



AGENDA REPORT

Meeting Date: March 2, 2010
Item Number: G-14
To: Honorable Mayor & City Council
From: Shana Epstein, Environmental Utilities
Josette Descalzo, Water Quality Specialist

Subject: ACCEPTANCE OF THE CONTRACT WORK FOR THE DRILLING AND TESTING OF A TEST HOLE FOR THE CITY OF BEVERLY HILLS WITHIN THE CITY OF WEST HOLLYWOOD BY SOUTH WEST PUMP & DRILLING, INC. IN THE FINAL AMOUNT OF \$258,283

Attachment: 1. Consultant's Findings of the Drilling and Testing Operations
Robertson Yard Exploratory Borehole
2. Notice of Completion

RECOMMENDATION

Staff recommends that the City Council accept the described work with South West Pump and Drilling, Inc. and authorize the recordation of the Notice of Completion.

INTRODUCTION

This report provides information to the City Council for acceptance of the contract work in the final amount of \$258,283.00 and authorization for the recordation of the Notice of Completion by the City Clerk with Los Angeles County Recorder. The project is part of the City Capital Improvement Program for FY 09/10.

DISCUSSION

On February 17, 2009, a contract in the amount of \$258,283.00 was awarded to South West Pump & Drilling, Inc. (Contractor) on the basis of sealed competitive bids received after public advertising for the drilling of an exploratory borehole (test hole) at the City's Robertson Corporate Yard.

The test hole is part of the Water Utility's goal to find new groundwater resource for the City. The Contractor drilled, tested and destroyed the test hole between September 9 and December 29, 2009. City and Richard Slade and Associates staff inspected and monitored the work of the contractor. Results of the tests were analyzed by Richard Slade and Associates to determine the feasibility of constructing a new production well at the site.

Prior to the test hole drilling, a conductor casing was installed at the drill site for the purpose of preventing washouts of the borehole walls in the upper 50 ft of the test hole. Test hole drilling started on October 21, 2009, below the bottom of the conductor casing. The drilling of the test hole advanced to a total of 851 ft below grade surface (bgs).

After drilling was completed, the Contractor started to build isolation casings to test different aquifer zones. Five aquifer zones were evaluated. Testing was done on each zone and was sealed after testing was completed. All testing was completed by November 24, 2009.

The Contractor removed the drill equipment from the site on December 7, 2009. By December 29, 2009, the test hole was permanently sealed and destroyed by pouring cement into the open borehole from a depth of 5 ft. to 240 ft. bgs. These destruction activities were completed in accordance with the current guidelines of the Department of Water Resources (DWR) and the Los Angeles County Department of Health Services (LACDHS). The County inspector and Richard Slade and Associate staff observed the placement of cement into the test hole.

The Water Utility and Richard Slade and Associates staff inspected the work and have assured that the work was completed according to the contract documents approved for this project. Richard Slade and Associates evaluated the groundwater quality and observed indicators of the water flow. From this analysis the hydro-geologist determined what zones are preferable due to water quality and estimated the water flow of a potential well may be equal to the flow of one of the City's existing deep groundwater wells. The pumping rate that is estimated is anywhere from 300 to 500 gallons per minute (gpm). Richard Slade & Associates stated that a well at this site would be feasible. It is important to note a new well does not necessarily increase the City's water production one for one, but would increase overall production and improve optimization of the well field. In addition, the water is considered acceptable quality even though high total dissolved solids were observed because of the existing reverse osmosis treatment plant's capabilities.

Staff has proposed drilling a well and bringing the water back to the City's treatment plant in the Water Enterprise Fund's FY 2011 Capital Improvement Program for about \$1.5 million.

FISCAL IMPACT

The original contract purchase order for this project was \$288,283.00 with a contingency allowance of \$30,000.00. Thus far, the amount paid on the contract is \$237,756.77 with the retention balance of \$20,526.23 to be paid 35 days after the recordation of the Notice of Completion. The purchase order will have a balance of \$30,000.00 after all invoices have been paid.

Funds for this project were provided in the 2009-2010 fiscal year Water Enterprise Fund.



David Gustavson
Approved By

Attachment 1



CONCLUSIONS

The results of isolated aquifer zone testing with regard to potential pumping rates, drawdowns and specific capacities of the tested aquifer zones provide a general indication of potential permeability conditions of the sediments encountered in the test hole. The results indicate that the sedimentary section that might be screened in a new well would likely have sufficient permeability to support moderate pumping rates in the new onsite water-supply well. Key factors that were found to be beneficial in determining the feasibility for a new well at Robertson Yard include:

1. Each tested zone cleared up relatively quickly after pumping began.
2. Turbidity in the collected samples was relatively low at the time of zone sampling in Zone Nos. 3 through 5 after only limited development. However, turbidity measurements of all five tested zones were still above the Secondary MCL of 5 NTU.
3. Specific capacities were relatively high in Zone Nos. 2 and 4. No pumping water level data were collected for Zone Nos. 1 and 3, thus a specific capacity could not be calculated for these zones.
4. Hydrogen sulfide concentrations were relatively low (less than 0.3 ppm) for each of the tested zones, and may represent baseline conditions.
5. Methane concentrations were detected in relatively high concentrations in only the two deep zones, Zone Nos. 1 and 2, at depths of 756 to 776 ft and 642 to 662 ft, respectively.
6. Water levels recovered close to pre-test static water levels in relatively short time periods after each zone was pumped.
7. Results of laboratory analyses for the five tested zones revealed that the all detected analytes of the three shallowest zones (Zone Nos. 3 through 5) were below their respective MCLs, with the exception of arsenic and manganese in Zone No. 5. The two deeper zones (Zone Nos. 1 and 2) had high concentrations of EC, TDS, and boron. Aluminum was detected only in Zone No. 2, and its concentration was above its respective MCL.
8. The field temperature of the groundwater pumped from the isolated aquifer test zones ranged from 76.5°F in Zone No. 5 (the shallowest zone, at 287-307 ft), to 84.9°F in Zone No. 2 (the second deepest zone, at 642-662 ft).

It is considered hydrogeologically feasible for the City to attempt to drill and construct a new municipal-supply well having an acceptable pumping capacity and an acceptable water quality



at the subject Robertson Corporate Yard property. Based on preliminary data acquired from test hole drilling and isolated zone aquifer testing, the following summary provides anticipated conditions for a possible new onsite municipal-supply water well in the future:

1. Groundwater is expected to occur under semi-confined to confined conditions.
2. A current static water level depth on the order of 50 to 100 ft bgs is anticipated.
3. A pumping rate in the range of 300 to perhaps 500 gpm might be achievable. Hence, a new well at the subject property would tend to be capable of supplying the same annual volume of groundwater (in acre-feet per year) to the City's treatment plant as does each of the City's other existing municipal-supply water wells.
4. An estimated current specific capacity for the new well of 2 to 5 gpm/ft ddn.
5. Current pumping water levels could be at depths on the order of 200 to 350 ft bgs at an estimated maximum pumping rate of 500 gpm, and using a maximum specific capacity of 5 gpm/ft ddn.
6. Because of the relatively large drawdowns and deep pumping water levels expected in the new well, cascading water conditions could occur when the well is being actively pumped depending on the depth to the top of the uppermost perforations in the new well.
7. Because of poor water quality at depth, including high EC and TDS, as well as elevated concentrations of methane and hydrogen sulfide gases, drilling operations and/or casing emplacement should not occur in a future onsite well to depths below ± 560 ft.
8. The pumped groundwater wellblend is anticipated to have the following characteristics:
 - a. a calcium-sodium-bicarbonate character.
 - b. detectable amounts of hydrogen sulfide odors, but likely no methane.
 - c. a field water temperature of 76° to 82°F.
 - d. TDS and TH values on the order of 500 to 700 mg/L, and 100 to 350 mg/L, respectively.

Attachment 2

THIS DOCUMENT IS OFFICIAL BUSINESS
OF THE CITY OF BEVERLY HILLS AND
ENTITLED TO FREE RECORDING UNDER
SECTION 6103 OF THE GOVERNMENT CODE

Requested by _____

AFTER RECORDING MAIL TO:

CITY CLERK'S OFFICE
Room 190, City Hall
455 North Rexford Drive
Beverly Hills, CA 90210

Space above this line for recorder's use

NOTICE OF COMPLETION

Notice is hereby given that:

1. The undersigned is owner of the interest or estate stated below in the property hereinafter described.
2. The full name of the undersigned is **City of Beverly Hills**
3. The full address of the undersigned is **455 North Rexford Drive, Beverly Hills, CA 90210**
4. The nature of the title of the undersigned is: **In fee.**
5. The full names and addresses of all persons who hold title with the undersigned are:
None
6. A work of improvement on the property hereinafter described was completed on December 29, 2009
7. The name of the contractor, if any, for such work of improvement was South West Pump & Drilling, Inc.
8. The property on which said work of improvement was completed is in the City of **West Hollywood**, County of **Los Angeles**, State of **California**, as is described as:
Drilling and Testing of a Test Hole for the City of Beverly Hills Within the City of West Hollywood, California.
9. The street address of said property is None

Dated: _____

STATE OF CALIFORNIA }
COUNTY OF LOS ANGELES }

Signature of }
Owner or Owners } _____

_____, being duly sworn, says: That he is the _____
of the **City of Beverly Hills**, the corporation that executed the foregoing notice as owner of the aforesaid interest or estate
in the property therein described; that he makes this verification of behalf of said corporation; that he has read said notice
and knows the contents thereof, and that the facts therein stated are true.

Signature of
Corporate Officer
Named Above X _____