

~~ST. LUCIE~~ (ST. LUCIE)  
CHS

BID FORM  
CONTRACT NO. C89-0182-R

If this bid is accepted, the undersigned bidder agrees to complete all work under this contract within 160 calendar days from the date established in the "Notice to Proceed with Contract Work".

	QUANTITY	UNIT PRICE	TOTAL
1. Mob. & Demobilization. St. Lucie County	6 (estimated)	Lump sum \$1800 <sup>00</sup>	
2. Mob. & Demobilization. Broward County	6 (estimated)	Lump sum	
3. Mob. & Demobilization. Martin County	3 (estimated)	Lump sum	
4. Drill nominal 6" ± Borehole (Per Foot)	3,000'	\$12.75	150
5. Core 2" Nominal Borehole (Per Foot)	2600'	\$15.00 <sup>63</sup>	945
6. Splitspoon Sample 2" Nominal Borehole (Per foot)	400'	\$7.20 <sup>62</sup>	446
7. Furnish/Install Casing, 2" PVC, Schedule 40 (Per Foot)	3,000'	\$1.50	
8. Furnish/Install 2" PVC, Schedule 40, .020 Slot Screen (Per Foot)	260'	\$3.00	
9. Furnish/Install Gravel Pack, 8/20 Gr. Silica (50 lb. bg.)	200 bgs.	\$6.00	
10. Furnish/Install Grout Type I Portland (100 lb. bgs.)	600 bgs.	\$8.50	
11. Standby Time (P/hr.)	50 hrs.	\$65.00	
12. Well Development (P/hr.)	30 hrs.	\$80.00	
13. Other Work (P/hr.)	20 hrs.	\$90.00	
TOTAL			

Grand Total Price for Contract \$ \_\_\_\_\_

Written Amount \_\_\_\_\_



PROJECT St. Lucie WELL NO. CH5 DATE 2-15-90  
3612

TIME	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
0800	met drillers at Holiday Inn
0840	Drillers fuel up enroute to site (midway + '70)
0910	Heading SW on 70
0925	arrived at site
0937	Setting up rig a little further from canal $\approx 10'$
1010	Filling mud pit w/ canal H <sub>2</sub> O
1020	Cleaning split spoms
1040	Begin Spoon #1 0-2' 22 blows 0-.5 sand + grain .5-1.5 gray sand, 1.5-2 brown sand
	Spoon #2 2-4' gray/brown sand 80% recovery sandy clay, roots (brown to gray)
	Spoon #3 4-6' 80% gray sandy clay. Clay %age increase + trace limonite (? pebble?)
	Spoon #4 6-8' Hole is tight in clay interval. As above 100% recov.
	Spoon #5 8-10' many blows 100% Sandy gray, fine clay
	Spoon #6 10-12' ~244 blows into water. Shelly, sandy limestone: 100% 10-10.5 Coarse sand (transitional 10.5-10.5 clayey sand 10.7-12 - shelly, sandy marl (no white clay)
1100	
	Spoon #7 12-14' Sandy shell (mostly shell) 100%
1110	Driller washing out hole to 14' using 4" drag bit mixing <sup>preparing to</sup> bentonite mud.
1145	Reaming hole
1220	cleaning hole in shelly interval
1227	Tripping out to resume spooning
	Spoon #8 14-16' 14'-15' questionable ~15 blows Driller felt hard layer at 15' 20% recovery 14-15 missing. 15-16 gray sand, coarser shell fragments

PROJECT St. Lucie WELL NO. 445 DATE 2-15-90

(2)

TIME	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
1235	Spoon #9 16-18' 130 blows 90% recovery 16-17' very coarse shell, poss. contaminant 17-18' fine-med gray sandy shell
	Spoon #10 18-20' started getting hard at 19', 100% gray sand, <sup>50%</sup> fine-med grained shell, <sup>40%</sup> 10% mud
1255	Driller preparing to wash out hole to 20'. (4" drag bit)
1320	Tripping in for next spoon Spoon #11 20-22' ~ 50 blows * 60% recovery 20-21 no sample 21-22' gray sand + shell as above
	Spoon #12 22-24'
1330	Spoon #12 22'-24' harder @ 23' - 100% recovery Same as above (gray sand, shell, trace of mud/silt)
	Spoon #13 24-26' still hard spooning, fine-med shell + sd. prob lot of compaction. @ 25.5' formation not yielding; 25.5'-26'; 103 blows As above; increased clay/mud 25.5-26' - 7%
1345	Spoon #14 26-27.5'. Stop spooning to clean hole. dark gray sand + shell, trace clay/mud. High probability of uphole cavings. To this depth, formation has taken ~ 50+ gallons of drilling fluid.
1400	Mixing more bentonite mud. Circulation to clean hole. @ 23' lots of coarse shell in returns.
1423	tripping out of hole. Spoon #15 28'-30', 20% recovery. Some sample fell out spoon bottom as it was coming out of hole. 28-29'-missing. 29-30' fine-med gray sand
1434	Spoon #16 30-32' 100% recovery fine gray sand. Starting to get inc. fines with depth
1445	Spoon #17 32-34' 100% Fine gray sand, 20% silt/mud. Trace of shells 33.5'
	Spoon #18 34-36' Fine-ex. fine silty sand, trace mud. A few whole (small) bivalve shells. Some fine phosphate particles

PROJECT St. LucieWELL NO. CH5DATE 12-15-96

\* = excellent recovery

TIME	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
1500	Spoon 19 36-38' Driller washing 28' to 38'
	100% recovery 36-37' as above
	37'-38' Fine silty sand w/ layers of white shell. Semi-consolidated at 37'-38' - found bits of sandstone cemented w/ shell in mud pit while circulating at 38'
1540	Tripping out of hole
1555	Spoon # 20 38-40' 55% recovery
	39'-40' silty gray sand w/ shells
*	Spoon # 21 40-42' 100% recovery
	40-41 - green silty clay
	41-41.8' green clay w/ interbedded organics (black)
	41.8-42 fine gray silty sand w/ white shell pieces.
	Sharp contact
*	Spoon # <del>22</del> 42-44' 100% recovery
	42-42.5 shelly, sandy mud
	42.5-43 gray green clay
	43-43.5 - fine sand, white shell, trace mud
	43.5-44' fine muddy sand & clay <sup>Few pieces of micritic LS</sup>
*	Spoon # 23 44-46' 100% recovery
	44-45 fine sand shell, coarse black sand at bottom
	definitely containing → 45-45.8 dry green clay w/ a couple sandy layers
	45.8-46 dark gray med gr sand (quartz) w/ trace of shell
*	Spoon # 24 46-48' 100% recovery
	46-47.9' Black shelly sand, med grain
	47.9-48' Dry green clay
	Spoon # 25 48-50' 100% recovery
1650	Fine-med silty sand w/ white shell pieces
	Spoon # 26 50-52' Driller felt hard layer at 51' 100% recov.
	Fine-med black to gray sand. <10% med. white shell pieces (1-4mm)



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PROJECT St Lucie WELL NO. CH5 DATE 2-16-90

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
0745	Arrived at drill site
0800	Drillers on site. Filling rig w/ diesel Call to Morty.
0815	Drillers mixing mud. preparing to try a core run Yesterday's TD @ 54' w/ split spoon.
0828	Running 4" drag bit into hole to tag bottom
0834	Tagged @ 54'. Circulating & mixing Bentonite mud. (Quick-gel) added ~ 1 quart (?) E-2 mud polymer
0903	Running in. Tripped out of hole. Running in 10' core barrel w/ 8' sub; 20' DP#1. Trying to work core barrel past 35'. Hole is tight (4" drag bit.). Circulating through core barrel and letting DS fall slowly down the hole.
0912	adding 20' DP#2, DS = 58' not including 8' throw on Kelly. Core on bottom @ 54'
0920	<del>Running</del> <sup>Circulating</sup> @ 54'
0925	Coring @ 54'
0932	Coring @ 57'
0934	@ 58'
0938	@ 60'
0942	stop Core Run #1 @ 64'. Tripping out of hole Core # 1. 54-64' 10% recovery. Clay, semi consolidated fine gray sand + shell pieces
1001	Will try short 2' core run. Running pipe back in hole. <del>fill</del> fill tight @ 35'.
1009	Trying to wash core back to 64'. lot of material in hole last 10'. probably fell out of last core run
1012	Start Core Run #2
1014	Stop Core Run #2
	Core # 2. 64-66' 100% 64-65.5' green gray clay. 65.5-66' sandy gray silt + shell

#1  
6-2-10

#2

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PROJECT St. Lucie WELL NO. C+5 DATE 2-16-90

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
1045	Mud too thick - thinning it.
1050	Core barrel plugged. tripping out
1105	Tripping core barrel back in. Desander on. Cleaning out front partition of mud box + pumping down box to add more water to mud.
1119	Mixing EZ mud. Fletcher calls Hydrowell office. 1-800-226-3370
1143	Still circulating. Waiting for Demob. decision from Hydrowell. Will notify Marty so he can discuss w/ Bobby Trasley.
1203	Call Marty. call interrupted. Coring @ 66'
1209	stop coring @ 6' when bit plugged. Tripping out w/ Core #3 66'-72' 30% recovery Green gray clayey silt w/ a few shell pieces (1-3cm)
1220	Due to poor core recovery we will go back to spooning now.
1229	Spoon # 28 72'-74' 20% recovery 72-73.5' missing. Only little mud + shell pieces + sand 73.5-74' gray clayey silt Spoon # 29 74'-76' 19 blows 100% 74-75 clayey, liney mud 75-76 silty clay, occasional shells (oyster)
1302	spoon # 30 76-78' 97' blows. Driller to wash out hole to 78' 100% recovery 76-77.2' clayey silt w/ shells 77.2-78' dk gray to black med grained sand (oyster)
1330	washing out hole ... (4" drag bit)
1350	Tripping out of hole
1357	Tripping in
1437	Spoon # 31 78-80' 80% recovery 78-78.8 sandy shell coarse 78.8-79.3 sandy shell hash, more fines Phosphate. 79.3-80' fine-med sand + shell no mud
1437	Can't get spoon back into same 1 1/4" hole. Shell

Screen 75-85



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PROJECT St Lucie WELL NO. CH5 DATE 12-16-90

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
	Zone has probably caused hole to collapse in. Will try running core.
1440	Tripping in core barrel. Tight at ~72'. Mixing in more EZ mud polymer
1450	Start Core #3
1500	Stop Core #3
	Core #3 80-85' 90% recovery silty, sandy shell marl
1520	Coring @ 85'
1536	Stop Coring @ 95'
	Core #4 85-95' 45% recovery Top 50% is sandy shell hash Bottom 50% is fine, silty shelly marl w/ thin <sup>large</sup> pecten shells
1545	Tripping back into hole. Still very tight @ 72-78'.
1616	Back down to 94'. Cleaning hole. Mixing more EZ Mud
1618	<del>Stop</del> Coring @ 95'
1632	Stop Coring @ 105', Tripping out w/ Core #5 CORE #5 95-105' 30% recovery. White shelly sandy lime mud <del>sem</del> (marl) semi-consolidated
1649	Don & David Fletcher off site to call Hydrowell & Beth
1715	Back on site
1730	Coring @ 105'
1745	Stop Coring @ 115'
1757	CORE #6 105-115' 100% shelly limestone w/ echinoids. <sup>Moderately</sup> <del>slightly</del> consolidated
1810	Coring @ 115'
1830	TD @ 125'. Core stuck in hole
1835	Core free. Tripping out. Getting dark. CORE #7 115-125 30% as above TD @ 125'
	Running 40' blank 125-85'; 10' screen 75-85' & 75' csg 0-75

WELL DRILLER'S LOG

(8)

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PROJECT St Lucie WELL NO. CH5 DATE 2/16/90  
3612

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
1850	Pipe not going past 50'. Put top of casing under top head drive and trying to push it down into the well.
1915	Screen will not go into hole.
	Don informs Hydrowell drillers to either 1. Set screen from 75'-80' or
	2. Cement hole to surface.
	on Saturday before demob.
1930	Don and Hydrowell drillers off-site