BAKER HUGHES Baker Atlas

COMPENSATED Z-DENSILOG[SM] COMPENSATED NEUTRON LOG GAMMA RAY LOG CALIPER LOG

FILE NO:	COMPANY	INERGY MIDSTREAM, LLC.
API NO: 31-097-51496-00-01	WELL	FINGER LAKES 18
	FIELD	US. SALT BRINE FIELD
	COUNTY	SCHUYLER
	STATE	NEW YORK
Ver. 3.87	LOCATION: LAT 42.423106 LONG 76.896697	OTHER SERVICES: RTEX/CAL/GR SBT/GR
MEASURED DEPTH		

PERMANENT DATUM	G.L.	ELEVATION 687 FT	ELEVATIONS: KB -
LOG MEASURED FROM	G.L.	0 FT ABOVE P.D.	DF -
DRILL. MEAS. FROM	G.L.		GL 687 FT

DATE	22-SEP-2011	
RUN / TRIP	1	2
SERVICE ORDER	611428	
DEPTH DRILLER	2030 FT	
DEPTH LOGGER	2028 FT	
BOTTOM LOGGED INTERVAL	1997 FT	
TOP LOGGED INTERVAL	0 FT	
CASING DRILLER	10.75 IN	@716 FT
CASING LOGGER	716 FT	
BIT SIZE	8.75 IN	
TYPE OF FLUID IN HOLE	BRINE	
DENSITY / VISCOSITY	-	-
PH / FLUID LOSS	-	-
SOURCE OF SAMPLE	LOGGED	
RM AT MEAS. TEMP.	0.117 OHMM	@77 DEGF
RMF AT MEAS. TEMP.	0.009 OHMM	@77 DEGF
RMC AT MEAS. TEMP.	0.130 OHMM	@77 DEGF
SOURCE OF RMF / RMC	CALCULATED	CALCULATED
RM AT BHT	0.12 OHMM	@75.0 DEGF
TIME SINCE CIRCULATION	NOT AVAILABLE	
MAX. RECORDED TEMP.	75.5 DEGF	
EQUIP. NO. / LOCATION	Z004288	MNT TOP, PA
RECORDED BY	GARCIA, JUAN	
WITNESSED BY	MOON, BARRY	

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

BOREHOLE RECORD

BIT SIZE	FROM	TO
8.75 IN	716 FT	2030 FT

CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
9.625 IN	40.5 LB/F	J-55	0 FT	716 FT

REMARKS

RUN 1 TRIP 2 : OPERATION 2: GR-NEU-ZDL-RTEX-DUMMY-DAL

DENSITY POROSITY (PORZ) = 2.71 MATRIX
NEUTRON POROSITY (CNC) = COMPESATED POROZITY NEUTRON POROSITY SALINITY CORRECTED
SALINITY=300,000PPPM
FLUID DENSITY USED TO CORRECT POROSIY FROM DENSITY 8.35 GR/CC3

(CAL)=SINGLE AXIS CALIPER FROM DENSITY TOOL
(CVOL)=ANNULAR CEMENT VOLUME FOR 5.5" CASING
(BVOL)=TOTAL BORHOLE VOLUME

RESISTIVITY CURVES BOREHOLE CORRECTED USING CALIPER
GALVANIC LL7 TOOL RAN WITH STANDOFFS

FLUID LEVEL AT 289FT

RIG: BAKER HUGHES CRANE
CREW: S. HITE/ J. GARCIA /J. SCOTT/ J. LAUB

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	2	TTMA	3980XA	10500992	FREE
1	2	COM REM	3518FB	10162512	FREE
1	2	COM REM/GR	3518EB	10154190	DECENTRALIZED
1	2	CNC	2436XA	10489644	DECENTRALIZED
1	2	MASS ISO	4486XA	11755508	FREE
1	2	ZDL	2223XA	Z402529	PAD PINNED DEVICE
1	2	KNK	3930XA	10407106	FREE
1	2	RTEX	1241XA	11758910	STANDOFF
1	2	DAL ELEC	1630EA	10513039	STANDOFF
1	2	DAL	1630MA	10411460	STANDOFF
1	2	MASS ISO	4486XA	11755504	STAND OFF

MAIN LOG 5"/100FT SCALE

ECLIPS 6.1I Aug 06, 2010 Thu Sep 22 15:21:16 2011
Updates: 1,38,41

Pcrplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.51

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/INERGY_FINGER_LAKES_18_R1/m970vrtex03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 617.645 ft BOTTOM DEPTH: 2036.309 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
GR LOW RES	FILTER (.1)	medium (1)		''	''
GR MED RES	FILTER ()	medium (1)		''	''
CALIPER	FILTER ()	medium (1)		''	''
	FILTER (.1)	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''
CN LOW RES	FILTER (.1)	medium (1)		''	''
CN MED RES	FILTER ()	medium (1)		''	''
ZDL MED RES	FILTER (hrd1*)	medium		''	''
	FILTER (hrd1s*)	medium		''	''
	FILTER (hrd2*)	medium		''	''
	FILTER (hrd2s*)	medium		''	''
	FILTER (soft*)	medium		''	''

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	5.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	''	''
BIT SIZE	BIT SIZE	8.750	in	''	''
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (zdbh*)	USE CALIPER		''	''
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	8.750	in	''	''
MUD DENSITY	MUD DENSITY	8.35	lbm/gal	''	''

ACCELERATION PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
CN MATRIX	2436 MATRIX	LIMESTONE		TOP	BOTTOM
CN BOREHOLE CORRECTION	SALINITY	0	ppm	''	''
	BOREHOLE CORRECTION	ON		''	''
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		''	''
	BIT SIZE BEHIND CSNG	7.875	in	''	''

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
DENSITY POROSITY	Air Filled Borehole	NO		TOP	BOTTOM
	RHOmatrix	2.710	g/cm3	''	''
	RHOfluid	1.000	g/cm3	''	''

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Sep 22 13:56:12 2011	BIT SIZE
F1:BVOL	Sep 22 13:56:12 2011	BOREHOLE VOLUME
F1:CAL	Sep 22 13:56:12 2011	CALIPER
F1:CNC	Sep 22 13:56:12 2011	BOREHOLE SIZE CORRECTED COMPENSATED NEUTRON POROSITY
F1:CVOL	Sep 22 13:56:12 2011	CEMENT VOLUME
F1:GR	Sep 22 13:56:12 2011	GAMMA RAY
F1:PE	Sep 22 13:56:12 2011	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Sep 22 13:56:12 2011	POROSITY FOR SELECTABLE MATRIX
F1:TEN	Sep 22 13:56:12 2011	DIFFERENTIAL TENSION
F1:ZCOR	Sep 22 13:56:12 2011	DENSITY CORRECTION
F1:ZDEN	Sep 22 13:56:12 2011	FORMATION BULK DENSITY

CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	50.25	TEN	0.00		
CAL	31.25	PE	31.25	ZCOR	31.25		
CNC	42.62	PORZ	31.25	ZDEN	31.25		

Presentation : sys1:/dat1a/INERGY_FINGER_LAKES_18_R1/ZDL_MN.pdf [5"/100' Scale]

GR BACKUP | TOOL STICKING | POSSIBLE GAS

GAMMA RAY [gr] 0 – 200 (gAPI)
CALIPER [cal] 6 – 16 (in)
BIT SIZE 6 – 16 (in)
FEET
Z-DENSITY POROSITY [porz] 30 – -10 (pu)
NEUTRON POROSITY [cnc] 30 – -10 (pu)
BULK DENSITY [zden] 2 – 3 (g/cm3)
P.E. [pe] 0 – 10 (b/e)
Z-CORR [zcor] -0.5 – 0.5 (g/cm3)
DIFF. TENSION [ten] 2400 – -100 (lbf)
BVOL 10 100 1000
CVOL 10 100 1000

CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/INERGY_FINGER_LAKES_18_R1/m970vrtex.tp1

GR PRIMARY CALIBRATION SUMMARY

Tool #: 3518EG 10154190 DATE/TIME PERFORMED: Thu Sep 15 09:40:55 2011
Unit #: 3880TA ML4288 Jig Series: 4702NK DA-582

Background	Calibrator ON	Jig Value (gAPI)	Mult	Background (gAPI)	Calibrator ON (gAPI)
121.91	810.18	185	0.269 (0.230 – 0.280)	32.77	217.77

CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2436XA 10489644 DATE/TIME PERFORMED: Fri Sep 2 12:17:52 2011
UNIT #: 3880TA ML4288 CALIBRATOR #: 2437XB 10084437 SOURCE #: 4718XA SN-972

SSN DT CPS	LSN DT CPS	SSN/LSN	MCF	CNRATIO	CN PU
4893.18	856.31	5.71428	1.00398 (0.95000 – 1.05000)	5.73700	25.241

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2223XA Z402529 DATE/TIME PERFORMED: Wed Aug 24 09:03:45 2011
UNIT #: 3880TA ML4288

	SIZE (in)	VALUE	MULTIPLIER	ADD
SMALL RING (Arm)	6.000	1304.0		
LARGE RING (Arm)	13.375	3540.0	0.00330	1.69902
PAD CLOSED		1619.2	0.00250	-4.04800

ZDL PRIMARY CALIBRATION SUMMARY