### WITS\_WITSML Record 21 Bit Report

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| **WITS Record ID:** 21 | **Logical Record Type:** 171 | **Auto/Manual:** Manual |
| **Trigger:** [EVENT] Transmission is operator-initiated | | |
| **Data Source:** Manually entered data reported at the start and end of each bit run. Record is sent when new data values are available. | | |
| **Data Typology:** Reference (Ref), Date\_Time\_Stamp(Dts), Real-time-Measure (Rtm), Real-time-Signal (Rts), Limit (Lim), Set-Point (Spt), Calculation (Cal), Distribution (Dis), Command (Com), Parameter (Par), Synthetic Value (Syn), Alarm (Alm), Interpreted (Int), Modeled (Mod), Observed (Obs), Code (Cod), Count (Cnt), Cumulative (Cml), Status (Sta), Expected (Exp), Estimated (Est) | | |
| **Data Field Types:** A = Alphanumeric String, L = 32 bit 2's complement signed integer, S = 16 bit 2's complement signed integer, F = 32 bit IEEE single precision floating point, E = Engineering, B = Boolean (1 if True and 0 if False), D = Date, T = Time, V = Variant, IL = Integer List, FL = Float List, EL = Engineering List, TL = Text List | | |
| **Reserved Characters:** Comma (,) - Separates Fields, Semi Colon (;) - Separates Items in a Standard Record, Colon (:) - Separates items in Date and Time Fields, Ampersand (&) - Separates items in a List | | |
| **Data Mnemonic Abbreviations:** Raw (Raw), Average (Avg), Max (Max), Min (Min), Mean (Men), Root-Mean-Square (Rms), Percent (Pct), Error (Err), Correlation (Cor), Probability (Prob), Variance (Var), Spread (Spd), Mean-Absolute-Deviation (Mad), Ratio (Rat), Standard Deviation (Std), Mode (Mod), Weighted Mean (Wtm), Dispersion (Dis), Product (Pro), Sum (Sum), Cumulative Sum (Csm), Corrected (Cor), Adjusted (Adj), Instantaneous (Ins), State (Sta), Observed (Obs), Expected (Exp), Observed-Cumulative (ObC), Expected-Cumulative (ExC), Total (Tot), Reported (Rep), Interpolated (Itp), Period (Per), Currency (Cur) | | |

| WITS  Record / Item | Description | STD WITS Long Mnemonic | Operator Mnemonic for WITSML & OSIsoft PI & ODA | Field Type | Length | Typology | Transmit Units (FPS) | Transmit Units (Metric) | Data System Type |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2101 | Well Identifier | WELLID | WID | A | 16 | Ref | ---- | ---- | Unique Well ID |
| 2102 | Sidetrack/Hole Sect No. | STKNUM | SKNO | S | 2 | Ref | ---- | ---- | Unique Wellbore ID |
| 2103 | Record Identifier | RECID | RID | S | 2 | Ref | ---- | ---- | Identification |
| 2104 | Sequence Identifier | SEQID | SQID | L | 4 | Ref | ---- | ---- | Identification |
| 2105 | Date | DATE | DATE | L | 4 | Dts | ---- | ---- | Date |
| 2106 | Time | TIME | TIME | L | 4 | Dts | ---- | ---- | Time |
| 2107 | Activity Code | ACTCOD | ACTC | S | 2 | Cod | ---- | ---- | Activity |
| 2108 | Bit Number | BTNUM | BNUM | A | 8 | Ref | ---- | ---- | Count |
| 2109 | Bit Diameter | BTDIAM | BDIA | F | 4 | Ref | IN | MM | Dimension |
| 2110 | Bit Manufacturer | BTMANUF | BMAN | A | 16 | Ref | ---- | ---- | Reference |
| 2111 | Bit Name | BTNAME | BNAM | A | 16 | Ref | ---- | ---- | Reference |
| 2112 | Bit IADC Code | BTCODE | BCOD | A | 8 | Cod | ---- | ---- | Code |
| 2113 | Bit Serial Number | BTSERNUM | BSER | A | 16 | Ref | ---- | ---- | Reference |
| 2114 | Bit Cost | BTCOST | BCST | F | 4 | Ref | $ | $ | Cost |
| 2115 | Bit Jet 1 Diameter | BTJET1 | BJT1 | F | 4 | Ref | I/32 | MM | Dimension |
| 2116 | Bit Jet 2 Diameter | BTJET2 | BJT2 | F | 4 | Ref | I/32 | MM | Dimension |
| 2117 | Bit Jet 3 Diameter | BTJET3 | BJT3 | F | 4 | Ref | I/32 | MM | Dimension |
| 2118 | Bit Jet 4 Diameter | BTJET4 | BJT4 | F | 4 | Ref | I/32 | MM | Dimension |
| 2119 | Bit Center Jet Diameter | BTJETCEN | BJTC | F | 4 | Ref | I/32 | MM | Dimension |
| 2120 | Bit Total Flow Area | BTTFA | BTFA | F | 4 | Cal | SQIN | MM2 | Area |
| 2121 | Bit Starting Depth (In) | BTDEPIN | BDPI | F | 4 | Obs | F | M | Depth |
| 2122 | Bit Ending Depth (Out) | BTDEPOUT | BDPO | F | 4 | Obs | F | M | Depth |
| 2123 | Bit Run Drilled Distance | BTDDIST | BDDI | F | 4 | Obs | F | M | Length |
| 2124 | Bit Run Drilled Time | BTDTIME | BDTI | F | 4 | Est | HR | HR | Time |
| 2125 | Bit Run Reamed Time | BTRTIME | BRTI | F | 4 | Est | HR | HR | Time |
| 2126 | Bit Penetration Rate (avg) | BTROPA | BRPA | F | 4 | Cal | F/HR | M/HR | Speed |
| 2127 | Bit Weight-on-Bit (avg) | BTWOBA | BWBA | F | 4 | Cal | KLB | KDN | Weight |
| 2128 | Bit Weight-on-Bit (max) | BTWOBX | BWBX | F | 4 | Cal | KLB | KDN | Weight |
| 2129 | Bit Rotary Speed (avg) | BTRPMA | BRMA | S | 2 | Cal | RPM | RPM | RPM |
| 2130 | Bit Rotary Speed (max) | BTRPMX | BRMX | S | 2 | Cal | RPM | RPM | RPM |
| 2131 | Bit Mud Flow Rate (avg) | BTMFA | BMFA | F | 4 | Cal | GPM | L/M | GPM |
| 2132 | Bit Mud Density (avg) | BTMDA | BMDA | F | 4 | Est | PPG | KGM3 | Density |
| 2133 | Bit Standpipe Pressure (avg) | BTSPPA | BSPA | F | 4 | Cal | PSI | KPA | Pressure |
| 2134 | Bit Reason Run | BTRUN | BRUN | A | 16 | Obs | ---- | ---- | Reference |
| 2135 | Bit Reason Pulled | BTPULL | BPUL | A | 16 | Obs | ---- | ---- | Reference |
| 2136 | Bit Grade In | BTGRDIN | BGI | A | 16 | Obs | ---- | ---- | Grade |
| 2137 | Bit Grade Out | BTGRDOUT | BGO | A | 16 | Obs | ---- | ---- | Grade |
| 2138 | Bit Shock Sub Used ? | BTSHKSUB | BSHK | A | 1 | Ref | ---- | ---- | Reference |
| 2139 | Bit Mud Motor Used ? | BTMUDMOT | BMM | A | 1 | Ref | ---- | ---- | Reference |
| 2140 | Bit Comments | BTCOMM | BCOM | A | 128 | Ref | ---- | ---- | Comments |
| 2141 | < SPARE 1 > | SPARE1 | SPR1 | F | 4 |  | ---- | ---- | Spare |
| 2142 | < SPARE 2 > | SPARE2 | SPR2 | F | 4 |  | ---- | ---- | Spare |
| 2143 | < SPARE 3 > | SPARE3 | SPR3 | F | 4 |  | ---- | ---- | Spare |
| 2144 | < SPARE 4 > | SPARE4 | SPR4 | F | 4 |  | ---- | ---- | Spare |
| 2145 | < SPARE 5 > | SPARE5 | SPR5 | F | 4 |  | ---- | --- | Spare |
| 2146 | < SPARE 6 > | SPARE6 | SPR6 | F | 4 |  | ---- | ---- | Spare |
| 2147 | < SPARE 7 > | SPARE7 | SPR7 | F | 4 |  | ---- | ---- | Spare |
| 2148 | < SPARE 8 > | SPARE8 | SPR8 | F | 4 |  | ---- | ---- | Spare |
| 2149 | < SPARE 9 > | SPARE9 | SPR9 | F | 4 |  | ---- | --- | Spare |