### WITS\_WITSML Record 20 Mud Report

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| **WITS Record ID:** 20 | **Logical Record Type:** 170 | **Auto/Manual:** Manual |
| **Trigger:** [EVENT] Transmission is operator-initiated | | |
| **Data Source:** Manually entered data, records 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 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2001 | Well Identifier | WELLID | WID | A | 16 | Ref | ---- | ---- | Unique Well ID |
| 2002 | Sidetrack/Hole Sect No. | STKNUM | SKNO | S | 2 | Ref | ---- | ---- | Unique Wellbore ID |
| 2003 | Record Identifier | RECID | RID | S | 2 | Ref | ---- | ---- | Identification |
| 2004 | Sequence Identifier | SEQID | SQID | L | 4 | Ref | ---- | ---- | Identification |
| 2005 | Date | DATE | DATE | L | 4 | Dts | ---- | ---- | Date |
| 2006 | Time | TIME | TIME | L | 4 | Dts | ---- | ---- | Time |
| 2007 | Activity Code | ACTCOD | ACTC | S | 2 | Cod | ---- | ---- | Activity |
| 2008 | Mud Rept Depth (meas) | MREPDM | MRDM | F | 4 | Obs | F | M | Depth |
| 2009 | Mud Rept Depth (vert) | MREPDV | MRDV | F | 4 | Cal | F | M | Depth |
| 2010 | Mud Rept Number | MREPNUM | MNUM | S | 2 | Cnt | ---- | ---- | Count |
| 2011 | Mud Rept Mud Type | MRMTYPE | MTYP | A | 16 | Ref | ---- | ---- | Reference |
| 2012 | Mud Rept Sample Location | MRSLOC | MLOC | A | 8 | Ref | ---- | ---- | Reference |
| 2013 | Mud Rept Sample Date | MRSDATE | MDAT | L | 4 | Dts | ---- | ---- | Date |
| 2014 | Mud Rept Sample Time | MRSTIME | MTIM | L | 4 | Dts | ---- | ---- | Time |
| 2015 | Mud Rept Mud Density | MRDENS | MDEN | F | 4 | Obs | PPG | KGM3 | Density |
| 2016 | Mud Rept Funnel Vis | MRFVIS | MFV | S | 2 | Obs | S/QT | S/L | Viscosity |
| 2017 | Mud Rept Funnel Vis Temp | MRFVIST | MFVT | F | 4 | Obs | DEGF | DEGC | Temperature |
| 2018 | Mud Rept Plastic Vis | MRPV | MPV | F | 4 | Obs | CP | CP | Viscosity |
| 2019 | Mud Rept Yield Point | MRYP | MYP | F | 4 | Cal | PHSF | PA | Yield |
| 2020 | Mud Rept Gel - 10 sec | MRGEL10S | MGL1 | F | 4 | Cal | PHSF | PA | Gel Strength |
| 2021 | Mud Rept Gel - 10 min | MRGEL10M | MGL2 | F | 4 | Cal | PHSF | PA | Gel Strength |
| 2022 | Mud Rept Gel - 30 min | MRGEL30M | MGL3 | F | 4 | Cal | PHSF | PA | Gel Strength |
| 2023 | Mud Rept Filtrate | MRFILT | MFIL | F | 4 | Est | C/30 | C/30 | Filtrate |
| 2024 | Mud Rept Filter Cake | MRCAKE | MCAK | S | 2 | Est | I/32 | MM | Flow Resistance |
| 2025 | Mud Rept HTHP Temp | MRHT | MHT | F | 4 | Est | DEGF | DEGC | Temperature |
| 2026 | Mud Rept HTHP Pressure | MRHP | MHP | F | 4 | Obs | PSI | KPA | Pressure |
| 2027 | Mud Rept HTHP Filtrate | MRHFILT | MHFI | F | 4 | Est | C/30 | C/30 | Filtrate |
| 2028 | Mud Rept HTHP Filter Cake | MRHCAKE | MHCK | S | 2 | Est | I/32 | MM | Flow Resistance |
| 2029 | Mud Rept Solids % (retort) | MRSOLRET | MSOL | F | 4 | Est | % | % | Fraction |
| 2030 | Mud Rept Water % (retort) | MRWATRET | MWAT | F | 4 | Est | % | % | Fraction |
| 2031 | Mud Rept Oil % (retort) | MROILRET | MOIL | F | 4 | Est | % | % | Fraction |
| 2032 | Mud Rept Sand % | MRSAND | MSAN | F | 4 | Est | % | % | Fraction |
| 2033 | Mud Rept Low Grav Sol % | MRLGSOL | MLGS | F | 4 | Est | % | % | Fraction |
| 2034 | Mud Rept Solids % (calc) | MRSOLCAL | MSCA | F | 4 | Est | % | % | Fraction |
| 2035 | Mud Rept Barite content | MRBARITE | MBRT | F | 4 | Est | % | % | Fraction |
| 2036 | Mud Rept LCM content | MRLCM | MLCM | F | 4 | Est | PPB | KGM3 | Concentration |
| 2037 | Mud Rept MBT capacity | MRMBT | MMBT | F | 4 | Est | PPB | KGM3 | Concentration |
| 2038 | Mud Rept pH | MRPH | MPH | F | 4 | Obs | ---- | ---- | Alkalinity |
| 2039 | Mud Rept pH sample temp | MRPHT | MPHT | F | 4 | Obs | DEGF | DEGC | Temperature |
| 2040 | Mud Rept Pm | MRPM | MPM | F | 4 | Obs | MLML | MLML | Alkalinity |
| 2041 | Mud Rept Pf | MRPF | MPF | F | 4 | Obs | MLML | MLML | Alkalinity |
| 2042 | Mud Rept Mf | MRMF | MMF | F | 4 | Obs | MLML | MLML | Alkalinity |
| 2043 | Mud Rept P1 | MRP1 | MRP1 | F | 4 | Obs | MLML | MLML | Alkalinity |
| 2044 | Mud Rept P2 | MRP2 | MRP2 | F | 4 | Obs | MLML | MLML | Alkalinity |
| 2045 | Mud Rept Chlorides | MRCHLOR | MCHL | F | 4 | Obs | MG/L | MG/L | Concentration |
| 2046 | Mud Rept Calcium | MRCALC | MCAL | F | 4 | Obs | MG/L | MG/L | Concentration |
| 2047 | Mud Rept Magnesium | MRMAG | MMAG | F | 4 | Obs | MG/L | MG/L | Concentration |
| 2048 | Mud Rept Potassium | MRPOT | MPOT | F | 4 | Obs | MG/L | MG/L | Concentration |
| 2049 | Mud Rept Rheometer temp | MRRHETEM | MRHT | F | 4 | Obs | DEGF | DEGC | Temperature |
| 2050 | Mud Rept Viscom 3 rpm | MRVIS3 | M3 | F | 4 | Obs | ---- | ---- | Rheology |
| 2051 | Mud Rept Viscom 6 rpm | MRVIS6 | M6 | F | 4 | Obs | ---- | ---- | Rheology |
| 2052 | Mud Rept Viscom 100 rpm | MRVIS100 | M100 | F | 4 | Obs | ---- | ---- | Rheology |
| 2053 | Mud Rept Viscom 200 rpm | MRVIS200 | M200 | F | 4 | Obs | ---- | ---- | Rheology |
| 2054 | Mud Rept Viscom 300 rpm | MRVIS300 | M300 | F | 4 | Obs | ---- | ---- | Rheology |
| 2055 | Mud Rept Viscom 600 rpm | MRVIS600 | M600 | F | 4 | Obs | ---- | ---- | Rheology |
| 2056 | Mud Rept Brine % | MRBRINE | MBRI | F | 4 | Obs | % | % | Fraction |
| 2057 | Mud Rept Alkalinity | MRALK | MALK | F | 4 | Obs | MLML | MLML | Alkalinity |
| 2058 | Mud Rept Lime content | MRLIME | MLIM | F | 4 | Obs | PPB | KGM3 | Concentration |
| 2059 | Mud Rept Elect. Stability | MRELECST | MELS | F | 4 | Obs | V | V | Voltage |
| 2060 | Mud Rept CaCl, Wt % | MRCACL | MCCL | F | 4 | Obs | % | % | Fraction |
| 2061 | < SPARE 1 > | SPARE1 | SPR1 | F | 4 |  | ---- | ---- | Spare |
| 2062 | < SPARE 2 > | SPARE2 | SPR2 | F | 4 |  | ---- | ---- | Spare |
| 2063 | < SPARE 3 > | SPARE3 | SPR3 | F | 4 |  | ---- | ---- | Spare |
| 2064 | < SPARE 4 > | SPARE4 | SPR4 | F | 4 |  | ---- | ---- | Spare |
| 2065 | < SPARE 5 > | SPARE5 | SPR5 | F | 4 |  | ---- | --- | Spare |