



March 1, 2007
City of California City
California City, California

Attention: Tony Langin
Public Works Supervisor

To Whom It May Concern:

The reason for this letter is to establish reasons for changes and increases to the Well #16 project. The original contract was in the amount of **\$653,970.00**. The original contract included phase 1 of a mobilization and demobilization of a test hole drill rig. The drilling of 1- 1000' test hole, dual wall reverse circulation drilling, air lift water testing, mud boring for geophysical logging, and abandonment of test hole.

Phase 2 included the drilling of an 800' production well, mobilization/demobilization of production drill rig, 50' conductor casing, drill 17.5" pilot hole with flooded reverse circulation drilling method, ream borehole to nominal 28", furnish and install 16" x 0.060 copper bearing louvered well screen, furnish and install 16" x 3/8" wall mild steel blank casing, furnish and install 10 sack sand/slurry sanitary seal, perform zone testing at 5 different zones, perform development by swabbing and airlifting with drill rig, furnish, install and remove test pump, perform development pumping, perform step test, perform aquifer test pumping, furnish and install water lube pumping equipment capable of 1000 gpm, 250hp motor, 480' of 10" water lube drop pipe, 600 amp meter main, MCC, controls, Edison cement base, MCC cement base, pump base & underground conduits.

Phase 3 included Professional Services, such as Geologist to observe test hole drilling including vehicle and per diem, E-log, natural gamma, guard log, sonic, Caliper log on reamed borehole, Hydro geological Analysis Report/Sieve Analysis, Well design, Water quality testing---General Mineral, General Physical, Inorganic Chemical Analysis, Title 22, Geologist to collect water samples. This was the original scope of work and contract amount of **\$653,970.00**. After starting the job and the availability of water became an issue, we consulted with Mr. Dan Allen about the possibilities of drilling more test holes.

It was decided and agreed upon by Mr. Dan Allen and Layne Christensen Co. to Proceed with test hole #2 at a different location. This site was located near the cities maintenance yard. The test hole was drilled to a depth of 1000' and water quality tests were taken as well, it was known at that point the second test hole would not provide adequate amounts of water, this was an additional cost from the original contract of **\$59,000.00** and the Geologist Professional Services amounted to **\$12,500.00** totaling **\$71,500.00**. Again, this was not in the original contract, but agreed by Mr. Dan Allen to proceed.



After the second test hole evaluation, finding insufficient water quality and quantity it was determined and agreed upon by Mr. Dan Allen to proceed with a third test hole. This location was moved to Great Circle and Isabella where Layne Christensen Co. drilled a third test hole to a depth of 1000' and water testing and quantity proved to be to the Cities advantage. Again, this was out of the original scope of work and an additional cost of **\$58,800.00** along with the Geologist Professional Services amounting to **\$10,750.00** totaling **\$69,550.00**. These two additional Test Holes were above and beyond the original contract and amounted to **\$141,050.00**. After conversing with Mr. Dan Allen about our possibilities it was agreed to drill a production well at Great Circle and Isabella because of the quality and quantity of water. The production Well #16 was drilled to a depth of 660 feet. The production well was drilled and casing installed. Well #16 was then installed with a development test pump and various test-pumping rates were done. After lengthy test pumping it was determined that Well #16 would be designed for 854 gallons per minute @ 694' of head. The design of the pump changed from the original contract design due to evidence found from the test pumping.

The original contract for furnishing and installing the water lube pumping equipment capable of 1000gpm, 250 horsepower motor, 480ft of 10" water lube drop pipe, 600 amp meter main, MCC, cement vase, MCC cement base, pump base and underground conduits was estimated at a price of **\$156,150.00**.

\$77,882.00 was the original cost of putting in the pumping equipment. Instead of the original 1000 gallons a minute pump set at 480'. The new design would be 854 gallons a minute and a setting of 560'. The new changes to the pump design and setting added a cost of **\$9,731.00** to the original contract, totaling **\$87,613.00**.

\$78,268.00 was the original cost to furnish and install 600amp meter main, MCC, controls, cement and underground conduits. **\$6,000.00** of this price has already been billed with the pumping equipment installation. The **\$6,000.00** is for the concrete base and sounding tubes around the well. Take **\$6000.00** off (already been billed) of **\$78,268.00** equals **\$72,268.00**

Then it was decided the City of California City wanted a VFD (variable frequency drive) for controlling the gallons per minute on the Well #16 pump. Layne Christensen at that point gave a dollar amount with the differences from the original contract. The dollar amount for the changes in the electrical components totaled **\$14,795.00**, totaling **\$87,063.00**. With these two changes to the pump design and electrical design the total went from the original price of **\$156,150.00** to **\$180,676.00**, a difference of **\$24,526.00**.

The City of California City then wanted Layne Christensen to install Discharge piping, valves, flow meter, labor and concrete to well #16. It was then decided and agreed by Mr. Tony Langin and Layne Christensen that the City would be responsible for the pipeline tie in at the Cities Main line. The cost for installing these fore mentioned items would be **\$21,881.00**.

In a nutshell, I have sent invoices totaling **\$667,794.00** of which **\$573,988.00** has been paid in full. The original contract again, was **\$653,970.00**. We have gone over the



Layne Christensen Company

Professional Services for Water Systems

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original contract by **\$13,824.00**. With this **\$13,824.00** being over contract we still have to figure in all the electrical equipment which added up to **\$87,063.00**. Also to be figured is the discharge piping in the amount of **\$21,881.00**. This brings the total over and above the original contract price of **\$653,970.00** to an additional **\$122,768.00**. Making the new contract total **\$776,738.00**.

Purchaser

Contractor

City of California City

Layne Christensen Company

By: _____

By: 

Title: _____

Title: BRANCH MANAGER

Date: _____

Date: 3/5/07

Sincerely,

Brant Israelson

Brant Israelson
Layne Christensen Company
Barstow Branch