Use viscous torque and drag ⓘ
Buckling limit factor: ⓘ
-Maximum Overpull —
using % of yield: 90.00 %
-Fluid Column —
☐ Use fluid column gradient ⓘ

420

422

FIG. 5B

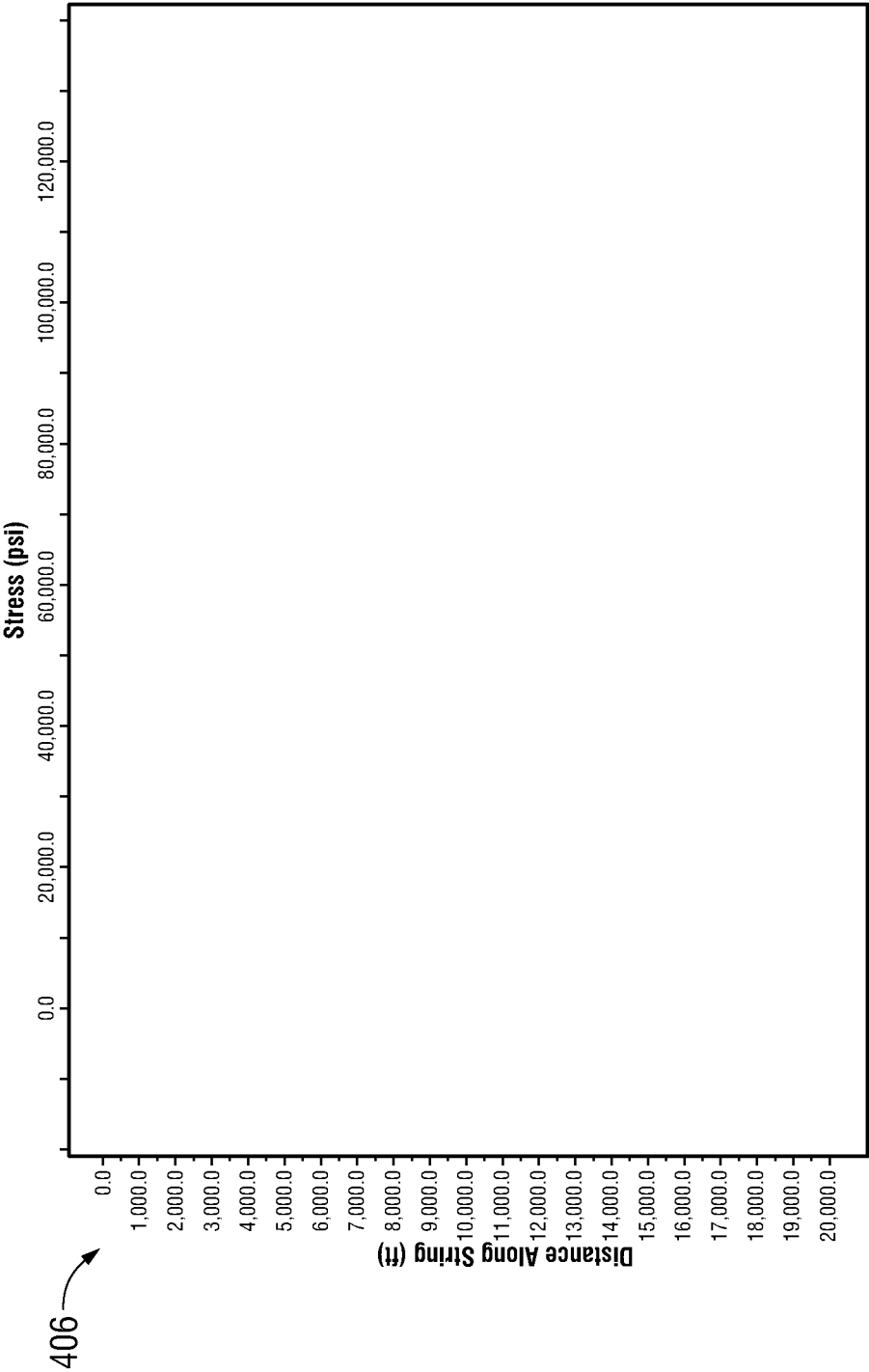


FIG. 5C

400

FIG. 6A	FIG. 6C	FIG. 6B
<u>402</u>	<u>406</u>	<u>404</u>

FIG. 6

Operational Parameters 410

402

Depth Range Manager

	Start Depth (ft)	End Depth (ft)	Description	Enabled
1	0.0	20,000.0	Full Analysis	☒ 412
				☐ 414

▲ Common

-Operational Pump Rate _____

Pump rate: gpm

▲ Torque & Drag

-Drilling Operations _____

- ☒ Use Tripping In _____

Speed: ft/min RPM: rpm

FIG. 6A

404 → Analysis Settings

▲ Common

-Depth Range Manger Options—
Active Depth Range: Full Analysis ▼ ⓘ
-Calculation Options—
Sea water density: 8.60 ppg

▲ Torque & Drag

-Hook Load/Weight-Indicator Correction —
Block weight: 50.00 kip
-Analytical Method —
☐ Use Bending Stress Magnification
-String Analysis Model —
☐ Use stiff string ⓘ
☐ Use viscous torque and drag ⓘ
Buckling limit factor: ⓘ
-Maximum Overpull —
using % of yield: 90.00 %
-Fluid Column —
☐ Use fluid column gradient ⓘ

FIG. 6B

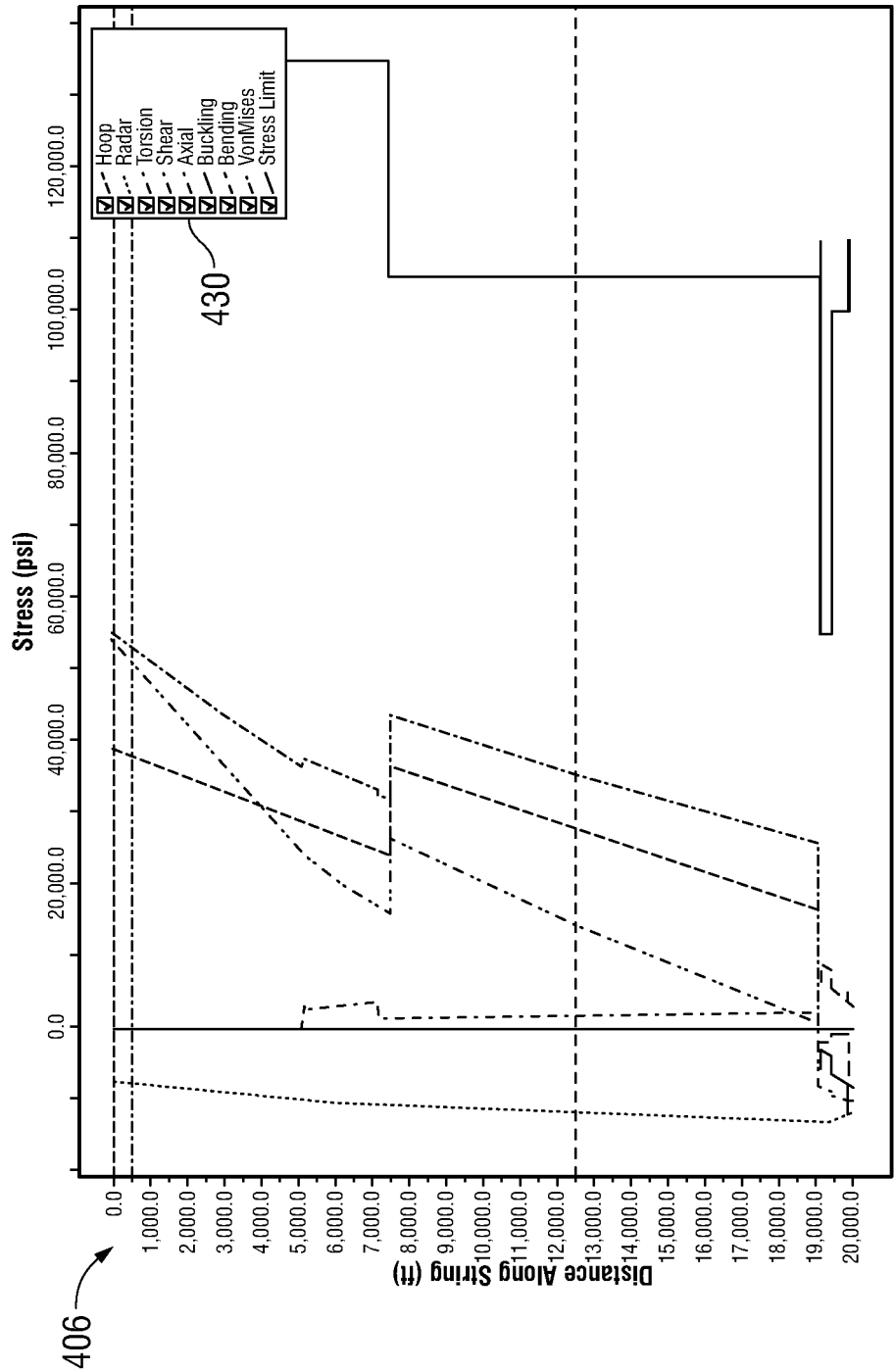


FIG. 6C

400

FIG. 7A	FIG. 7C	FIG. 7B
<u>402</u>	<u>406</u>	<u>404</u>

FIG. 7

402

Operational Parameters 410

Depth Range Manager

	Start Depth (ft)	End Depth (ft)	Description	Enabled
1	0.0	20,000.0	Full Analysis	☒
2	15,000.0	20,000.0	Targeted Area 1	☒
3	17,000.0	20,000.0	Targeted Area 2	☒

412

414

▲ Common

-Operational Pump Rate _____

Pump rate: gpm

▲ Torque & Drag

-Drilling Operations _____

- ☒ Tripping In _____

Speed: ft/min RPM: rpm

- ☒ Tripping Out _____

Speed: ft/min RPM: rpm

- ☒ Rotating On Bottom _____

WOB: kip Torque at bit: ft-lbf

- ☐ Side Drilling _____

WOB: kip Torque at bit: ft-lbf

- ☐ Backreaming _____

WOB: kip Torque at bit: ft-lbf

- ☐ Rotating Off Bottom _____

416

FIG. 7A

404 → Analysis Settings

▲ Common

-Depth Range Manger Options—
Active Depth Range: Full Analysis ▼ ⓘ
-Calculation Options—
Sea water density: 8.60 ppg

▲ Torque & Drag

-Hook Load/Weight-Indicator Correction —
Block weight: 50.00 kip
-Analytical Method —
☐ Use Bending Stress Magnification
-String Analysis Model —
☐ Use stiff string ⓘ
☐ Use viscous torque and drag ⓘ
Buckling limit factor: ⓘ
-Maximum Overpull —
using % of yield: 90.00 %
-Fluid Column —
☐ Use fluid column gradient ⓘ

420

422

FIG. 7B

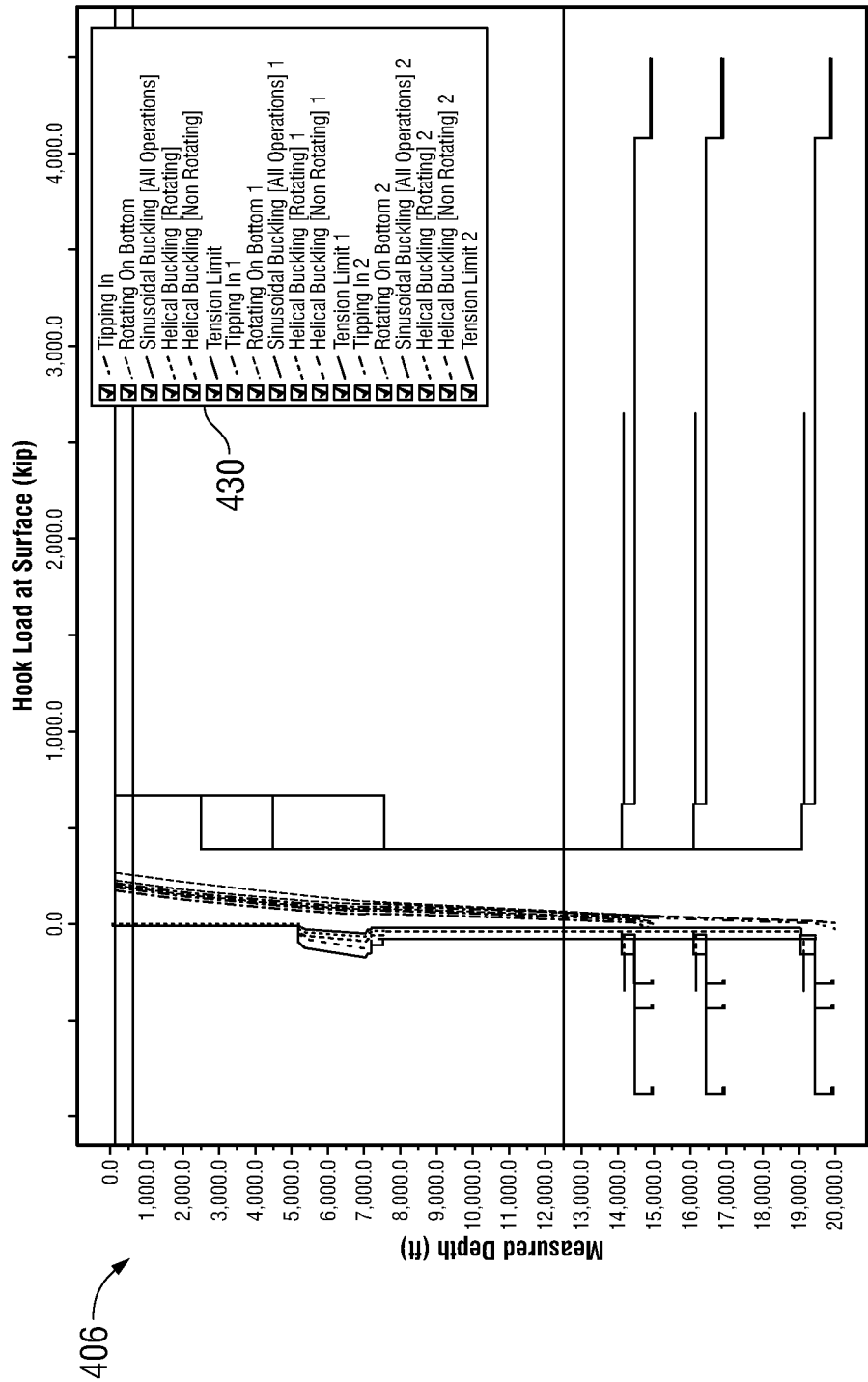


FIG. 7C

400

FIG. 8A	FIG. 8C	FIG. 8B
<u>402</u>	<u>406</u>	<u>404</u>

FIG. 8

402

Operational Parameters 410

Depth Range Manager

	Start Depth (ft)	End Depth (ft)	Description	Enabled
1	0.0	20,000.0	Full Analysis	☒
2	15,000.0	20,000.0	Targeted Area 1	☒
3	17,000.0	20,000.0	Targeted Area 2	☒

412

414

▲ Common

-Operational Pump Rate _____

Pump rate: gpm

▲ Torque & Drag

-Drilling Operations _____

- ☒ Tripping In _____

Speed: ft/min RPM: rpm

- ☐ Tripping Out _____

Speed: ft/min RPM: rpm

- ☒ Rotating On Bottom _____

WOB: kip Torque at bit: ft-lbf

- ☐ Side Drilling _____

WOB: kip Torque at bit: ft-lbf

- ☐ Backreaming _____

WOB: kip Torque at bit: ft-lbf

- ☐ Rotating Off Bottom _____

416

FIG. 8A

404 Analysis Settings

▲ Common

-Run Parameters

Step size: 1,000.0 ft

-Calculation Options

Sea water density: 8.60 ppg

▲ Torque & Drag

☒ Actual Load Values

-Hook Load/Weight-Indicator Correction

Block weight: 50.0 kip

☐ Use sheave friction correction

Lines strung: 12

Mechanical efficiency: 97.00 %

-Analytical Method

☐ Use Bending Stress Magnification

-String Analysis Model

☐ Use stiff string ⓘ
Drag chart calculations using stiff string:
About 2 minutes

☐ Use viscous torque and drag ⓘ

Buckling limit factor: % ⓘ

-Maximum Overpull

using % of yield: 90.00 %

-Fluid Column

☐ Use fluid column gradient ⓘ

FIG. 8B

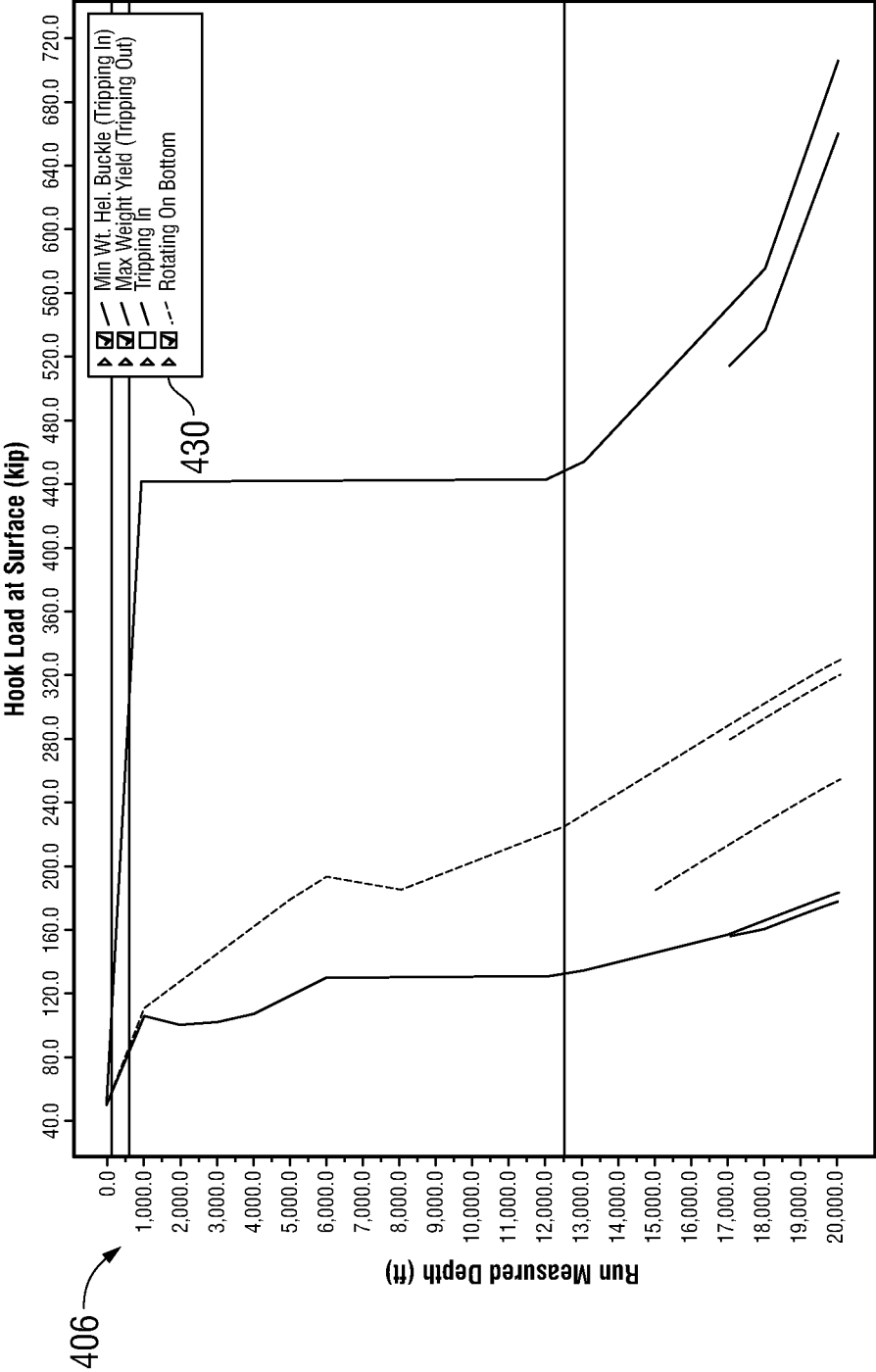


FIG. 8C

400

FIG. 9A	FIG. 9C	FIG. 9B
<u>402</u>	<u>406</u>	<u>404</u>

FIG. 9

402

Operational Parameters 410

Depth Range Manager

	Start Depth (ft)	End Depth (ft)	Description	Enabled
1	0.0	20,000.0	Full Analysis	☐
2	15,000.0	20,000.0	Targeted Area 1	☒
3	17,000.0	20,000.0	Targeted Area 2	☒

412

414

▲ Common

-Operational Pump Rate _____

Pump rate: gpm

▲ Torque & Drag

-Drilling Operations _____

- ☒ Tripping In _____

Speed: ft/min RPM: rpm

- ☐ Tripping Out _____

Speed: ft/min RPM: rpm

- ☒ Rotating On Bottom _____

WOB: kip Torque at bit: ft-lbf

- ☐ Side Drilling _____

WOB: kip Torque at bit: ft-lbf

- ☐ Backreaming _____

WOB: kip Torque at bit: ft-lbf

- ☐ Rotating Off Bottom _____

416

FIG. 9A

404 Analysis Settings

420

Common

-Run Parameters

Step size: ft

-Calculation Options

Sea water density: ppg

422

Torque & Drag

☒ Actual Load Values

-Hook Load/Weight-Indicator Correction

Block weight: kip

☐ Use sheave friction correction

Lines strung:

Mechanical efficiency: %

-Analytical Method

☐ Use Bending Stress Magnification

-String Analysis Model

☐ Use stiff string ⓘ

Drag chart calculations using stiff string:
About 2 minutes

☐ Use viscous torque and drag ⓘ

Buckling limit factor: % ⓘ

-Maximum Overpull

using % of yield: %

-Fluid Column

☐ Use fluid column gradient ⓘ

FIG. 9B

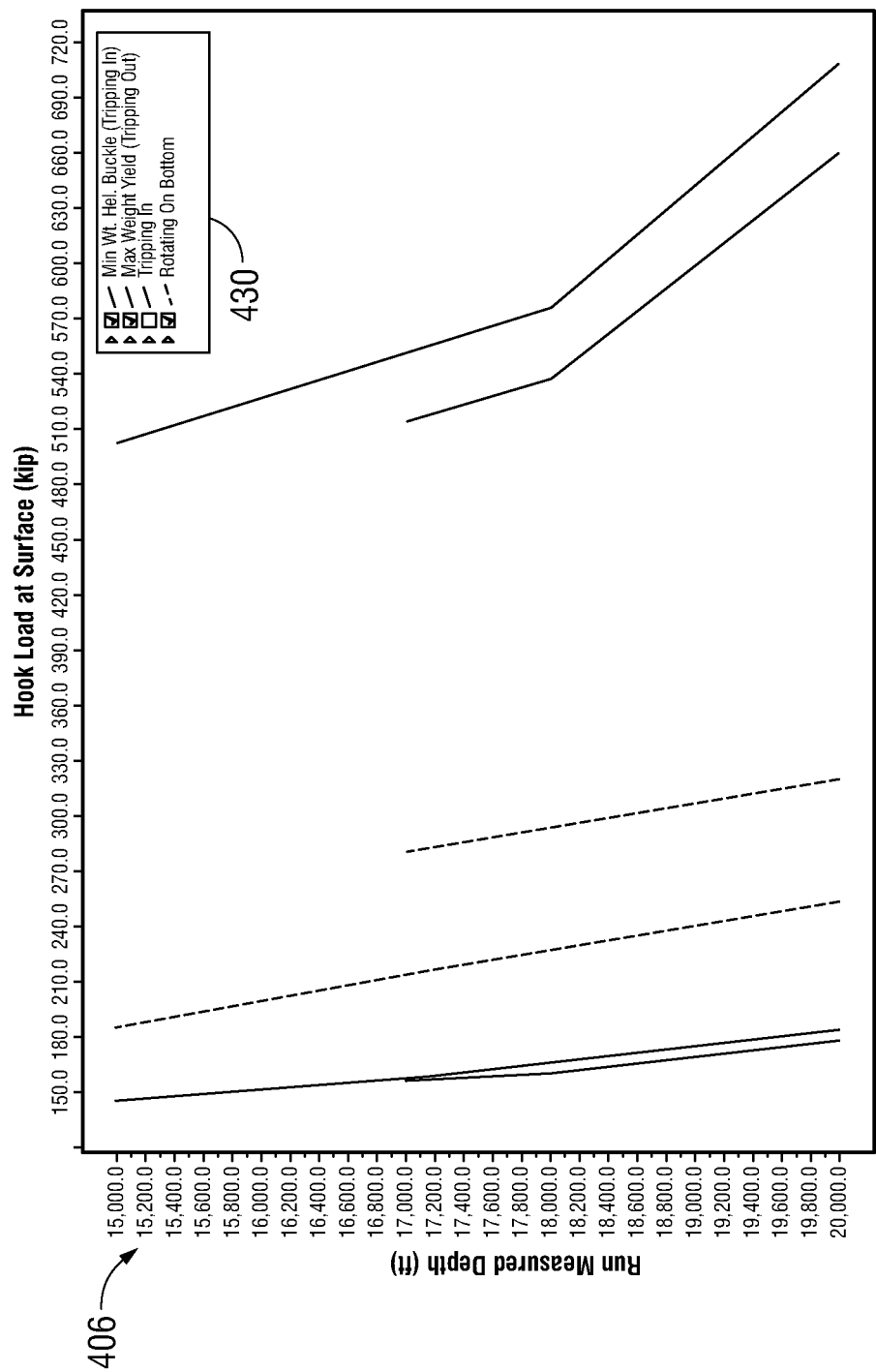


FIG. 9C

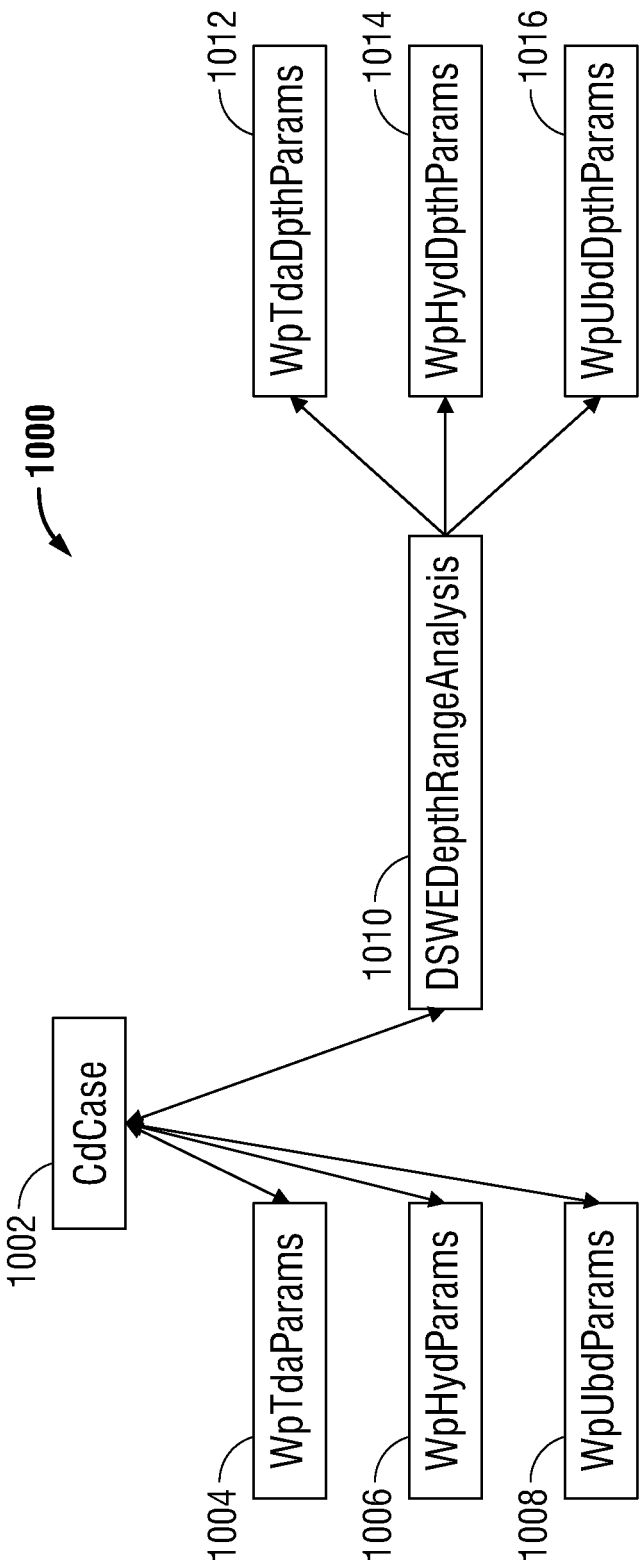


FIG. 10

1100

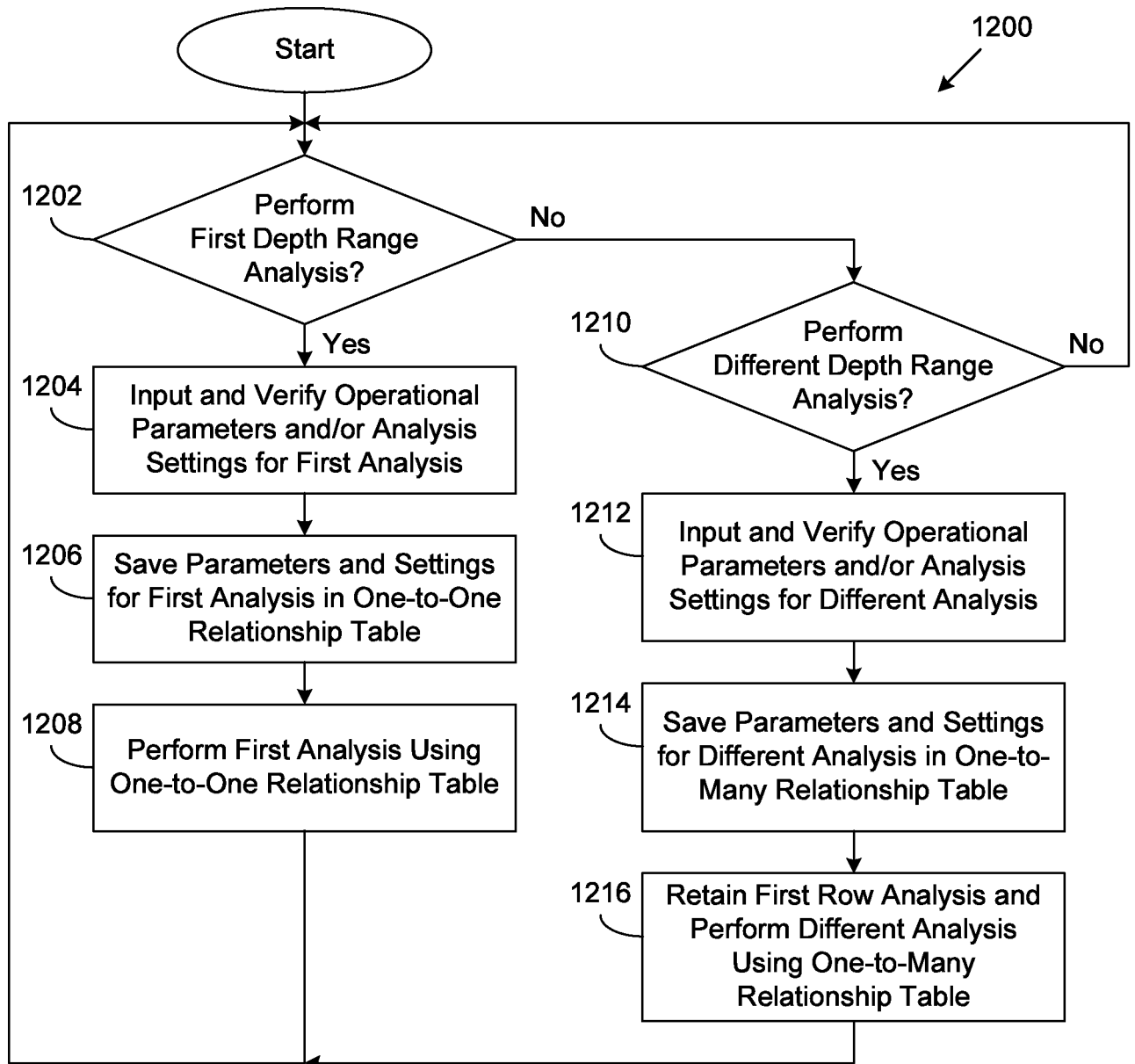
Case_Id (PK)	Wellbore_Id (PK)	Well_Id (PK)	Description	Start Depth	End Depth	IsEnabled	DSWETda Params_Id	DSWEHyd Params_Id	DSWEUbd Params_Id	Sequence_No
avjdnf	ehyad	omdok	First Row	0	20000	NULL	null	null	abcde	0

FIG. 11A

1102

Case_Id (PK)	Wellbore_Id (PK)	Well_Id (PK)	Description	Start Depth	End Depth	IsEnabled	DSWETda Params_Id	DSWEHyd Params_Id	DSWEUbd Params_Id	Sequence_No
avjdnf	ehyad	omdok	First Row	0	5000	TRUE	null	null	abcde	0
avjdnf	ehyad	omdok	MiddleAnalysis	5000	10000	FALSE	mplem	irhu9	pkimd	1
avjdnf	ehyad	omdok	MiddleAnalysis2	7000	10000	TRUE	ldmis3	padm5	Mahdq	2
avjdnf	ehyad	omdok	Last Row	10000	20000	TRUE	masdi4	lao9e	mdisd3	3

FIG. 11B

**FIG. 12**

400

FIG. 13A	FIG. 13C	FIG. 13B
<u>402</u>	<u>406</u>	<u>404</u>

FIG. 13

402

Operational Parameters 410

Depth Range Manager

	Start Depth (ft)	End Depth (ft)	Description	Enabled
1	0.0	20,000.0	Full Analysis	☒
2	15,000.0	20,000.0	Targeted Area 1	☒
3	17,000.0	20,000.0	Targeted Area 2	☒

412

414

▲ Common

-Operational Pump Rate _____

Pump rate: gpm

▲ Torque & Drag

-Drilling Operations _____

- ☒ Tripping In _____

Speed: ft/min RPM: rpm

- ☐ Tripping Out _____

Speed: ft/min RPM: rpm

- ☒ Rotating On Bottom _____

WOB: kip Torque at bit: ft-lbf

- ☐ Side Drilling _____

WOB: kip Torque at bit: ft-lbf

- ☐ Backreaming _____

WOB: kip Torque at bit: ft-lbf

- ☐ Rotating Off Bottom _____

416

FIG. 13A

404 → **Analysis Settings**

▲ Common 420

-Run Parameters _____

Step size: ft

-Calculation Options _____

Sea water density: ppg

▲ Torque & Drag 422

☒ Actual Load Values

-Hook Load/Weight-Indicator Correction _____

Block weight: kip

☐ Use sheave friction correction

Lines strung:

Mechanical efficiency: %

-Analytical Method _____

☐ Use Bending Stress Magnification

-String Analysis Model _____

☐ Use stiff string ⓘ

Drag chart calculations using stiff string:
About 2 minutes

☐ Use viscous torque and drag ⓘ

Buckling limit factor: % ⓘ

-Maximum Overpull _____

using % of yield: %

-Fluid Column _____

☐ Use fluid column gradient ⓘ

FIG. 13B

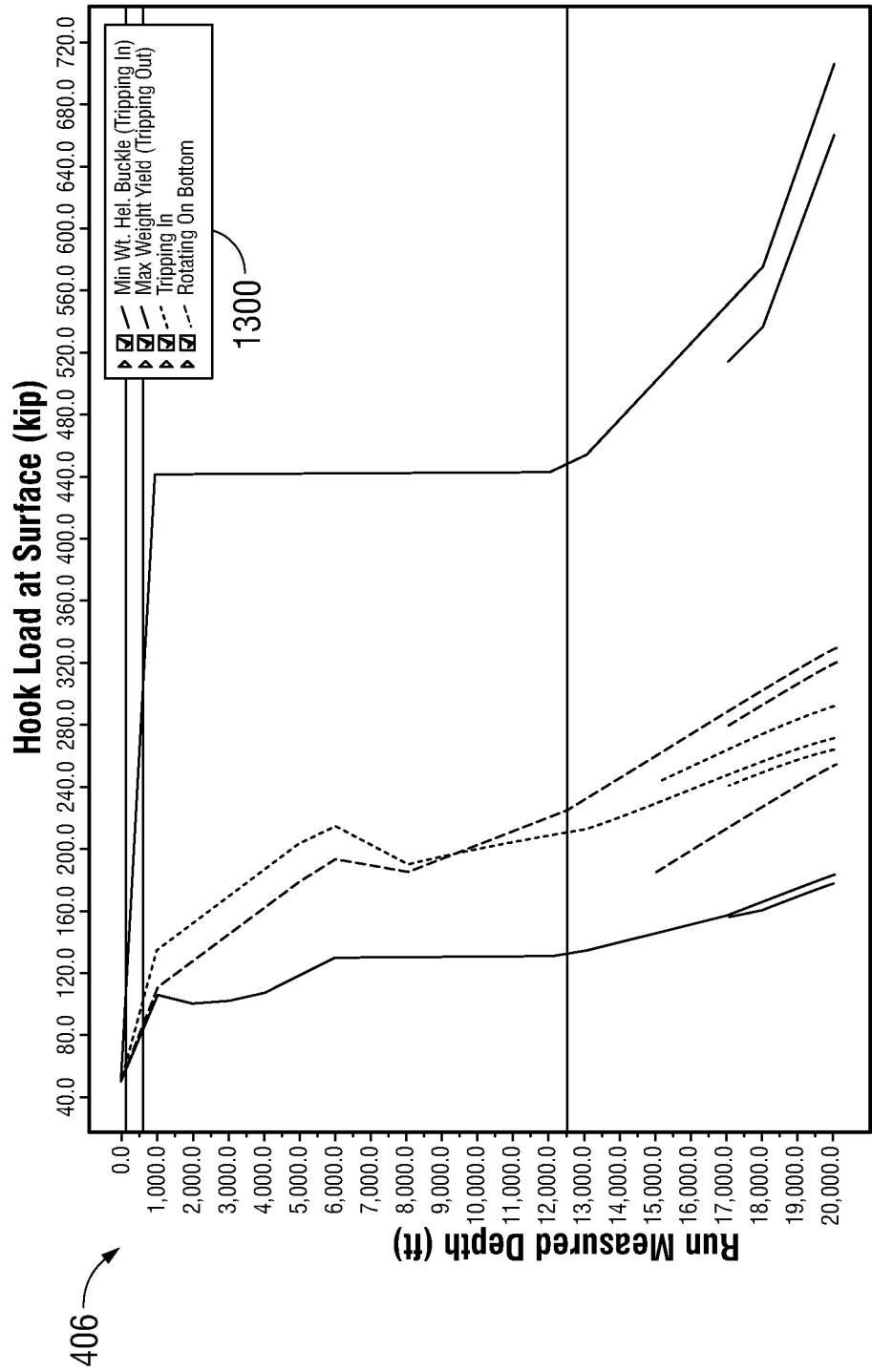


FIG. 13C

400

FIG. 14A	FIG. 14C	FIG. 14B
<u>402</u>	<u>406</u>	<u>404</u>

FIG. 14

402

Operational Parameters 410

Depth Range Manager

	Start Depth (ft)	End Depth (ft)	Description	Enabled
1	0.0	20,000.0	Full Analysis	☒
2	15,000.0	20,000.0	Targeted Area 1	☒
3	17,000.0	20,000.0	Targeted Area 2	☒

412

414

▲ Common

-Operational Pump Rate _____

Pump rate: gpm

▲ Torque & Drag

-Drilling Operations _____

- ☒ Tripping In _____

Speed: ft/min RPM: rpm

- ☐ Tripping Out _____

Speed: ft/min RPM: rpm

- ☒ Rotating On Bottom _____

WOB: kip Torque at bit: ft-lbf

- ☐ Side Drilling _____

WOB: kip Torque at bit: ft-lbf

- ☐ Backreaming _____

WOB: kip Torque at bit: ft-lbf

- ☐ Rotating Off Bottom _____

416

FIG. 14A

404 → **Analysis Settings**

▲ Common 420

-Run Parameters _____

Step size: ft

-Calculation Options _____

Sea water density: ppg

▲ Torque & Drag 422

☒ Actual Load Values

-Hook Load/Weight-Indicator Correction _____

Block weight: kip

☐ Use sheave friction correction

Lines strung:

Mechanical efficiency: %

-Analytical Method _____

☐ Use Bending Stress Magnification

-String Analysis Model _____

☐ Use stiff string ⓘ

Drag chart calculations using stiff string:
About 2 minutes

☐ Use viscous torque and drag ⓘ

Buckling limit factor: % ⓘ

-Maximum Overpull _____

using % of yield: %

-Fluid Column _____

☐ Use fluid column gradient ⓘ

FIG. 14B

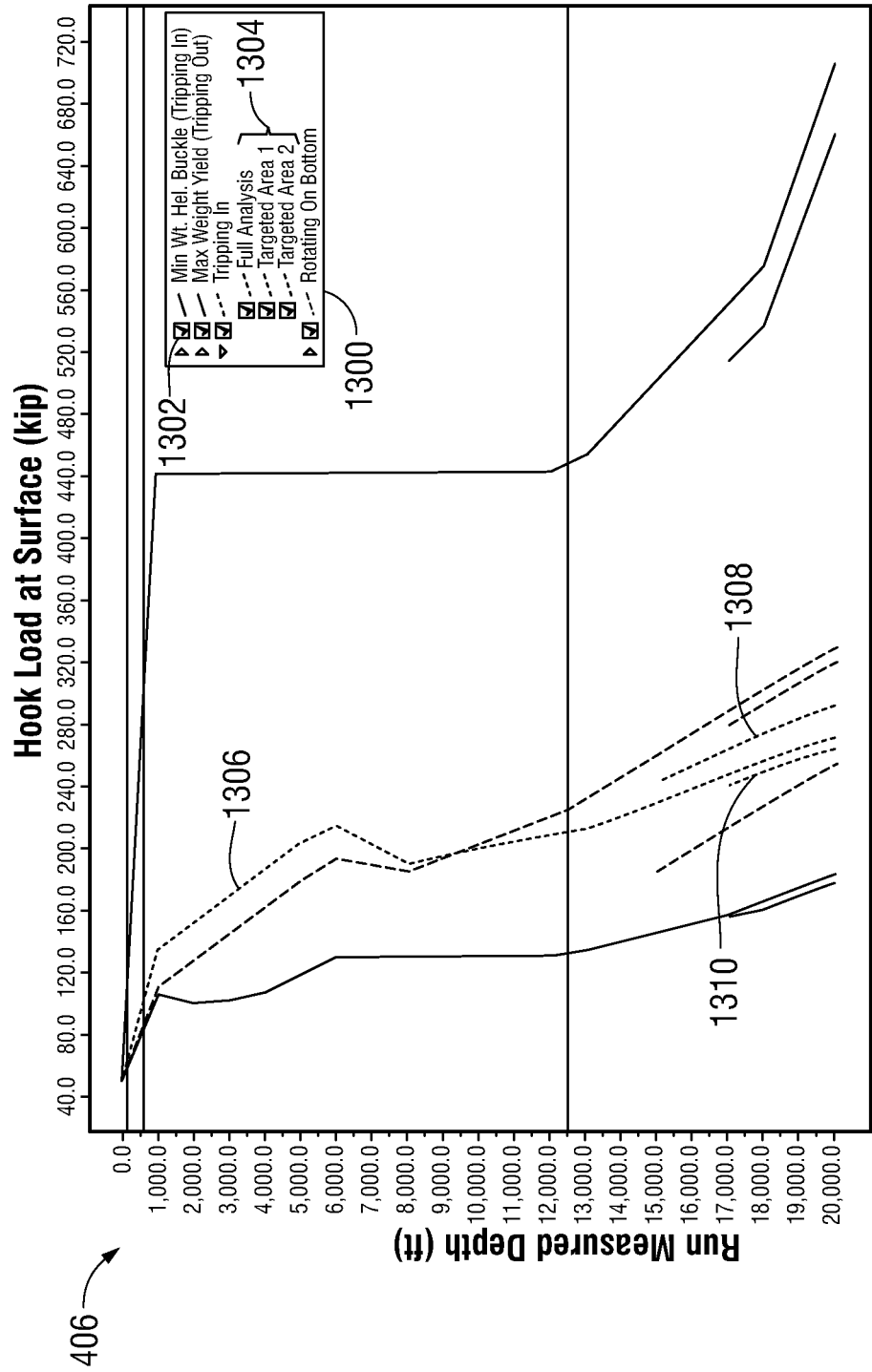


FIG. 14C

400

FIG. 15A	FIG. 15C	FIG. 15B
<u>402</u>	<u>406</u>	<u>404</u>

FIG. 15

402

Operational Parameters 410

Depth Range Manager

	Start Depth (ft)	End Depth (ft)	Description	Enabled
1	0.0	20,000.0	Full Analysis	☒
2	15,000.0	20,000.0	Targeted Area 1	☒
3	17,000.0	20,000.0	Targeted Area 2	☒

412

414

▲ Common

-Operational Pump Rate _____

Pump rate: gpm

▲ Torque & Drag

-Drilling Operations _____

- ☒ Tripping In _____

Speed: ft/min RPM: rpm

- ☐ Tripping Out _____

Speed: ft/min RPM: rpm

- ☒ Rotating On Bottom _____

WOB: kip Torque at bit: ft-lbf

- ☐ Side Drilling _____

WOB: kip Torque at bit: ft-lbf

- ☐ Backreaming _____

WOB: kip Torque at bit: ft-lbf

- ☐ Rotating Off Bottom _____

416

FIG. 15A

404 → **Analysis Settings**

▲ Common

-Run Parameters

Step size: ft

-Calculation Options

Sea water density: ppg

▲ Torque & Drag

☒ Actual Load Values

-Hook Load/Weight-Indicator Correction

Block weight: kip

☐ Use sheave friction correction

Lines strung:

Mechanical efficiency: %

-Analytical Method

☐ Use Bending Stress Magnification

-String Analysis Model

☐ Use stiff string ⓘ
Drag chart calculations using stiff string:
About 2 minutes

☐ Use viscous torque and drag ⓘ

Buckling limit factor: % ⓘ

-Maximum Overpull

using % of yield: %

-Fluid Column

☐ Use fluid column gradient ⓘ

FIG. 15B

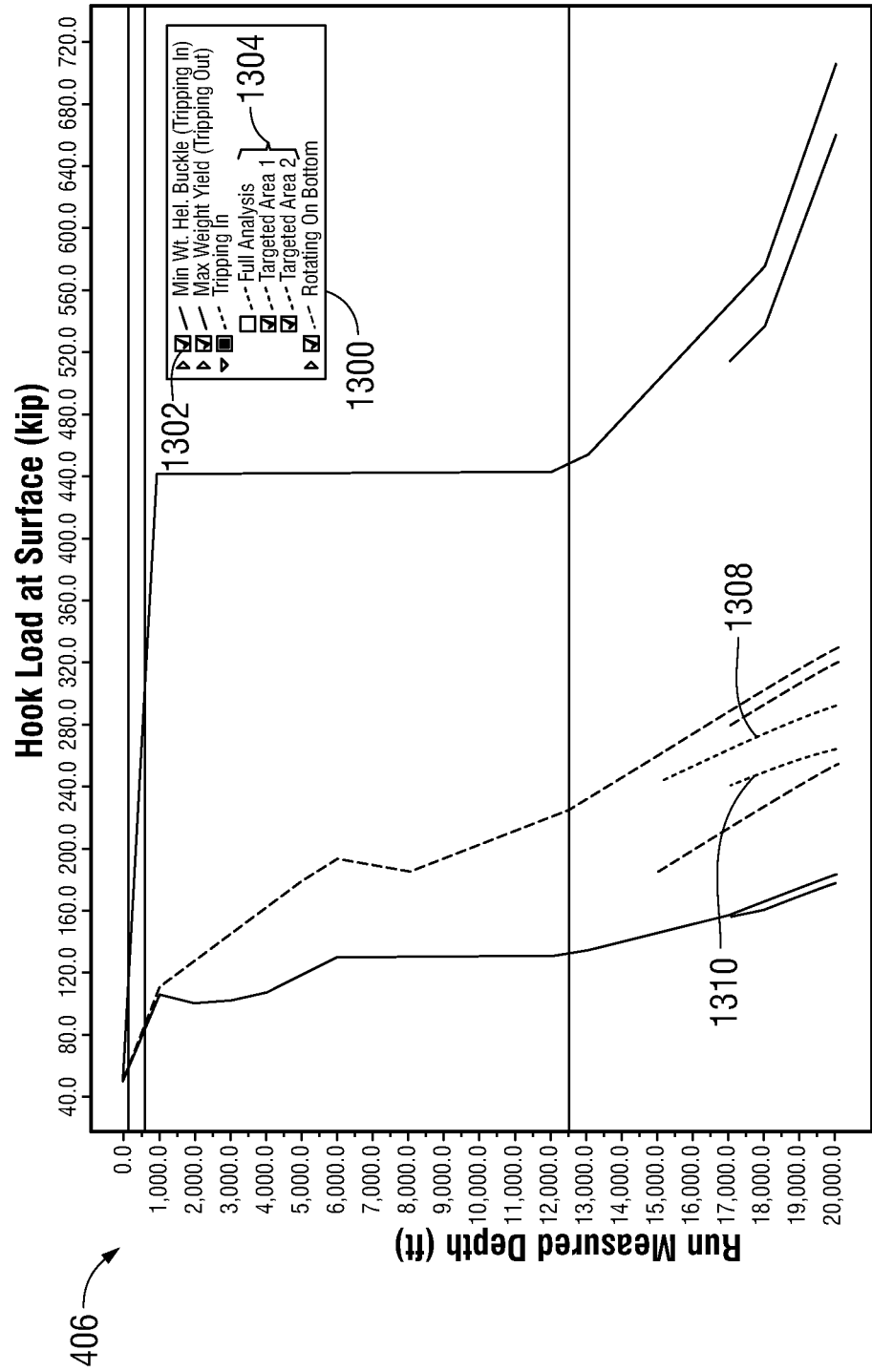


FIG. 15C

400

FIG. 16A	FIG. 16C	FIG. 16B
<u>402</u>	<u>406</u>	<u>404</u>

FIG. 16

402

Operational Parameters 410

Depth Range Manager

	Start Depth (ft)	End Depth (ft)	Description	Enabled
1	0.0	20,000.0	Full Analysis	☒
2	15,000.0	20,000.0	Targeted Area 1	☒
3	17,000.0	20,000.0	Targeted Area 2	☒

412

414

▲ Common

-Operational Pump Rate _____

Pump rate: gpm

▲ Torque & Drag

-Drilling Operations _____

- ☒ Tripping In _____

Speed: ft/min RPM: rpm

- ☐ Tripping Out _____

Speed: ft/min RPM: rpm

- ☒ Rotating On Bottom _____

WOB: kip Torque at bit: ft-lbf

- ☐ Side Drilling _____

WOB: kip Torque at bit: ft-lbf

- ☐ Backreaming _____

WOB: kip Torque at bit: ft-lbf

- ☐ Rotating Off Bottom _____

416

FIG. 16A

404 → **Analysis Settings**

▲ Common 420

-Run Parameters _____

Step size: ft

-Calculation Options _____

Sea water density: ppg

▲ Torque & Drag 422

☒ Actual Load Values

-Hook Load/Weight-Indicator Correction _____

Block weight: kip

☐ Use sheave friction correction

Lines strung:

Mechanical efficiency: %

-Analytical Method _____

☐ Use Bending Stress Magnification

-String Analysis Model _____

☐ Use stiff string ⓘ

Drag chart calculations using stiff string:
About 2 minutes

☐ Use viscous torque and drag ⓘ

Buckling limit factor: % ⓘ

-Maximum Overpull _____

using % of yield: %

-Fluid Column _____

☐ Use fluid column gradient ⓘ

FIG. 16B

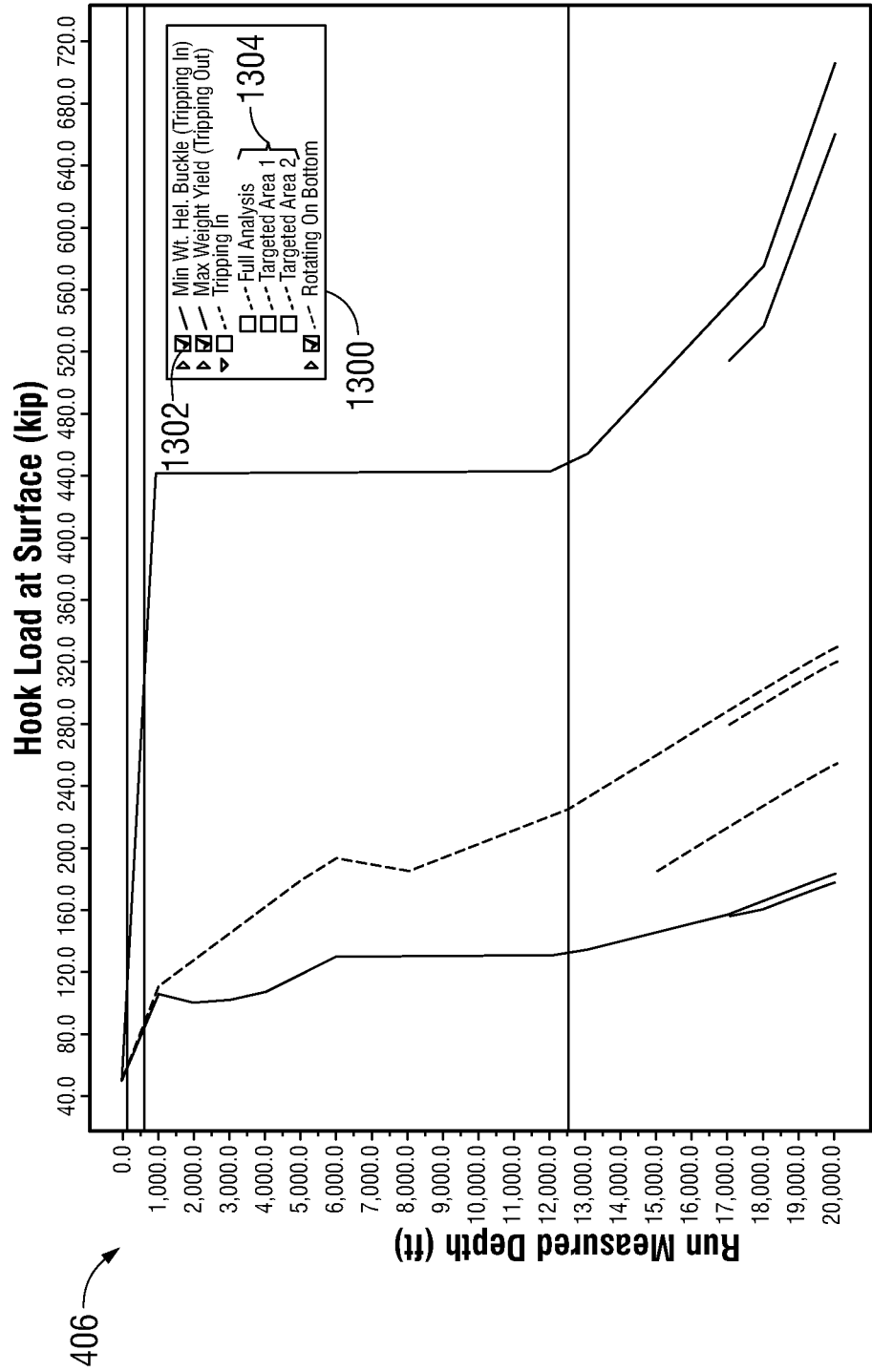


FIG. 16C

400

FIG. 17A	FIG. 17C	FIG. 17B
<u>402</u>	<u>406</u>	<u>404</u>

FIG. 17

402

Operational Parameters 410

Depth Range Manager

	Start Depth (ft)	End Depth (ft)	Description	Enabled
1	0.0	20,000.0	Full Analysis	☒
2	15,000.0	20,000.0	Targeted Area 1	☒
3	17,000.0	20,000.0	Targeted Area 2	☒

412

414

▲ Common

-Operational Pump Rate _____

Pump rate: gpm

▲ Torque & Drag

-Drilling Operations _____

- ☒ Tripping In _____

Speed: ft/min RPM: rpm

- ☐ Tripping Out _____

Speed: ft/min RPM: rpm

- ☒ Rotating On Bottom _____

WOB: kip Torque at bit: ft-lbf

- ☐ Side Drilling _____

WOB: kip Torque at bit: ft-lbf

- ☐ Backreaming _____

WOB: kip Torque at bit: ft-lbf

- ☐ Rotating Off Bottom _____

416

FIG. 17A

404 → **Analysis Settings**

▲ Common

-Run Parameters

Step size: ft

-Calculation Options

Sea water density: ppg

▲ Torque & Drag

☒ Actual Load Values

-Hook Load/Weight-Indicator Correction

Block weight: kip

☐ Use sheave friction correction

Lines strung:

Mechanical efficiency: %

-Analytical Method

☐ Use Bending Stress Magnification

-String Analysis Model

☐ Use stiff string ⓘ
Drag chart calculations using stiff string:
About 2 minutes

☐ Use viscous torque and drag ⓘ

Buckling limit factor: % ⓘ

-Maximum Overpull

using % of yield: %

-Fluid Column

☐ Use fluid column gradient ⓘ

FIG. 17B

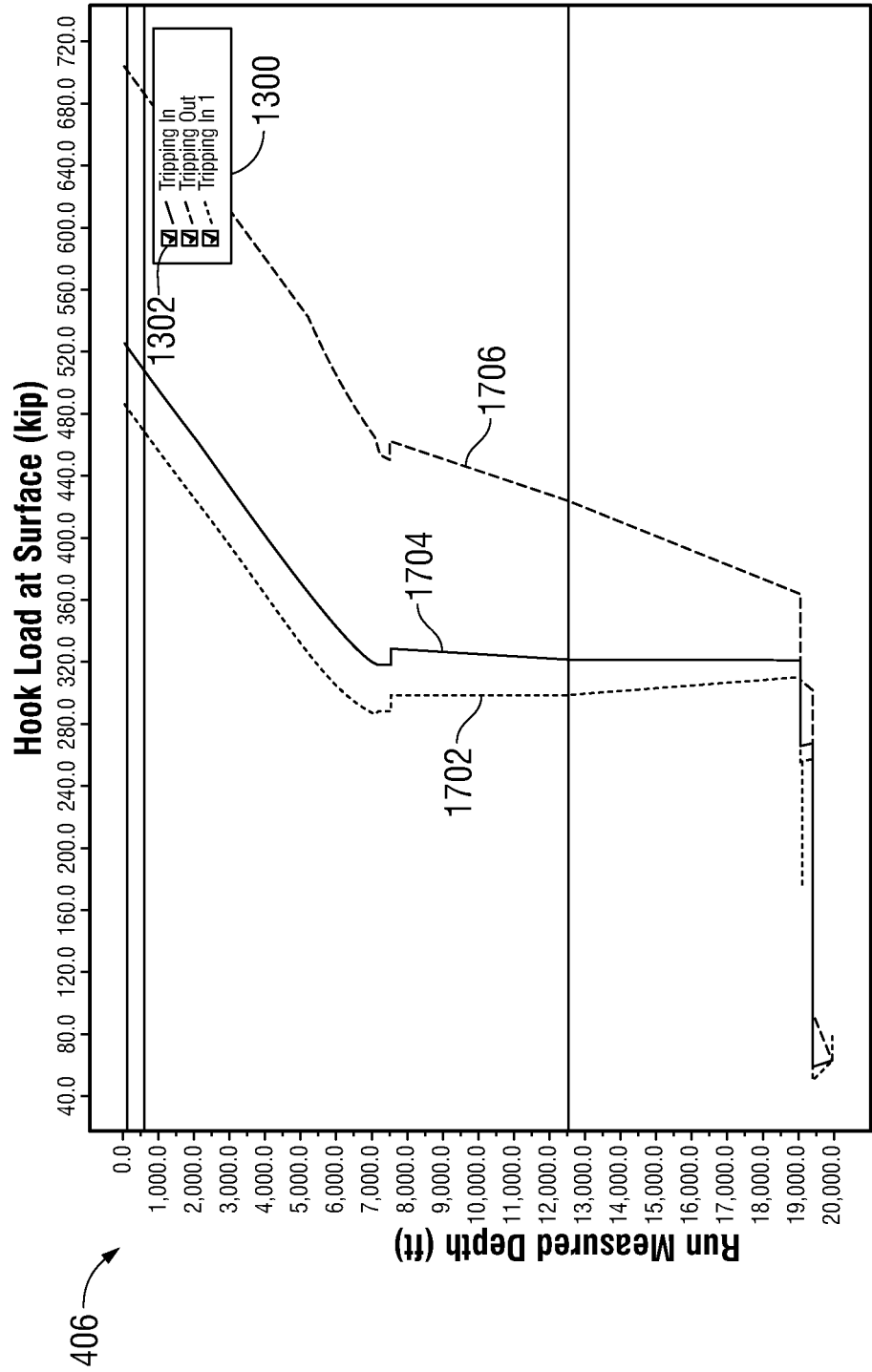
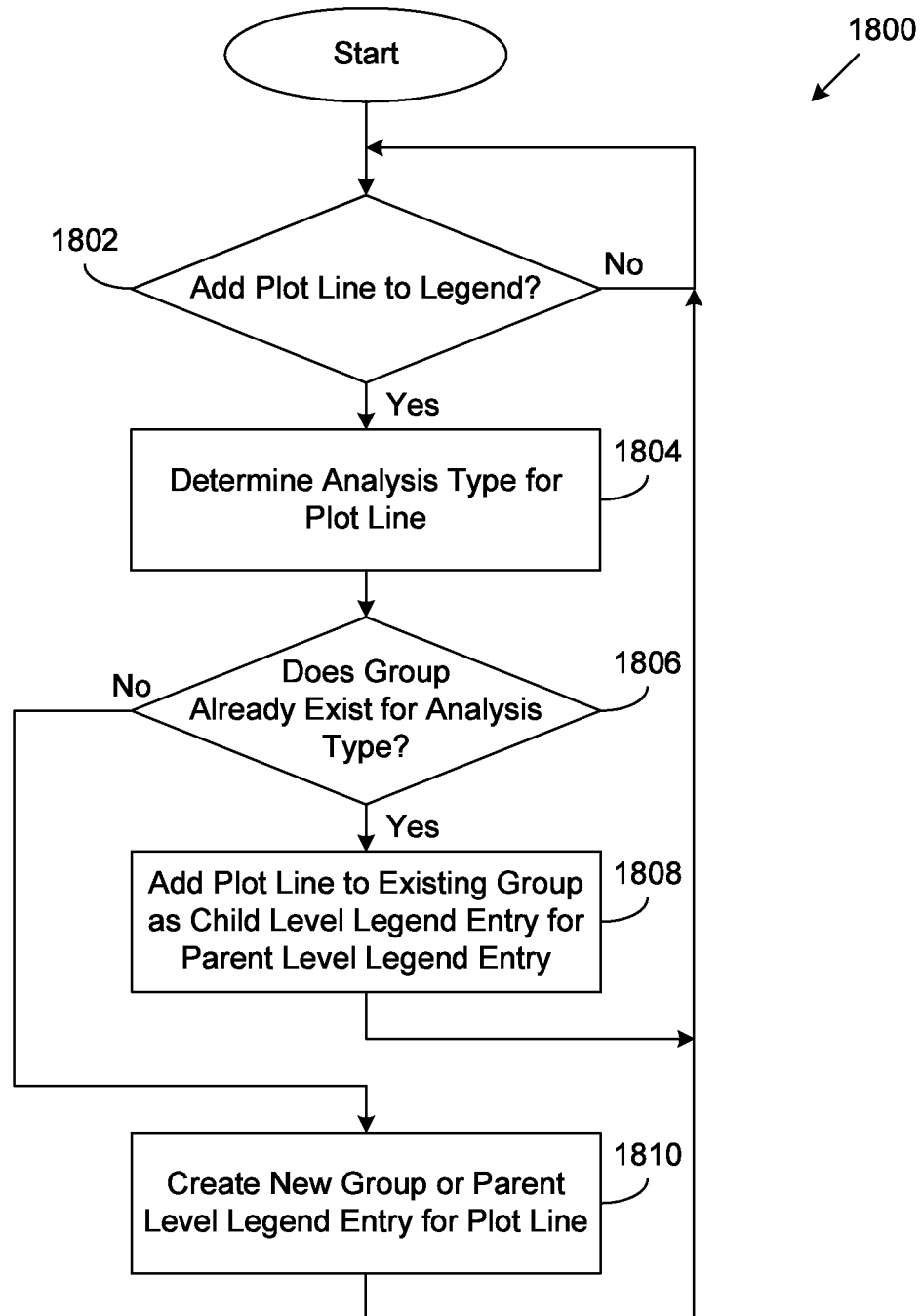


FIG. 17C

**FIG. 18**