

METER PROVING

SERVICE EXPERTISE

Onshore Meter Proving and Calibration:

- Production plants
 - Pipelines
 - Lease automated custody transfer units (LACTs)
 - Refineries
 - Storage tanks & terminals

Crude Oil Rail-Car Metering and Calibration.

Truck mounted Meter Proving and Calibration.

Meters:

- Positive Displacement
 - Turbine
 - Master
 - Coriolis

Materials:

- Crude oil
 - Diesel
 - ATB
 - NAPTHA

PROVER CAPABILITY

Bi-Directional prover units:

- *Flowrate: Up to 1300/hr*
 - *Up to 500 PSI*
 - *Hookups/Hose: 2", 3", 4"*
 - *Electronic or Mechanical Pulse Connection*

REPORTING

Custom report provides both accepted methods of proving.
ProveIt program available.



RELIABLE. PRECISE. TRUE.

404 1st Ave. SE

PO Box 175

Belfield, ND 58622-9300

Measurement Services LLC

Meter Proving Report

Crude Oil

Tel: 701-559-3252

Fed ID#	State ID #	Date	Ambient Temp °F	Report No							
<i>Lse Owner</i>											
<i>Lse Name</i>	Master Proving Report										
<i>Legals</i>											
<i>County</i>											
Prover Data	Volume (Bbls) @ 60.0 F and 0.0 Pzig	ID (in)	WT (in)	Ep	Gc	Serial No.	Flow Rate	M.F	CMF	Date	
	3.162660	7.981	0.322	3.00E+07	1.86E-05	719					
Meter Data											
Serial No.	Meter No.	Pulses/Bbl	Temp. Comp.	Manuf.	Size (in)	Model					
		10000	No								
N.O. FR	Flow Rate	Non-Reset Totalizer			Previous Reading			Bbls since last Proving			
					0			0			
Run Data											
Avg. Temp		N.O. Pressure		Total Pulses		Run #	IMF	Correction for the effect of Temperature on steel as per API MPMS 12.2.3 CTS = Correction for the effect of Pressure on steel as per API MPMS 12.2.3 CPS = Correction for the effect of pressure on a liquid as per API MPMS 11.2.1 CPL = Correction for the effect of temperature on a liquid as per ASTM-1250 Table 6A CTL =			
Temperature (°F)		Pressure (Pzig)		Round Trip		1					
Prover Avg	Meter	Prover	Meter			2					
						3					
						4					
						5					
						6					
						7					
						8					
						9					
						10					
AVG:				#VALUE!	- Repeatability -	#####					
Liquid Data											
Type	Gravity		Obs Gravity	Specific Gravity	R.V. Press						
This Meter Proving Report to be used for Crude only	(API 8.0 to 0.5) #NAME!		Obs Temp.		0.0						
Field Calculations Based on Average Meter Data Format											
Prover Volume (Bbls)	x	CTS _p #DIV/0!	CPS _p #DIV/0!	x	CTL _p #DIV/0!	CPL _p #DIV/0!	=	Net Prover Volume (GSV _p)			
3.16266	x			x			=				
Average Pulses	/	Pulses/Bbl #DIV/0!	IV'm (Bbl) #DIV/0!	=	CTLM _m #DIV/0!	CPLM _m #DIV/0!	=	Net Meter Volume (TSVm)			
	/	10000		=			=				
Net Prover Volume (GSV _p)	/	Net Meter Volume (TSVm)		=	METER FACTOR #DIV/0!	CPL @ (metering)	=	Composite Factor			
	/			=			=				
Remarks, Repairs, Adjustment, etc., 1" run not used in calculations	Total Temp.		Counts	Avg. Temp. #DIV/0!	#VALUE!						
			Permanent Seats /Date	Seal Number	SEAL	OFF	ON	POSITION			
Signature	Effective Date		Company Represented								
			Measurement Services LLC								

**TECHNICIANS COMPLETE RIGOROUS HSE STUDY THAT HAS
EARNED MEASUREMENT SERVICES LLC SEVERAL AWARDS
FOR ACCIDENT, INJURY AND INCIDENT PREVENTION.**

MEASUREMENT SERVICES LLC		JOB SAFETY ANALYSIS: METER PROVING					
404 1ST AVE. SE - P.O. BOX 175 - BELFIELD, ND 58622		(701) 559-3252		TECHNICIAN			
MSCS REQUIRED PERSONNEL							
HARD HAT	OSHA 29 CFR 1910.131	STEEL TOED BOOTS	OSHA 29 CFR 1910.136	R1 CLOTHING	OSHA 29 CFR 1910.132	NETRILE GLOVES	OSHA 29 CFR 1910.138
4-GAS MONITOR	OSHA 29 CFR 1915.5900	FACIAL HAIR, STANDARD	OSHA 29 CFR 1910.134	R1 CUTTER HEAR	OSHA 29 CFR 1910.132	LEATHER GLOVES	OSHA 29 CFR 1910.138
SAFETY GLASSES	OSHA 29 CFR 1910.131	ASSOC'D RESP. MASK	OSHA 29 CFR 1910.134	HEARING PROTECTION	OSHA 29 CFR 1910.95		
MSCS REQUIRED TRAINING							
CLASS C, CM	OSHA 49 CFR 391	DRIVERS SAFETY	OSHA 49 CFR 390	DOT PLACARDS	49 CFR 175.5 & 49 CFR 172	HAZCOM 2008	OSHA 29 CFR 1910.130
HAZMAT ENDORSEMENT		TRANS. FATIGUE MONT	OSHA 49 CFR 392	HAZARDOUS WASTE PLANNING	OSHA 29 CFR 1910.130	CHIM. HAZ. CHEM. HAZ.	OSHA 29 CFR 1910.130
CDL WITH AIRBAGS	OSHA 29 CFR 390	DRIVING ENGINES	OSHA 49 CFR 392	RISK PREVENTION	OSHA 29 CFR 1910.130	COPIED FROM 29 CFR 1910.130	OSHA 29 CFR 1910.131
PER. SARS/LAND	INDUSTRY	DRIVING WHILE DRIVING	OSHA 49 CFR 392	RISK REDUCE	OSHA 29 CFR 1910.130	ELECTRICAL SAFETY	OSHA 29 CFR 1910.131
OSHA 35	INDUSTRY	SAFE VEHICLE BACKING	STATE DOT COLM	RISK REDUCE	N/A	ELECTRICAL HAZARD	OSHA 29 CFR Subpart S
CERT. MG TECH	FL 4.2, 4.4, 5.2, 5.6, 6.1, 18.1, 18-2	COLLISION KNOWLEDGE	STATE DOT COLM	RISK REDUCE	OSHA 29 CFR 1910.130	ELECTRICAL HAZARD, HAZ. PREV.	OSHA 29 CFR 1910.134
SAFETY ORIENTATION		DISTRACTED DRIVING	FMCSA 49 CFR 392-80	RISK REDUCE	OSHA 29 CFR 1910.130	ELECTRICAL HAZARD	OSHA 29 CFR 1910.134
SSE	INDUSTRY - API	DRIVING EXPERIENCE/OSPA	OSHA 49 CFR 172 Subpart D	DRIVING HAZ. RISK	OSHA 29 CFR 1910.130	LIFT EQUIPMENT	OSHA 29 CFR 1910.130
HDS	OSHA 29 CFR 1910.1300	DRIVING HAZ. RISK, RSP	OSHA 49 CFR 393 Subpart D	DRIVING HAZ. RISK	OSHA 29 CFR 1910.130	FALL PROTECTION	OSHA 29 CFR 1910.130
INDUSTRIAL SAFETY		FIELD ROAD HAZARD	OSHA 49 CFR 393 Subpart D	FIELD ROAD HAZARD	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
FIRE/EXP. ADD	OSHA 29 CFR 1910.131	DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
HAZARDOUS PATHOGENS	OSHA 29 CFR 1910.1030	DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
PPE	OSHA 29 CFR 1915	DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
HEARING CONSERVATION	OSHA 29 CFR 1915	DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
WEATHER CONDITIONS		DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
EXTREME HEAT		DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
WEATHER HAZ		DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
HEAT		DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
FIRE/HAZ. PREVENTION		DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
FAUL		DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
OPEN TDS		DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
TDS		DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
VEHICLE		DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
METER PROVING		DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
TASK		DRIVING HAZ.	OSHA 49 CFR 393 Subpart D	DRIVING HAZ.	OSHA 29 CFR 1910.130	HAZARDOUS WASTE	OSHA 29 CFR 1910.130
CHECK HAZARD SIGNS AND MINIMUM DISTANCE FROM WORK AREA							
NO RISKY HAZARDSONS							
NO ESCAPE, NO HONTS, ETC.							