



IADC/SPE International Drilling
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SPE-199644-MS New Version of IADC Daily Drilling Report Increases Granularity, Provides Opportunity to Automate & Collaborate Using a Common Digital Format

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De Ward & Company; Linda Hsieh, IADC





Outline

- What is the IADC DDR, and what is it used for?
- Why did it need updating?
- What was the process?
- Two main demands from IADC Members
- How were these demands fulfilled?
- How is the DDR Plus being used now?
- What is the future?



Why did the IADC DDR Need Updating?

- Had not been meaningfully updated in decades
- Opportunities lost to integrate the report in to the modern well construction process

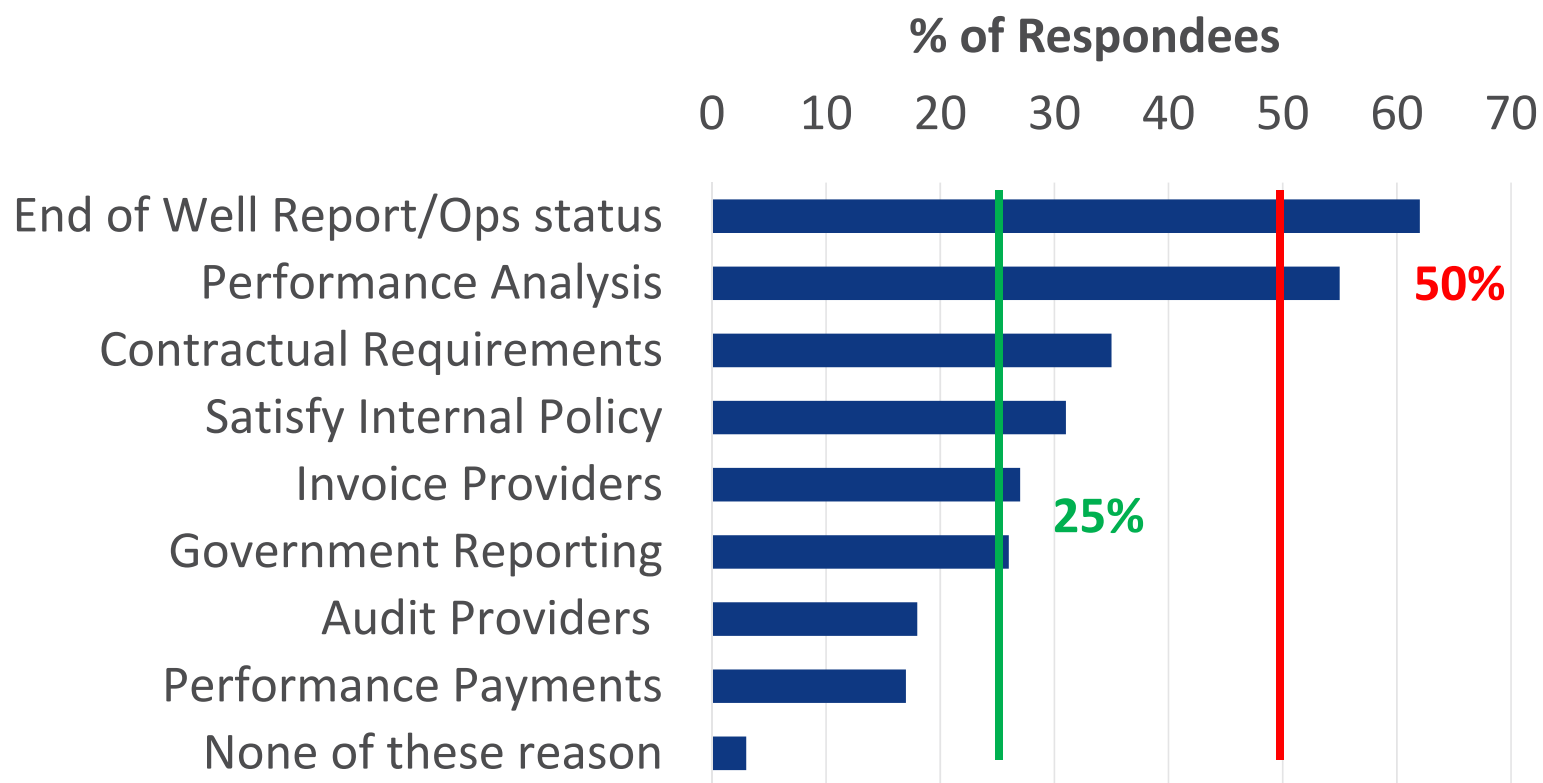
What was the first step?

- Industry survey with over 100 responses.
 - How is the DDR being used?
 - What needs improving?

Who Responded?

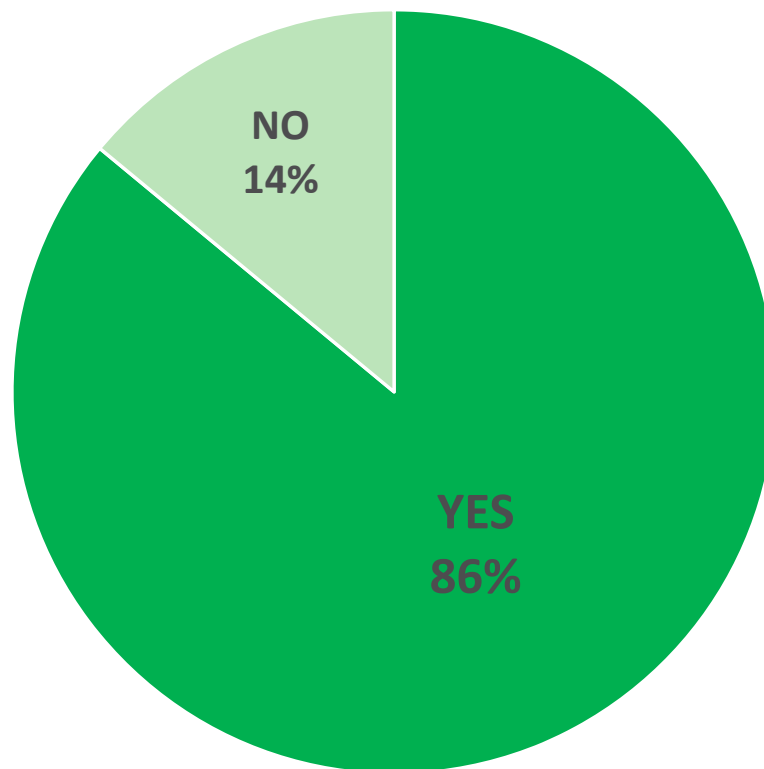
| | No. Responses | Unique Companies |
|----------------------------|---------------|------------------|
| Drilling Contractors | 78 | 29 |
| Operators | 21 | 17 |
| Service companies | 16 | 12 |
| OEM | 4 | 4 |
| Data Acquisition Companies | 3 | 3 |
| Other | 11 | 11 |

Q1. How do you use the IADC DDR form?



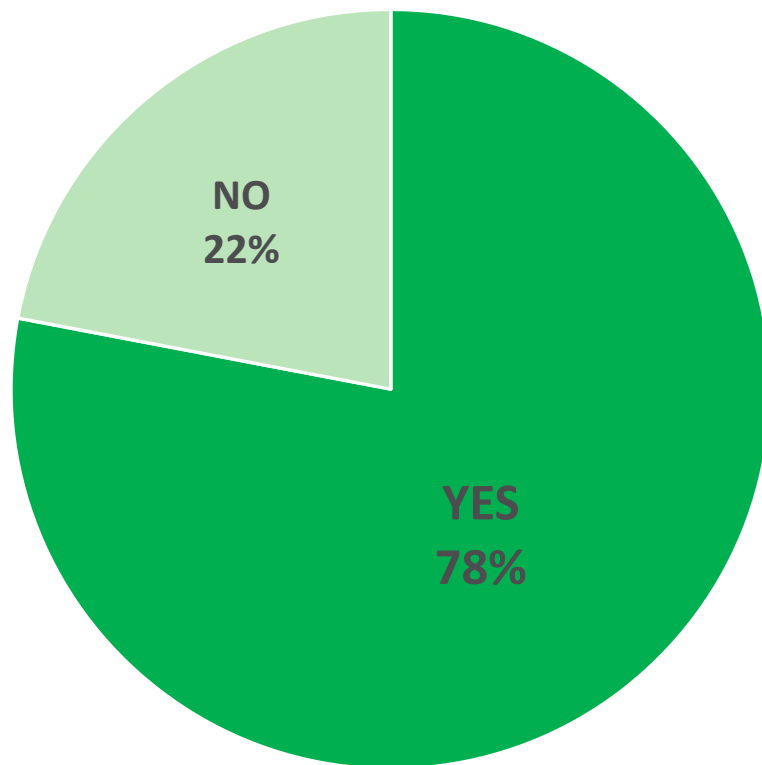
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Q 11. Standard way to import data, automated reporting?



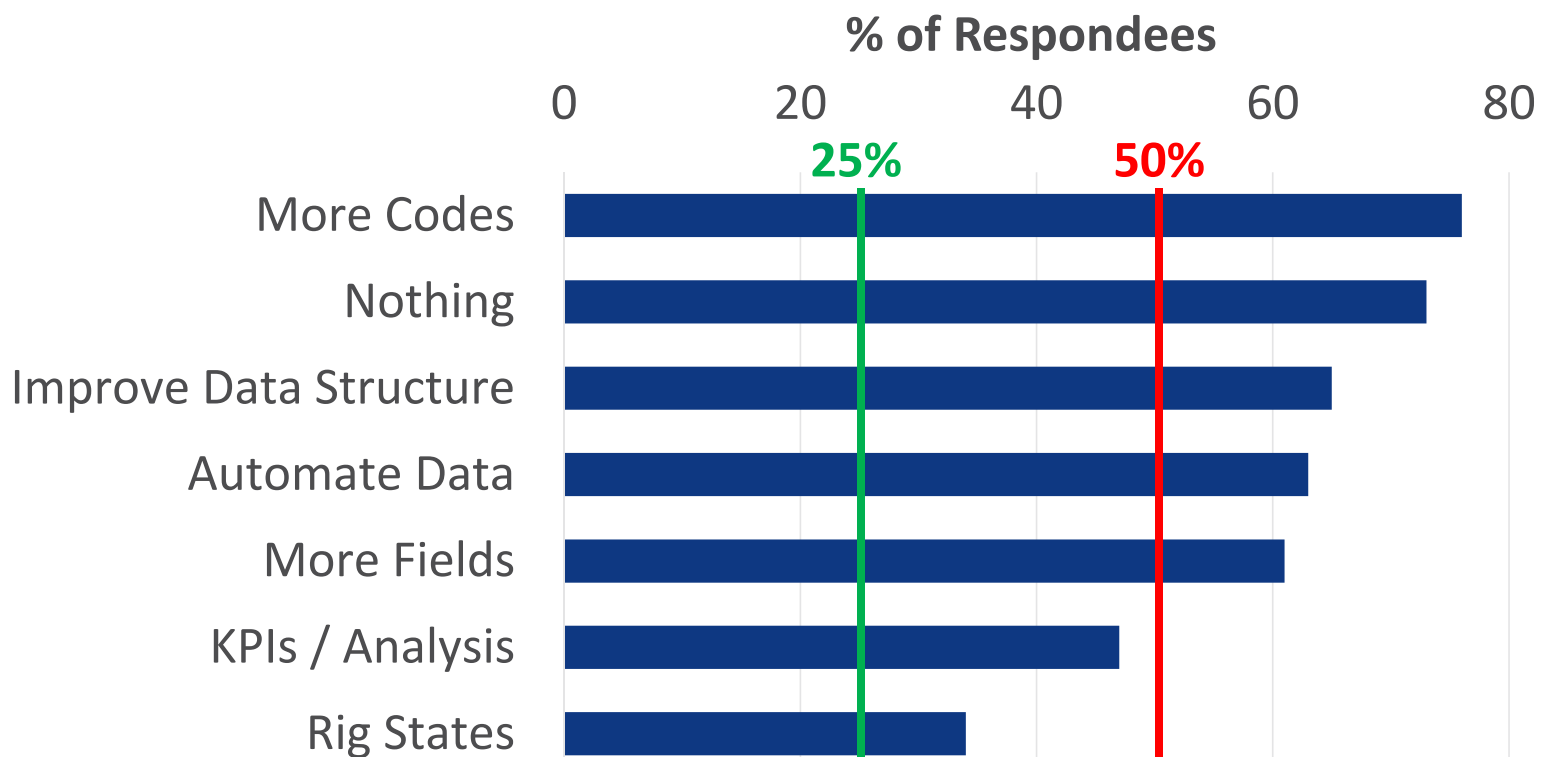
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Q 12. 'Rig State Engines' to complete automatically?



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Q 15a. What needs to be changed for your company?



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Change with the Times

Digitalize and Automate

- Easy data flow in and out
- Automatic data input using **rig states**

Update Codes

- More codes
- Update Activity descriptions
- Add sub-codes

| No. | | DAILY DRILLING REPORT | | | | | | | | | | REPORT NO. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|------------------------|--|-----------------|-------|----------------|-----------------|-----------------|--|---------------------------------------|------------------|----------------------|--|---------------|--|-------------------|--------------------|-------------------|--|----------------------|----------------|--------------------|--|--------------------|--|-------------------|---------------|------------------|--|---------------|--|---------------------|--|---------------|--|--------------------|------------------------|-------------|--|------------------------------|--|---------------------|--|----------------------|--|---------|----------------|--------|--|------|--|--------|--|
| LEASE | | WELL NO. | | | | | API WELL NUMBER | | | | | WATER DEPTH | | | | | DATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OPERATOR | | CONTRACTOR | | | | | | | | | | RIG NO. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIGNATURE OF OPERATOR'S REPRESENTATIVE | | | | | | | | | | SIGNATURE OF CONTRACTOR'S TOOL PUSHER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D.P. SIZE | | WEIGHT | | GRADE | | TOOL JOINT | | TYPE | | THREAD | | STRIKES | | PUMP NO. | | PUMP MANUFACTURER | | TYPE | | STROKE LENGTH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FIELD OR DISTRICT | | COUNTY | | | STATE | | | COUNTRY | | | WIRE LINE RECORD | | | | | REEL NO. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LAST LOGGING TIME ON LINE | | SIZE | | MAKE | | WEIGHT & GRADE | | SOIL JOINTS | | LENGTH | | RIG TO LOG NO. | | SET AT | | REEL NO. | | | | | LENGTH SHIPPED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DRILLING CREW PAYROLL DATA | | DATE | | WELL NAME & NO. | | COMPANY | | TOOLPUSHER | | RIG NO. | | NIGHT TOUR | | | | | FROM | | | | | TO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TIME DISTRIBUTION - HOURS | | DRILLING ASSEMBLY | | | | | BIT RECORD | | | | | MUD RECORD | | | | | DEPTH INTERVAL | | | | | DEVIATION RECORD | | | | | TIME LOG | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CODE NO. - OPERATION | | NIGHT | | DAY | | NO. | | ITEM | | LENGTH | | BIT NO. | | TIME | | WEIGHT | | PRESSURE GRADIENT | | MANUFACTURER | | TYPE | | PUMP | | JETS | | FLUID LOSS | | TFA | | PH | | SOLIDS | | DEPTH OUT | | DEPTH IN | | TOTAL DRILLED | | TOTAL HOURS | | MUD & CHEMICALS USED | | TYPE | | AMOUNT | | TYPE | | AMOUNT | |
| 1. TIE UP | | 2. TIE DOWN | | 3. DRILLING | | 4. CORING | | 5. CONDITIONING | | 6. CIRCULATE | | 7. TRIPS | | 8. REPAIR RIG | | 9. D.P. ON | | 10. DRILLING LINE | | 11. DEVIATION SURVEY | | 12. WIRE LINE LOSS | | 13. PACKING CEMENT | | 14. WAF ON CEMENT | | 15. WAF OFF D.P. | | 16. TEST D.P. | | 17. DRILL STEM TEST | | 18. PLUG BACK | | 19. SQUEEZE CEMENT | | 20. FISHING | | 21. RUN/RETRIEVE/REGR EQUIP. | | 22. SURFACE TESTING | | 23. | | 24. | | 25. | | | | | |
| TOTALS | | DAYS/WORK TIME SUMMARY | | | | | OFFICE USE ONLY | | | | | HOURS W/ CONTR. D.P. | | | | | HOURS W/ OPS. D.P. | | | | | HOURS WITHOUT D.P. | | | | | HOURS STANDBY | | | | | TOTAL DAYWORK | | | | | NO. OF DAYS FROM START | | | | | DAILY MUD COST | | | | | TOTAL MUD COST | | | | | | |
| REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | REMARKS | | | | | | | |

SPE-19964-MS 'New Version of IADC Daily Drilling Report Significantly Increases Granularity, Provides Opportunity to Collaborate Using a Common Digital Format' David Shackleton, Independent Data Services

No. 3174556 DAILY DRILLING REPORT REPORT NO.

| | | | | |
|--|----------------------------|---------------------------------------|--------------|---------------|
| LEASE | WELL NO. | BIT WELL NUMBER | WATER DEPTH | REPORT DATE |
| OPERATOR | | CONTRACTOR | | FIG NO. |
| SIGNATURE OF OPERATOR'S REPRESENTATIVE | | SIGNATURE OF CONTRACTOR'S RIG MANAGER | | |
| DP. SIZE | WEIGHT | GRADE | TOOL JT. CD. | TYPE THREAD |
| STRING NO. | PUMP NO. | PUMP MANUFACTURER | TYPE | STROKE LENGTH |
| FIELD OR DISTRICT | | | | |
| STATE | | COUNTRY | | |
| WIRE LINE RECORD | | ROD NO. | | |
| SIZE | NO. LINES | LENGTH SUPPLIED | | |
| LENGTH OUT OFF | PRESENT LENGTH | | | |
| WELLS OR TUBES | SIZES LAST LOG | | | |
| LAST CHANGING TURNING ON LINE | CALCULATED WEIGHT OF TUBES | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|--|------------------------------------|---------------|------------|---------------|------------------------|-----------------------------|----------------|----------------|-----------|-----------|--------------------|--------------------------------|--------------------|------------|---------------|------------|------------|------------|------------|-------------------|------------|------------|------------|-----------------------|-------------------|-----|-----------------------|---------------------------|--------------------|---------------|-----------|---------------|------------------------|-----------------------------|----------------|----------------|
| TIME DISTRIBUTION - HOURS | | DRILLING ASSEMBLY (At end of tour) | | BIT RECORD | | MUD RECORD | | DEPTH INTERVAL | | FORMATION | | ROTARY TABLE SPEED | | WT. ON BIT | | PUMP PRESSURE | | PUMP NO. 1 | | PUMP NO. 2 | | PUMP NO. 3 | | PUMP NO. 4 | | TOTAL PUMP OUTPUT | | TOUR 1 | | FROM | | TO | | BLANKED ON THIS TOUR? | | | |
| 1. TD OF TIGHT DOWN PRODUCE | 1 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | FROM | TO | DRILL NO. | CORE NO. | FORMATION (SHOW CORE RECOVERY) | ROTARY TABLE SPEED | WT. ON BIT | PUMP PRESSURE | PUMP NO. 1 | PUMP NO. 2 | PUMP NO. 3 | PUMP NO. 4 | TOTAL PUMP OUTPUT | TOUR 1 | FROM | TO | BLANKED ON THIS TOUR? | | | | | | | | | | | | |
| 2. DRILLING | 2 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 3. HEAVING | 3 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 4. CORING | 4 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 5. SPECIALTY CONNECTION MUD | 5 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 6. TAMP | 6 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 7. STOPPING/STARTING BIT | 7 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 8. TIGHTENING | 8 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 9. TIGHTENING DRILL LINE | 9 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 10. DEVIATION SURVEY | 10 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 11. WIRELINE LOSS | 11 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 12. RUN CABLES TO GROUND | 12 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 13. KELLY DOWN | 13 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 14. WAT ON CEMENT | 14 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 15. WAT OFF DOWN | 15 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 16. TEST BOP | 16 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 17. DRILL STEM TEST | 17 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 18. PULLBACK | 18 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 19. SOLUBLE COMMENT | 19 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 20. FISHING | 20 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 21. SPECIAL USE CONNECTION WORK | 21 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 22. BLIND TRIP | 22 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 23. SURFACE TESTING | 23 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 24. OTHER | 24 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 25. NON PRODUCTIVE TIME | 25 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 26. OPERATING STATUS | 26 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 27. SAFETY | 27 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 28. WELL CONTROL | 28 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 29. CORED TUBING | 29 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 30. RECORDING | 30 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 31. TURNING TUBS | 31 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 32. TREATING TUBING CONNECTION | 32 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 33. SHAKING | 33 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 34. TESTING | 34 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| 35. SURFACE TESTS | 35 | NO. | ITEM | O.D. | LENGTH | BIT NO. | TIME | SIZE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | DEPTH | SEV. | DIR. | TVD | FORM. CODE | CREW | EMPL. ID NO. | NAME | HR. | SIGNATURE | YES OR NO | | | |
| TOTALS | <table border="1"> <tr> <td>HOURS IN CONTACT D.P.</td> <td>HOURS IN CONTACT W/O D.P.</td> <td>HOURS WITHOUT D.P.</td> <td>HOURS STANDBY</td> <td>WELLS HR.</td> <td>TOTAL DAYWORK</td> <td>NO. OF DAYS FROM WELLS</td> <td>COMPLETION INDICATING WELLS</td> <td>DAILY MUD COST</td> <td>TOTAL MUD COST</td> </tr> </table> | | | | | | | | | | | | | | | | | | | | | | | | | | | HOURS IN CONTACT D.P. | HOURS IN CONTACT W/O D.P. | HOURS WITHOUT D.P. | HOURS STANDBY | WELLS HR. | TOTAL DAYWORK | NO. OF DAYS FROM WELLS | COMPLETION INDICATING WELLS | DAILY MUD COST | TOTAL MUD COST |
| HOURS IN CONTACT D.P. | HOURS IN CONTACT W/O D.P. | HOURS WITHOUT D.P. | HOURS STANDBY | WELLS HR. | TOTAL DAYWORK | NO. OF DAYS FROM WELLS | COMPLETION INDICATING WELLS | DAILY MUD COST | TOTAL MUD COST | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

APPROVED IADC PRINTED IN U.S.A.

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APPROVED IADC

No. 3174556

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No. 3174556

SPE-19964-MS 'New Version of IADC Daily Drilling Report Significantly Increases Granularity, Provides Opportunity to Collaborate Using a Common Digital Format'
David Shackleton, Independent Data Services

No. 3174556

DAILY DRILLING REPORT REPORT NO.

LEASE WELL NO. AIR WELL NUMBER WATER DEPTH REPORT DATE

OPERATOR CONTRACTOR FIG NO.

SIGNATURE OF OPERATOR'S REPRESENTATIVE SIGNATURE OF CONTRACTOR'S FIG MANAGER

FIELD OR DISTRICT COUNTY STATE/COUNTRY WIRE LINE RECORD REEL NO.

SIZE MAKE WEIGHT & GRADE NO. JOINTS LENGTH JOBS TO JOBS NO. SET AT TYPE SIZE NO. LINES LENGTH SLIPPED

START DATE OF TOUR 1

WELL NAME & NO.

COMPANY

FIG MANAGER FIG NO.

DRILLING CREW PAYROLL DATA

| TOUR 1 | FROM | TO | BLUESHIRT ON THIS TOUR | | |
|--------|--------------|------|------------------------|-----------|-----------|
| | | | YES | NO | |
| CREW | EMPL. ID NO. | NAME | HRS. | SIGNATURE | YES OR NO |
| | | | | | |

NO. OF DAYS SINCE LAST LOST TIME ACCIDENT DBM (YES/NO)

TIME DISTRIBUTION - HOURS

| CODE - OPERATION NO. | 1 | 2 |
|---|---|---|
| 1. PULL UP / TEAR DOWN LANCE | | |
| 2. DRILLING | | |
| 3. FREAMING | | |
| 4. CORING | | |
| 5. SPECIALIZE & CONDITION MUD | | |
| 6. TRIP | | |
| 7. SERVICE/MAINTAIN RIG | | |
| 8. REPAIR RIG | | |
| 9. REPLACING DRILL LINE | | |
| 10. ELEVATION SURVEY | | |
| 11. WIRELINE LOGS | | |
| 12. RUN CASING & CEMENT | | |
| 13. WAIT ON CEMENT | | |
| 14. BULL UP / DOWN ROP | | |
| 15. TEST ROP | | |
| 16. DRILL STEM TEST | | |
| 17. PLUG BACK | | |
| 18. SOURCE CEMENT | | |
| 19. FISHING | | |
| 20. SPECIALIZED SERVICES OTHER WORK | | |
| 21. OTHER | | |
| 22. OTHER | | |
| 23. OTHER | | |
| 24. SURFACE TESTING | | |
| 25. OPERATING STATUS | | |
| 26. SAFETY | | |
| 27. WELL CONTROL | | |
| 28. COILED TUBING | | |
| 29. DOWN-STRING ACTIVITIES | | |
| 30. RIGGING INSTALLATIONS | | |
| TOTALS | | |
| DAYWORK TIME SUMMARY (EXCLUDE LOG ONLY) | | |
| HOURS WORKING D.P. | | |
| HOURS WORKING W/O D.P. | | |
| HOURS STANDBY | | |
| BULLER HRS | | |
| TOTAL DAYWORK | | |
| DAILY MUD COST | | |
| TOTAL MUD COST | | |

DRILLING ASSEMBLY / BHA (AT END OF TOOL)

| NO. | ITEM | O.D. | LENGTH | BIT RECORD | | MUD RECORD | |
|-----|------|------|--------|------------|------|------------|---------------|
| | | | | BIT NO. | TIME | WEIGHT | PRECIPITATION |
| | | | | | | | |

DEPTH INTERVAL

| FROM | TO | DRILLER'S CODE NO. | FORMATION (SHOW CODE RECOVERY) | SPM | WT. ON BIT | PUMP PRESSURE | MP 1 LINE SIZE S.P.M. | MP 2 LINE SIZE S.P.M. | MP 3 LINE SIZE S.P.M. | MP 4 LINE SIZE S.P.M. | TOTAL PUMP OUTPUT |
|------|----|--------------------|--------------------------------|-----|------------|---------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------|
| | | | | | | | | | | | |

DEVIATION RECORD

| DEPTH | DEV. | DIR. | TVD | HORIZ. DEPT. | DEPTH | DEV. | DIR. | TVD | HORIZ. DEPT. |
|-------|------|------|-----|--------------|-------|------|------|-----|--------------|
| | | | | | | | | | |

DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS

NO. OF DAYS SINCE LAST LOST TIME ACCIDENT DBM (YES/NO)

SPE-19964-MS 'New Version of IADC Daily Drilling Report Significantly Increases Granularity, Provides Opportunity to Collaborate Using a Common Digital Format' David Shackleton, Independent Data Services



The New DDR Plus – updates to paper format

No. 3174556

| DAILY DRILLING REPORT | | | | | | | | | | REPORT NO. | | | | | | | | | | | | | | | | | | | | |
|--|--------|-------|--------------|-------------|---------------------------------------|--|-----------------|-----------|--------|------------------------|--|-------------|-----------------------------|-------------------|------------------|---|-------|----------------|--------------|-------------------------|---------------------|--------------------------------|----------------------|--------|----------------|----|--|--|--|--|
| LEASE | | | | | WELL NO. | | API WELL NUMBER | | | WATER DEPTH | | REPORT DATE | | | | | | | | | | | | | | | | | | |
| OPERATOR | | | | | CONTRACTOR | | | | | RIG NO. | | | | | | | | | | | | | | | | | | | | |
| SIGNATURE OF OPERATOR'S REPRESENTATIVE | | | | | SIGNATURE OF CONTRACTOR'S RIG MANAGER | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | FIELD OR DISTRICT | | | | | COUNTY | | | | | STATE / COUNTRY | | | | | | | | | | | | | | | |
| D.P. SIZE | WEIGHT | GRADE | TOOL JT O.D. | TYPE THREAD | STRING NO. | NO. OF DAYS FROM SPUD | | FUEL USED | | MUD PUMP STROKE LENGTH | | | LAST CASING TUBING OR LINER | | | | | SIZE | MAKE | WEIGHT & GRADE | NO. JOINTS | LENGTH | RKB. TO OSG. HD. | SET AT | T | | | | | |
| | | | | | | | | | | MP1 | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | MP2 | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | MP3 | | | | | | | | | | | | | | | | | | | | |
| | | | | | CUMULATIVE ROTATING HOURS | | FUEL ON HAND | | MP4 | | | | | | | | | | | | | | | | | | | | | |
| DATE | | | TIME | | | DRILLING ASSEMBLY / BHA (At end of tour) | | | | BIT RECORD | | | | MUD RECORD | | | | DEPTH INTERVAL | | DRILL.D REAM..R CORE..C | CORE NO. | FORMATION (SHOW CORE RECOVERY) | | RPM | WT. ON BIT | PP | | | | |
| SPUD | | | | | | NO. | ITEM | O.D. | LENGTH | BIT NO. | | | | TIME | | | | | FROM | TO | | | | | | | | | | |
| RIG RELEASE | | | | | | | BIT | | | SIZE | | | | WEIGHT | | | | | | | | | | | | | | | | |
| PAUSE | | | | | | | | | | IADC CODE | | | | PRESSURE GRADIENT | | | | | | | | | | | | | | | | |
| RESUME | | | | | | | | | | MANUFACTURER | | | | FUNNEL VISCOSITY | | | | | | | | | | | | | | | | |
| TD | | | | | | | | | | TYPE | | | | PV/YP | / | / | / | | | | | | | | | | | | | |
| TIME DISTRIBUTION - HOURS | | | | | | | | | | SERIAL NO. | | | | GEL STRENGTH | / | / | / | | | | | | | | | | | | | |
| CODE - OPERATION NO. | | 1 | | 2 | | | | | | JETS | | | | FLUID LOSS | | | | | | | | | | | | | | | | |
| 1. RIG UP / TEAR DOWN / MOVE | | | | | | | | | | TFA | | | | pH | | | | | | | | | | | | | | | | |
| 2. DRILLING | | | | | | | | | | DEPTH OUT | | | | SOLIDS | | | | | | | | | | | | | | | | |
| 3. REAMING | | | | | | | | | | DEPTH IN | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | DEVIATION RECORD | | DEPTH | DEV. | DIR. | TVD | HORIZ DISP. | DEPTH | DEV. | | | | | | | |
| | | | | | | | | | | | | | | | TIME LOG | | FROM | TO | ELAPSED TIME | CODE NO. | ACTIVITY & SUB CODE | | EQUIPMENT & SUB CODE | | DETAILS OF OPE | | | | | |

SPE-199664-MS 'New Version of IADC Daily Drilling Report Significantly Increases Granularity, Provides Opportunity to Collaborate Using a Common Digital Format'
David Shackleton, Independent Data Services

The New DDR Plus – updates to paper format

No. 3174556

DAILY DRILLING REPORT REPORT NO.

| | | | | | | | | | | | | | | | | | | | |
|--|--------|---------------------------|--------------|---------------------------------------|------------|------------------------|-----------|------------------------|--|-----------------------|------|----------------------|----------------|------------------------------|--------|----------------------|--------|----------------|--|
| LEASE | | WELL NO. | | API WELL NUMBER | | WATER DEPTH | | REPORT DATE | | | | | | | | | | | |
| OPERATOR | | | | CONTRACTOR | | | | RIG NO. | | | | | | | | | | | |
| SIGNATURE OF OPERATOR'S REPRESENTATIVE | | | | SIGNATURE OF CONTRACTOR'S RIG MANAGER | | | | FIELD OR DISTRICT | | COUNTY | | STATE / COUNTRY | | | | | | | |
| D.P. SIZE | WEIGHT | GRADE | TOOL JT.O.D. | TYPE THREAD | STAINS NO. | NO. OF DAYS FROM SPUD | FUEL USED | MUD PUMP STROKE LENGTH | | LAST CASING TUBING OR | SIZE | MAKE | WEIGHT & GRADE | NO. JOINTS | LENGTH | RKB. TO OSG. HD. | SET AT | T | |
| | | | | | | | | MP1 | | | MP2 | | | | | | | | |
| DATE | | NO. OF DAYS FROM SPUD | | FUEL USED | | MUD PUMP STROKE LENGTH | | RPM | | WT. ON BIT | | PP | | HORIZ. DISP. | | DEPTH | | DEV. | |
| SPUD | | RIG RELEASE | | PAUSE | | RESUME | | TD | | TIME DISTRIBUTION | | CODE - OPERATION NO. | | 1. RIG UP / TEAR DOWN / MOVE | | 2. DRILLING | | 3. REAMING | |
| TIME DISTRIBUTION | | CUMULATIVE ROTATING HOURS | | FUEL ON HAND | | MUD PUMP STROKE LENGTH | | MP1 | | MP2 | | MP3 | | MP4 | | EQUIPMENT & SUB CODE | | DETAILS OF OPE | |

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| DAILY DRILLING REPORT | | | | | | | | | | REPORT NO. | | | | | | | | | | | | | | | | |
|--|----------------------|------------|----------|---------------------------|--|------------|-----------------------|----------------|------------------------|-----------------------------|------------------|-------------------|--------------|------------------|--------------------------|-------------|--------------------------------|------------|------------|--------------|----------|---------------------|----------------------|---------------------|----------------------|----------------|
| LEASE | | | WELL NO. | | API WELL NUMBER | | | WATER DEPTH | | REPORT DATE | | | | | | | | | | | | | | | | |
| OPERATOR | | | | | CONTRACTOR | | | | | RIG NO. | | | | | | | | | | | | | | | | |
| SIGNATURE OF OPERATOR'S REPRESENTATIVE | | | | | SIGNATURE OF CONTRACTOR'S RIG MANAGER | | | | | FIELD OR DISTRICT | | | | | | | | | | | | | | | | |
| D.P. SIZE | | WEIGHT | GRADE | TOOL JT.O.D. | TYPE THREAD | STRING NO. | NO. OF DAYS FROM SPUD | FUEL USED | MUD PUMP STROKE LENGTH | LAST CASING TUBING OR LINER | STATE / COUNTRY | | | | | | | | | | | | | | | |
| MP1 | MP2 | MP3 | MP4 | CUMULATIVE ROTATING HOURS | FUEL ON HAND | SIZE | MAKE | WEIGHT & GRADE | NO. JOINTS | LENGTH | RKB. TO OSG. HD. | SET AT | T | | | | | | | | | | | | | |
| SPUD | | | DATE | TIME | DRILLING ASSEMBLY / BHA (At end of tour) | | | BIT RECORD | | | MUD RECORD | | | DEPTH INTERVAL | DRILL. D REAM. R CORE. C | CORE NO. | FORMATION (SHOW CORE RECOVERY) | RPM | WT. ON BIT | PF | | | | | | |
| RIG RELEASE | PAUSE | RESUME | TD | NO. | ITEM | O.D. | LENGTH | BIT NO. | SIZE | WEIGHT | IADC CODE | PRESSURE GRADIENT | MANUFACTURER | FUNNEL VISCOSITY | TYPE | PV/YP | GEL STRENGTH | DEPTH FROM | DEPTH TO | ELAPSED TIME | CODE NO. | ACTIVITY & SUB CODE | EQUIPMENT & SUB CODE | DETAILS OF OPE | | |
| TIME DISTRIBUTION - HOURS | CODE - OPERATION NO. | 1 | 2 | JETS | TFA | DEPTH OUT | DEPTH IN | FLUID LOSS | pH | SOLIDS | DEVIATION RECORD | DEPTH | DEV. | DIR. | TVD | HORIZ DISP. | DEPTH | DEV. | TIME LOG | FROM | TO | ELAPSED TIME | CODE NO. | ACTIVITY & SUB CODE | EQUIPMENT & SUB CODE | DETAILS OF OPE |
| 1. RIG UP / TEAR DOWN / MOVE | 2. DRILLING | 3. REAMING | | | | | | | | | | | | | | | | | | | | | | | | |

SPE-199664-MS 'New Version of IADC Daily Drilling Report Significantly Increases Granularity, Provides Opportunity to Collaborate Using a Common Digital Format'
David Shackleton, Independent Data Services

The New DDR Plus - Main Codes

| OLD | NEW DDR Plus |
|-----------------------------|-----------------------------|
| 1 RIG UP AND TEAR DOWN | 1 RIG UP / TEAR DOWN / MOVE |
| 2 DRILL ACTUAL | 2 DRILLING |
| 3 REAMING | 3 REAMING |
| 4 CORING | 4 CORING |
| 5 CONDITION MUD & CIRCULATE | 5 CIRCULATE & CONDITION MUD |
| 6 TRIPS | 6 TRIPS |
| 7 LUBRICATE RIG | 7 SERVICE/MAINTAIN RIG |
| 8 REPAIR RIG | 8 REPAIR RIG |
| 9 CUT OFF DRILLING LINE | 9 REPLACING DRILL LINE |
| 10 DEVIATION SURVEY | 10 DEVIATION SURVEY |
| 11 WIRE LINE LOGS | 11 WIRELINE LOGS |
| 12 RUN CASING & CEMENT | 12 RUN CASING & CEMENT |

The New DDR Plus - Main Codes

| OLD | NEW DDR Plus |
|------------------------------|------------------------------------|
| 13 WAIT ON CEMENT | 13 WAIT ON CEMENT |
| 14 NIPPLE UP B.O.P. | 14 RIG UP/DOWN BOP |
| 15 TEST B.O.P. | 15 TEST BOP |
| 16 DRILL STEM TEST | 16 DRILL STEM TEST |
| 17 PLUG BACK | 17 PLUG BACK |
| 18 SQUEEZE CEMENT | 18 SQUEEZE CEMENT |
| 19 FISHING | 19 FISHING |
| 20 DIR. WORK | 20 SPECIALIZED DIRECTIONAL WORK |
| 21 RUN/RETRIEVE RISER EQUIP. | 21 [UNDEFINED - INTERNAL USE ONLY] |
| 22 SURFACE TESTING | 22 [UNDEFINED - INTERNAL USE ONLY] |
| 23 OTHER | 23 [UNDEFINED - INTERNAL USE ONLY] |
| [unused] | 24 [UNDEFINED - INTERNAL USE ONLY] |

The New DDR Plus - Main Codes

| OLD | NEW DDR Plus |
|----------------|------------------------------------|
| [unused] | 30 [UNDEFINED - INTERNAL USE ONLY] |
| [unused] | 31 RUN/RETRIEVE RISER EQUIP. |
| [unused] | 32 SURFACE TESTING |
| [unused] | 33 OPERATING STATUS |
| [unused] | 34 SAFETY |
| [unused] | 35 WELL CONTROL |
| [unused] | 36 COILED TUBING |
| A PERFORATING | 37 COMPLETION ACTIVITIES |
| B TUBING TRIPS | 37 COMPLETION ACTIVITIES |
| C TREATING | 37 COMPLETION ACTIVITIES |
| D SWABBING | 37 COMPLETION ACTIVITIES |
| E TESTING | 37 COMPLETION ACTIVITIES |
| [unused] | 38 SUBSEA INSTALATIONS |
| [unused] | 39 RESERVED FOR FUTURE IADC USE |

SPE-199664-N

Digital Format



The New DDR Plus – updates to paper format

No. 3174556

DAILY DRILLING REPORT REPORT NO.

| | | | | | | | | | | | | | | | | | | | |
|--|--------|----------|--------------|---------------------------------------|------------|---------------------------|--------------|------------------------|--|-----------------------------|-----------------|------|----------------|------------|--------|------------------|--------|---|--|
| LEASE | | WELL NO. | | API WELL NUMBER | | WATER DEPTH | | REPORT DATE | | | | | | | | | | | |
| OPERATOR | | | | CONTRACTOR | | | | RIG NO. | | | | | | | | | | | |
| SIGNATURE OF OPERATOR'S REPRESENTATIVE | | | | SIGNATURE OF CONTRACTOR'S RIG MANAGER | | | | FIELD OR DISTRICT | | COUNTY | STATE / COUNTRY | | | | | | | | |
| D.P. SIZE | WEIGHT | GRADE | TOOL JT O.D. | TYPE THREAD | STRING NO. | NO. OF DAYS FROM SPUD | FUEL USED | MUD PUMP STROKE LENGTH | | LAST CASING TUBING OR LINER | SIZE | MAKE | WEIGHT & GRADE | NO. JOINTS | LENGTH | RKB. TO OSG. HD. | SET AT | T | |
| | | | | | | | | MP1 | | | | | | | | | | | |
| | | | | | | CUMULATIVE ROTATING HOURS | FUEL ON HAND | MP2 | | | | | | | | | | | |
| | | | | | | | | MP3 | | | | | | | | | | | |
| | | | | | | | | MP4 | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | |
|-------------|--|------|--|----------|----|--------------|--|----------|--|---------------------|--|----------------------|--|-----------------------|--|--------------------------------|--|-----|------------|-----|
| DATE | | TIME | | TIME LOG | | ELAPSED TIME | | CODE NO. | | ACTIVITY & SUB CODE | | EQUIPMENT & SUB CODE | | DETAILS OF OPERATIONS | | FORMATION (SHOW CORE RECOVERY) | | RPM | WT. ON BIT | PPH |
| SPUD | | | | FROM | TO | | | | | | | | | | | | | | | |
| RIG RELEASE | | | | | | | | | | | | | | | | | | | | |
| PAUSE | | | | | | | | | | | | | | | | | | | | |
| RESUME | | | | | | | | | | | | | | | | | | | | |
| TD | | | | | | | | | | | | | | | | | | | | |

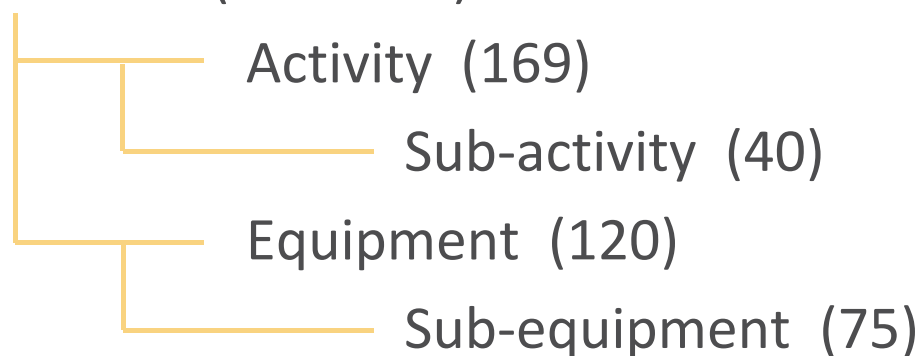
| TIME DISTRIBUTION – HOURS | | | SERIAL NO. | GEL STRENGTH | RECORD |
|------------------------------|---|---|------------|--------------|--------|
| CODE – OPERATION | 1 | 2 | JETS | FLUID LOSS | |
| 1. RIG UP / TEAR DOWN / MOVE | | | TFA | pH | |
| 2. DRILLING | | | DEPTH OUT | SOLIDS | |
| 3. REAMING | | | DEPTH IN | | |

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The New DDR Plus - Granular Code-set

Aim: To fully describe Drilling and Completion operations

Operation (28 codes)



E.g.,

DRILLING





The New DDR Plus - Granular Code-set – Automated

Rig Manager ARM Radio Op. Operator Representative **Driller** AD DSV Derrickman Motorman Admin. Power BI SETUP Help

Rig: IADC Rig Well/Ops: IADC_Well » Hole_01 » IADC_Ops Day: #1 (01 Oct 2019) Datum: 0.0 ft RT GL UOM: API Template

Time Codes - IADC Hours vs. Days Matrix File Manager

Add New Select All Delete Selected 1 Messages

| <input type="checkbox"/> | Start Time | End Time | Hrs. | Codes | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|------------------------|-------------------|------------|--|------------|----------------------|------------|------------|-----------|--------------|-------------------|------------|----------|------------|-----------------|------------|--------------|---------------|----------|---|-----------|-------------------|--|--|-----------|------------------------|--|--|---------------|-----------------|--|--|
| <input type="checkbox"/> | 03:25 | 05:45 | 2.33 h | <table border="1"> <tr><td>Class Code</td><td>Programmed Event (P)</td><td>Hole Depth</td><td>9,434.0 ft</td></tr> <tr><td>Main Code</td><td>02. DRILLING</td><td>String Depth From</td><td>8,867.0 ft</td></tr> <tr><td>Activity</td><td>305. Ahead</td><td>String Depth To</td><td>9,434.0 ft</td></tr> <tr><td>Sub-activity</td><td>090. Rotating</td><td>Trip No.</td><td>1</td></tr> <tr><td>Rate Code</td><td>100.0 % Full Rate</td><td></td><td></td></tr> <tr><td>Equipment</td><td>258. Land Drilling Rig</td><td></td><td></td></tr> <tr><td>Sub-equipment</td><td>065. Drill Pipe</td><td></td><td></td></tr> </table> <p>Fixed Text Remark:Drill Ahead from 8867 ft to 9434 ft with 20 rpm & 2 gpm , 5 psi spp on btm, 5.00 psi off btm, 10.00 klbs WOB.TQ</p> | Class Code | Programmed Event (P) | Hole Depth | 9,434.0 ft | Main Code | 02. DRILLING | String Depth From | 8,867.0 ft | Activity | 305. Ahead | String Depth To | 9,434.0 ft | Sub-activity | 090. Rotating | Trip No. | 1 | Rate Code | 100.0 % Full Rate | | | Equipment | 258. Land Drilling Rig | | | Sub-equipment | 065. Drill Pipe | | |
| Class Code | Programmed Event (P) | Hole Depth | 9,434.0 ft | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Main Code | 02. DRILLING | String Depth From | 8,867.0 ft | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Activity | 305. Ahead | String Depth To | 9,434.0 ft | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sub-activity | 090. Rotating | Trip No. | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rate Code | 100.0 % Full Rate | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Equipment | 258. Land Drilling Rig | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sub-equipment | 065. Drill Pipe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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The New DDR Plus - Common Digital Description

Leaning heavily on established

Well-Site Information Transfer Standard Markup Language

(WITSML) XML Schema

Paper report with digital copy → truly, fundamentally digital report

The New DDR Plus - Common Digital Description

WITSML 1.4

| | | |
|-----------------------|----------------|--------------------|
| » attachment | » log | » surveyProgram |
| » bhaRun | » message | » target |
| » cementJob | » mudLog | » toolErrorModel |
| » changeLog | » objectGroup | » toolErrorTermSet |
| » convCore | » opsReport | » trajectory |
| » coordinateRefSystem | » rig | » tubular |
| » drillReport | » risk | » wbGeometry |
| » fluidsReport | » sidewallCore | » well |
| » formationMarker | » stimJob | » wellbore |

iadcDdrPlus

The New DDR Plus - Common Digital Description

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  <operatorPersonnel>Jane Doe</operatorPersonnel>  
  <operatorSigned>1</operatorSigned>  
  <contractorCompany>ABC</contractorCompany>  
  <contractorPersonnel>John Doe</contractorPersonnel>
```



Current Development Status

- v1.0 introduced early 2019
- Power users provided significant feedback
- Feedback incorporated into v2.0 released December 2019
- As v2.0 is adopted, new optimized versions will be released.
- Eye on the future of full automation

Current Use Case



Rig Systems

- Real-time data
- Service co. data
- BHAs, muds, etc.

Automated Time Log / Activities

+ Rig State Detection

Manual entry

Doc. parsing

Data bridges

QC



DDR Plus™ Schema

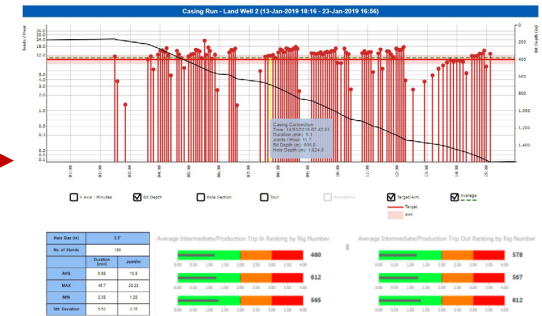
DDR Plus™

Office Systems

- ERP/databases
- pdf, spreadsheets



Performance Management



Operator DDR

SPE-19964-MS 'New Version of IADC Daily Drilling Report Significantly Increases Granularity, Provides Opportunity to Collaborate Using a Common Digital Format'
David Shackleton, Independent Data Services

Value & Benefits of Common Digital Description

- Easy flow of data between & within organizations:
 - Service companies provide BHA, Tubular, Mud, etc. data in standard format
 - Data companies can provide standardized services for data collection & storage
 - Drilling Contractors can provide the data from their DDR Plus to analyze
- Standardized services can be developed for the DDR Plus



Summary

IADC DDR Plus

- Designed for modern drilling, completions & interventions
- Industry-driven, designed, developed & delivered
- Granular code-set ready for detailed reporting, analysis & automated rig state
- Standard digital format for easier collaboration & economy of scale for driving innovation



The New DDR Plus - Website

<https://www.iadc.org/ddrplus/>

Advanced Rig Technology (ART) subcommittee:
DATA, CONTROLS AND SENSORS (DCS)



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Thank you!

Questions?