KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

OBICINAL

Form ACO-1 Form Must Be Typed Form must be Signed All blanks must be Filled

WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 33711	API No. 15 - 035-24379 -0000
R-C STEEL	Spot Description:
Name:BOSTEEE Address 1: 209 N FRY	
Address 2: P.O. BOX 326	
	1,320 Feet from North / South Line of Section
City: YATES CENTER State: KS Zip: 66783 +	
Contact Person: BERT CARLSON	Footages Calculated from Nearest Outside Section Corner:
Phone: (<u>620</u>) <u>485-6064</u>	NE ☑NW ☐SE ☐SW
CONTRACTOR: License #	County: COWLEY
Name: HAT DRILLING	Lease Name: COPPER-HIATT Well #: 19-1
Wellsite Geologist: MARK BRECHIEN	Field Name: RADCLIFF NORTHEAST
Purchaser:	Producing Formation: CLEVELAND
Designate Type of Completion:	Elevation: Ground: 1410 Kelly Bushing:
✓ New Well Re-Entry Workover	Total Depth: 2384 Plug Back Total Depth: SURFACE
7 oil ☐ wsw ☐ swd ☐ slow	Amount of Surface Pipe Set and Cemented at: 450 Feet
Gas D&A ENHR SIGW	Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
OG GSW Temp. Abd.	If yes, show depth set:Feet
CM (Coal Bed Methane)	If Alternate II completion, cement circulated from:
Cathodic Other (Core, Expl., etc.):	feet depth to:sx cmt.
If Workover/Re-entry: Old Well Info as follows:	leet depth to w/ ax cm.
Operator:	
Well Name:	Drilling Fluid Management Plan (Data must be collected from the Reserve Pit)
Original Comp. Date: Original Total Depth:	Clarity to the body of the clarity o
Deepening Re-perf. Conv. to ENHR Conv. to SWD	Chloride content:ppm Fluid volume:bbls
Conv. to GSW	Dewatering method used:
Plug Back: Plug Back Total Depth	Location of fluid disposal if hauled offsite:
Commingled Permit #:	Operator Name:
Dual Completion Permit #:	Lease Name: License #:
SWD Permit #:	Quarter Sec TwpS. R
ENHR Permit #:	County: Permit #:
GSW Permit #:	County.
1/3/2011 1/5/2011 Spud Date or Date Reached TD Completion Date or	•
Spud Date or Date Reached TD Completion Date or Recompletion Date Recompletion Date	
Kansas 67202, within 120 days of the spud date, recompletion, workover or confiside two of this form will be held confidential for a period of 12 months if rec	the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, onversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information quested in writing and submitted with the form (see rule 82-3-107 for confidential report shall be attached with this form. ALL CEMENTING TICKETS MUST rm with all temporarily abandoned wells.

AFFIDAVIT

AFFIDAVII

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature:

KCC Office Use	
Letter of Confidentiality Received	RECEIVED
Date:	1111 2 2 2 2 2
Confidential Release Date:	JOP 5 5 5011
Wireline Log Received	•
Geologist Report Received	CC WICHITA
UIC Distribution	8-76711

Operator Name: <u>B-C</u>	STEEL		•	ease	Name. C	OPPER-H	HATT	Well #:19)-1	
Sec. 19 Twp.31 S. R.8 Fast West					y: COW					
NSTRUCTIONS: Sho ime tool open and clos ecovery, and flow rate ne Logs surveyed. Al	ow important tops sed, flowing and s s if gas to surface	and base of hut-in presso test, along v	formations pen ures, whether si vith final chart(s	hut-in pre:	ssure reac	hed static lev	el, hydrostatic pre	essures, bottom	hole temp	erature, fluid
Drill Stem Tests Taken					□ L o	Log Formation (Top), Depth		and Datum		Sample
Samples Sent to Geol	,	Пγ	es 🗸 No		Name			Тор	1	Datum
Cores Taken Electric Log Run Electric Log Submitted (If no, Submit Copy,	I Electronically		es No			* * * * * * * * * * * * * * * * * * *				
List All E. Logs Run: GAMMA RAY	NEUTRON	CEMEN	TLOG		•			-		
		. '		RECORD		_				
Purpose of String	Size Hole Drilled	Siz	ort all strings set-ort te Casing t (In O.D.)	We	surface, inte eight / Ft.	rmediate, prod Setting Depth	Type of Cement	# Sacks Used		and Percent
SURFACE	12 1/4	8 5/8				450	CLASS a	210	FLOS	EAL
LONGSTRING	6 3/4	4 1/2				2384	THICK SET	110	KOL S	EAL
			ADDITIONAL	CEMENT	ING / SQU	EEZE RECO	RD			
Purpose: Perforate Protect Casing Plug Back TD Plug Off Zone	Depth Top Bottom	Турє	e of Cement	# Sack	ks Used		Type an	d Percent Additive	S	
Shots Per Foot			RD - Bridge Plug Each Interval Per		•	Acid,	Fracture, Shot, Cerr (Amount and Kind of		ord	Depth
9	9 SHOTS 231:	3-2317				3 1/8 SLI	CK TAG GUN			2300
								41.2		
								· · · · · · · · · · · · · · · · · · ·	<u></u>	
TUBING RECORD:	Size: 2 3/8	Set At 2384	:	Packer	At:	Liner Run:	Yes	No		
Date of First, Resumed STILL COMPLET		ENHR.	Producing Met	thod: Pump	oing	Gas Lift [Other (Explain)	,		
Estimated Production Per 24 Hours	Oil	Bbls.	Gas	Mcf	Wat	er	Bbls.	Gas-Oil Ratio	,	Gravity
		1		LIETION (DE 001121	TION		PRODUCT	RECEI	VED
DISPOSITION Solo	ON OF GAS: Used on Lea	ase 🗆		METHOD (OF COMPLE Dually (Submit)	Comp.	Commingled (Submit ACO-4)		UL 2 2	2011
(If vented, Su	bmit ACO-18.)		Other (Specify) _					KC	Chine	V tem-

£3



REMIT TO

Consolidated Oil Well Services, LLC Dept. 970 P.O. Box 4346 Houston, TX 77210-4346

MAIN OFFICE P.O. Box 884 Chanute, KS 66720 620/431-9210 • 1-800/467-8676 FAX 620/431-0012

INVOICE

Invoice #

Invoice Date:

01/13/2011

B.C. STEEL GAS LLC

209 N. FRY

P.O. BOX 326

YATES CENTER KS 66783

(620) 625-2999

COOPER HIET 19-1

30163

01-06-11

Part 1	Number	Description	Qty	Unit Price	Total
1126A		THICK SET CEMENT	110.00	17.0000	1870.00
1110A		KOL SEAL (50# BAG)	550.00	.4200	231.00
1107A		PHENOSEAL (M) 40# BAG)	55.00	1.1500	63.25
1123		CITY WATER	3000.00	.0149	44.70
4404		4 1/2" RUBBER PLUG	1.00	45.0000	45.00
	Description		Hours	Unit Price	Total
437	80 BBL VACUUM	TRUCK (CEMENT)	4.00	85.00	340.00
442	TON MILEAGE DE		302.50	1.20	363.00
520	CEMENT PUMP		1.00	925.00	925.00
520	EQUIPMENT MILE	AGE (ONE WAY)	50.00	3.65	182.50

.00 Tax: 153.27 AR 4217.72 2253.95 Freight: Parts:

Labor:

.00 Misc:

.00 Total:

4217.72

.00 Supplies:

.00 Change:

.00

RECEIVED

Signed

JUL 2 2 2011





TICKET NUMBER 30083 LOCATION EUROKA FOREMAN Kevin MCCoy

PO Box 884, Chanute, KS 66720 620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT CEMENT

DATE	CUSTOMER#	WELL NAME & NUMBER			SECTION	TOWNSHIP	RANGE	T COUNTY
12-17-10	1152	Cooper H	ret 19-1		19	315	8E	Cowky
CUSTOMER		•		Condi				Self constitution of
B. C. 3	steel Gas	466		SAPETY	TRUCK#	DRIVER	TRUCK#	DRIVER
MAILING ADDR	ESS	7		Meeting	445	John S	TAGGIC#	BRIVER
1/122		0.1		Km				-
1432 A	Nighthawk	Rd.	17/0 0005	_ンタ	442	Chris m		
			ZIP CODE	CH				
YAtes	Center	Ks	66783		_			
JOB TYPE SU	RFACE O	HOLE SIZE	1274	HOLE DEPTH	457	CASING SIZE & V	VEIGHT 8 1/8	
CASING DEPTH	450	DRILL PIPE		TUBING		1	OTHER	
	HT.45 ₹		72 BbL		k 6.5 #	CEMENT LEFT in		
	T.27.5 886							
						w/ Fresh was	ter. Mixed.	210 SKs
Class "A"	Cement w/ 3	3% CACLE -	7% Gel 1	4 + Florek	@ 15 1996	yield 1-35. Z	usplace w/ 2	27.5 BbL
fresh wat	ce. Shut Cas	,,, G.	od Coment	Refuens -	to SURFACE	= 15 BBL 5/4	ery to Pit	L
	lete, Rig dou							
Obo Carry	10,000	J. .					· · · · · · · · · · · · · · · · · · ·	
								
, , , , , , , , , , , , , , , , , , ,		· · · · · · · · · · · · · · · · · · ·	······································		**			

ACCOUNT CODE	QUANITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
54015	1	PUMP CHARGE	725.00	725.00
5406	<i>5</i> 0	MILEAGE	3.65	182-50
11045	210 sks	Class "A" Cement	13.50	2835.00
1102	600 📂	CACLZ 3%	.75	450.00
1118 B	400 *	Gel 2%	.20	80.00
//07	.55 *	Flocole 1/4 1 JSK	2.10	115.50
5407 A	10.11 Tons	50 Miles Buck Delv.	1.20	606.60
			<u> </u>	ECEIVED
			JU	L 2 2 201
			KC	WICHIT
			Sub Total	4994-60
	1	THANK YOU 6.8%	SALES TAX	236.67
avin 3737	4/11	_ 	ESTIMATED TOTAL	5231.27
AUTHORIZTION	100	TITLE HAT Delg, Contractor	DATE	

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.

Geological Report

Cooper Hiat #19-1 NW Quarter, Sec. 19, T31S;R8E 1320' FNL;2686' FWL Cowley County, KS API #15-035-24379-00-00

Operator:

B-C Steel, LLC., C/O Bert Carleson, 209 North Fry, Yates Center, KS,

66783.

Drilling Contractor:

Hat Drilling. Midway Mud Rotary Rig #2.

Wellsite Geologist:

Mark Brecheisen.

Dates Drilled:

January 3rd, 2011 to January 5th, 2011.

Size Hole:

8 1/4"

Total Depth:

23841

Elevation:

1346'

Drilling Fluid:

Freshwater bentonite and additives.

Surface Casing:

450' of 8-5/8" casing cemented with 230 sx of cement to surface.

Formation Tops:

Formation tops were picked from the electric logs.

Field Name:

Radcliff, Northeast.

Status:

Oil/gas well.

Oil Shows:

Sandstone from 1162'-1207', Hertha Limestone @2211'-2217'.

Gas Shows:

Sandstone from 1162'-1207', Layton Sandstone @2006'-2040', Hertha

Limestone @2211'-2217', Cleveland Sandstone @2286-2335'.

Water Encountered:

No appreciable water encountered upon drilling.

On Location:

January 3rd, 2011, 12:40 pm. Well Depth 692'; left location @ TD, Well

Depth of 2384' @ 7:50am, January 5th, 2011.

Notes:

Well cuttings were examined at rig and discarded. Samples of "zones of

interest" were saved and examined with a binocular microscope and black

light.

RECEIVED
JUL 2 2 2011
KCC WICHITA

0'-1150': Samples not examined.

1150'-1162': Shale, medium-dark to dark gray, slightly gritty to sandy. Few sand lamenations, medium-gray, fine grained, sub-angular to sub-rounded grains. Friable, micritic, micacious, argillaceous traces of pale brown to pale yellow-brown limestone present. Fine crystalline, friable, with good inter-crystalline porosity. Sample overall had 10% dull yellow mineral fluorescence.

1162'-1207': Sandstone, light to medium gray. Fine grained, well sorted with sub-angular to sub-rounded grains. Very friable, micacious. Lots of samples have pinpoint to mottled hydrocarbon stain. Black bitumen in some samples. Best part of sand exhibited 60% dull, even to mottled hydrocarbon fluorescence. No real petroliferous odor, but slight free oil show in some samples. Slow, uneven, poor, milky blue cut. No residual oil show to tray after cut. Saturation overall is poor, slight gas kick of ten units exhibited in this formation once cut – hot wire soon settled to base line reading. Traces of limestone, pale brown to olive gray. Fine crystalline, fairly friable, some limestone samples exhibited mottled hydrocarbon stain with variegated hydrocarbon fluorescence. Few samples had fast, even, fair cut with slight residual oil show to tray after cut. Some shale partings scattered throughout this section. Good mud cake exhibited throughout this section. This sandstone should be considered for possible commercial production.

1207'-1260': Shale, medium-dark to dark gray, slightly silty to sandy in part, calcareous in part.

1260'-1264': Limestone, tan to grayish-brown. Fine crystalline, hard, dense, slightly sucrosic, no petroliferous odor/show.

1264'-1270': Shale, medium-dark to dark gray. Silty in part.

1270'-1314': Shale, medium-dark gray, slightly micacious, silty, with few scattered sand laminae and limestone partings in section. Sandstone is light gray, very fine to fine grained, well sorted, with sub-angular to sub-rounded grains. Limestone is pale brown, fine crystalline, hard, slightly sucrosic. Sample overall exhibited trace of mineral fluorescence. No petroliferous odor/show. Sample quality very poor.

1314'-1332': Sandstone, light gray to light brown. Very fine to fine grained, well sorted, with sub-angular to well-rounded grains. Few shale partings present. No petroliferous odor/show. Sample mostly unconsolidated sand – sample quality very poor.

1332'-1343': Limestone, tan to pale brown, fine crystalline, fairly friable, slightly sucrosic with scattered shale partings. Very poor sample quality.

1343'-1406': Shale, medium-dark gray to dark gray with scattered traces of "red bed shale" in sample (probably wash out zones on E log). Few scattered sand partings, few limestone streaks scattered throughout section. Limestone is tan to olive gray, fine crystalline, slightly gritty texture with few traces of pinpoint oil stain on some samples. No petroleum odor detected, very slight oil show. Limestone exhibited trace amount of dull, even to mottled hydrocarbon fluorescence. No commercial value.

• 1380': Jet Pits.

RECEIVED
JUL 2 2 201

1406'-1410': Limestone, Grayish-brown, mottled, sucrosic, fairly hard. No petroliferous stain, odor, or show.

1410'-1446': Shale, medium-dark gray. Silty/sandy. Soft, scattered "red bed" samples showing up throughout this section. Scattered sandstone laminae (1431'-1437'), off-white to light gray, fine grained, friable, well sorted, well rounded. micacious in part, trace, pinpoint oil stain on few samples. Few scattered limestone partings. Overall, slight trace of mineral fluorescence. No petroliferous odor or show.

1446'-1556': Shale, medium to dark gray Silty to sandy, soft, scattered sandstone laminations.

Off-white to light gray Very fine to fine grained, friable, argillaceous in part. No fluorescence, no petroleum odor/show, few traces of limestone and "red bed" scattered throughout.

Top of Iatan Limestone @1556'(-210'), top of the Pedee Group

1556'-1561': Limestone, tan to yellowish-brown to olive-gray. Fine, crystalline, mottled in appearance. Hard, dense, no visible porosity, no petroliferous odor/show. Trace, dull yellow mineral fluorescence.

1561'-1594': Shale, medium-dark gray Silty in part, calcareous in part. Several thin, limestone partings scattered throughout interval. Limestone is tan to yellowish-brown. Fine crystalline, mottled, fairly friable. Few scattered sandstone laminations. Off-white, fine grained, well sorted with sub-rounded to well-rounded grains. No fluorescence, no petroliferous odor/show.

1594'-1624': Stalnaker Sandstone. Off-white to light-gray to light-brown. Fine grained, well sorted and rounded. Friable, micacious, even brown oil stain on few rock samples and throughout freshly broken rock surfaces. Less than 5% medium, bright yellow hydrocarbon fluorescence. No cut. Few shale and limestone partings as well as traces of vitrain coal in interval No petroliferous odor, no gas response on hot wire.

1624'-1708': Shale, medium-dark gray to dark gray Silty, micacious Few scattered sand laminae. Few traces of brown oil stain, no real saturation, less than 3% bright yellow, hydrocarbon fluorescence within this interval. No cut, no commercial interest.

Top of Lansing Group @1708'(-362')

1708'-1728': Limestone, dark yellowish-gray to dark yellowish-brown. Mottled in part, fine crystalline. Fair to good friability. Good, inter-crystalline porosity. Fossiliferous in part. Traces of dull, even mineral fluorescence. Some inter-bedded shale. Dark gray, soft, greasy. Sample overall exhibited no stain, no petroliferous odor/show.

1728'-1778': Shale, dark gray Very soft, greasy, traces of thin, inter-bedded limestone. Tan to dark yellowish-brown. Fine crystalline, mottled in part, traces of pinpoint oil stain on few samples. Extremely slow cut, no real saturation. Traces of dull, even hydrocarbon fluorescence. No petroliferous odor detected.

RECEIVED
JUL 2 2 2011

1778'-1786': Limestone, light to dark yellowish-brown, fine to medium crystalline, mottled, very friable. Good, inter-crystalline porosity. No fluorescence, no stain on rock samples, no petroliferous odor/show.

1786'-1799': Shale, dark gray, soft, greasy, calcareous in part.

1799'-1808': Limestone, tan to dark yellowish-brown, fine-medium crystalline, fair intercrystalline porosity, fossiliferous. No fluorescence, no stain, no petroliferous odor/show.

1808'-1859': Shale, medium-dark gray to dark gray Soft, greasy, pyritic in part, silty in part, fissile, traces of limestone and sandstone present in minute quantities. No fluorescence, no show.

1859'-1872': Limestone, dark yellowish-brown to olive-gray Fine to medium crystalline. Hard, dense, sucrosic, very fossiliferous. Traces of dark gray shale. Calcareous, fairly hard. Sample overall had no fluorescence, no petroliferous odor/show.

Base of Lansing Group @1872'(-526')

1872'-1947': Shale, medium-dark gray Soft, slightly silty, traces of "red bed" shale present. micacious in part, fissile in part, carbonaceous in part. Sample overall exhibited no fluorescence, no petroliferous odor/show.

1947'-1950': Limestone, tan to olive-gray Mottled, fine to medium crystalline, fairly friable, fair inter-crystalline porosity. No show.

1950'-1971': Shale, medium-dark gray, soft, gritty, no fluorescence.

Iola Limestone @1971'(-625')

1971'-1974': Limestone, moderate brown to olive-gray, mottled, medium crystalline, fairly friable. No fluorescence or visible hydrocarbon stain. No petroliferous odor or show.

1974'-2006': Layton (A) Sandstone. Off-white to light gray, well sorted with sub-angular to sub-rounded grains. micacious, argillaceous in part. Glauconite observed in few samples. No oil stain, but traces of black bitumen on few sample surfaces. No gas observed popping out of rock samples, but a nine unit gas kick was observed at approximately 1988'. No fluorescence, no petroliferous odor or show. This sand section is very shaly, and is not of commercial value.

2006'-2042': Layton (B) Sandstone. Off white to light gray, very fine to fine grained. Well sorted with sub-angular to well-rounded grains. Extremely friable. Excellent intergranular porosity. Gas bubbles were observed popping out of a select few rock samples. Overall, no visible petroleum stain. Few samples exhibited dull, mottled hydrocarbon fluorescence but had no cut, no petroliferous odor/show observed. It should be noted that a nineteen unit gas kick was observed at 2008' and the hot wire alarm went off at 2028' with a sixty-plus unit gas kick (off scale). This section has good permeability as attested by the mud cake throughout this section. This section should definitely be considered for commercial gas production.

JUL 2 2 201

Top of Kansas City Limestone @2042'(-696')

2042'-2068': Limestone, pale brown to olive-gray Fine to medium crystalline, mottled, fair friability with fair, inter-crystalline porosity exhibited in some samples. Shale (15%) medium-dark gray, silty, micacious Sample overall has approximately 60% variegated, even mineral fluorescence. No stain, no petroliferous odor or show.

2068'-2116': Limestone, grayish-orange-pink to yellowish-brown. Fine to medium crystalline, fairly friable with scattered, pinpoint to vugular porosity present. Very fossiliferous, pinpoint to mottled surface oil stain on few samples. Traces of light gray sandstone present, calcareous shale present throughout. Sample overall exhibited a 20-25% variegated, even to mottled mineral fluorescence. No petroliferous odor or show.

• Jet Pits @2110' (January 4th, 2011 @ 1:30pm. Resume drilling at 4:45pm).

2116'-2154': Limestone, dark yellowish-brown to olive-gray Fine crystalline, hard, to fairy friable, sucrosic. No visible inter-crystalline porosity. Few samples with pinpoint to mottled, medium-brown oil stain on surface. No saturation on interior of freshly broken sample surfaces. Shale approximately 20%, medium-dark gray to dark gray Soft, fissile in part, slightly carbonaceous, calcareous in part. Overall, trace of even, bright yellow mineral fluorescence. No cut, no petroliferous odor or show.

2154'-2156': Stark Shale. Dark gray to black, very carbonaceous with many calcite veins running throughout many individual rock samples.

2156'-2200': Limestone, pale yellowish-brown to olive-gray Fine crystalline, fair to good friability. Few samples with mottled, light brown oil stain on surface with some saturation inside freshly broken surfaces. Overall, saturation poor to fair, less than 2% dull, mottled hydrocarbon fluorescence. Very slow, poor, uneven milky blue cut. Slight petroliferous odor with very weak show. Shale, medium-dark gray Soft, fissile, scattered throughout section.

2200'-2204': Shale, dark gray, soft, fissile.

2204'-2206': Hushpuckney Shale. Dark gray to black, very carbonaceous, extremely fissile.

Top of the Hertha Limestone@2206'(-860')

2206'-2270': Limestone, pale yellowish-brown to olive-gray Fine crystalline, fair to excellent friability. Pinpoint vugular porosity on some sample surfaces. A drilling break was encountered at 2212'-2217'. Description of the interval is as follows:

Limestone, pale yellow brown to olive-gray, fine to course crystalline, two distinct oil show present within the lime. First show: Limestone, fine crystalline, excellent friability, pinpoint and vugular porosity exhibited on many samples. Light brown oil stain on many samples. Good to excellent saturation, good free oil show with wet hydrochloric acid cut. Second show: Good to excellent friability. Pinpoint and vugular porosity present, fine to coarse crystalline. Dark, heavier oil appearing in mottled patches on sample surfaces. Fair saturation. Cuts are as follows:

JUL 2 2 2011

Light oil sample exhibited fast, even milky blue cut with faint to fair residual oil show to tray after cut.

Second, heavier oil exhibited fairly fast, uneven milky blue cut with no residual oil to tray after cut. Overall, sample exhibited 20-25% variegated. even to mottled hydrocarbon fluorescence. Strong, petroliferous odor, fair show. This section also exhibited a ninety-plus unit gas kick when drilled and had good residual carry-over of the gas kick to TD. It should be noted that there appears to be a gas effect on the compensated density/neutron log from 2222'-2233'. This same zone exhibits good separation between the medium and deep induction curves, but nothing shows up on the micro log, so this may not represent a permeable zone, but some type of secondary porosity (such as fracture porosity). There was a show of oil in this zone which exhibited poor saturation and less than 7% hydrocarbon fluorescence. and poor, uneven cut in samples. Recommendation: Because of the oil and gas show and the permeability indications, as well as the overall appearance on the electric logs, I would complete the 2212'-2217' for commercial production. The 2222'=2233' interval probably needs to be examined further in an offset well before making any attempt to complete this zone, due to the problematic nature of its productive capabilities.

2270'-2288': Shale, medium-dark gray to dark gray to black. Fairly soft, very carbonaceous, very friable. Traces of pyrite and vitrain coal in sample. Limestone present, approximately 10% pale, yellowish-brown, fine crystalline, good friability. Pinpoint porosity on some sample surfaces. No oil stain on samples, no petroliferous odor or show.

Lenepah Limestone @2288'(-942')

2288'-2290': Limestone, olive-gray, fine to medium crystalline. Fairly hard, slightly sucrosic, no fluorescence, no petroliferous odor or show.

2290'-2296': Shale, medium-dark gray

2296'-2316': Cleveland (A) Sandstone. Light gray, very fine to fine grained. Well sorted with sub-rounded to well-rounded grains. Very friable, glauconitic, argillaceous in part with some shale laminations present. No fluorescence, no petroliferous odor/show.

2316'-2335': Cleveland (B) Sandstone. Light olive-gray, fine grained, extremely friable. Very clean, almost unconsolidated sand. micacious, glauconitic, few gas bubbles observed in samples. Overall, fair to good flash odor in samples. No stain, fluorescence, or petroliferous show. Recommendation: there was a forty-eight unit gas kick at the top of this section, which kept the hot wire pegged out to TD. Because of this, coupled with indicators from the electric logs, I would complete this zone for commercial gas production.

2335'-2356': Shale, medium to medium-dark gray, slightly silty, soft, very friable, calcareous in part. Traces of inter-bedded limestone.

Top of Altamont Limestone @2356'(-1010')

2356'-2384': Limestone, pale yellow-brown to olive-gray Fine to medium crystalline. Hard, dense, sucrosic, tight, fossiliferous, no visible porosity. Traces of medium-dark gray shale present. Less than 10% variegated, even mineral fluorescence. No petroliferous odor/show.

TD 2384' @ 7:50am, January 5th, 2011.

(Mark D. Brecheisen)

Mark Brehouer.

RECEIVED
JUL 2 2 2011