

26th October, 2016.

REF: ICB NO. GDC/ICB/DPL/014/2016:2017

TO: ALL BIDDERS

Dear Sirs,

ADDENDUM 1: CLARIFICATION

**RE: TENDER FOR SUPPLY FOR SUPPLY OF DETERGENT FOR GEOTHERMAL WELLS
- GDC/ICB/DPL/014/2016:2017.**

In response to bidders request for clarification, GDC wishes to provide the following clarification;

Bidder's Question 1

Kindly give us the chemical formula or CAS number of the type of detergent you are interested in since there are many types in the market, most are in granular form that are eventually dissolved so we want to know the one in solution form you are interested in.

GDC Response

The detergent should be a solution with the following characteristics as indicated in technical specifications section VII page 3-73.

- | | |
|---------------------------|---------------------------------|
| • Physical Appearance | Light (pale) brown liquid |
| • pH | 9-10 |
| • Density | (g/cm ³) 1.01 -1.06 |
| • Conductivity | (□mhos/cm) 20,000 – 25,000 |
| • Viscosity (cP) | >600cP |
| • Chloride (ppm) | ≤60 ppm |
| • Stability at 250°C | Stable |
| • Foaming Characteristics | Not less than 20 mm |
| • Sludge formation | Should not form sludge |

Bidder's Question 2

Following the above mentioned tender, we seek the clarification of the following items: - The stable temperature, Chlorine ppm, and Physical appearance.

GDC Response

i. Stable Temperature

The detergent should be stable at 250 °C as indicated in technical specifications section VII page 3-73.

ii. Chlorine ppm

The detergent Chlorine ppm should be ≤60ppm as indicated in technical specifications section VII page 3-73.

iii. Physical appearance

The detergent physical appearance should be light (pale) brown as indicated in technical specifications section VII page 3-73.

Bidder's Question 3

If possible can you let me know the well depth and the temperature of drilling well? I do not think the well can reach to 250 degrees as in China our well can reach to 4,000 but the temperature is only 120 degrees.

GDC Response

Sample temperature and depth of one completed well at Menengai is as provided below for reference;

Well depth		Temp
From	To	°C
0	100	55
100	200	67
200	300	85
300	400	106
400	500	130
500	600	181
600	700	209
700	800	228
800	900	243
900	1000	255
1000	1100	265
1100	1200	274
1200	1300	281
1300	1400	288
1400	1500	295
1500	1600	301
1600	1700	306
1700	1800	311
1800	1900	316
1900	2000	321
2000	2100	325

Bidder's Question 4

The technical information are contradictory, the viscosity is 600cp which mean is very thick but the physical appearance is light brown liquid is total mistake.

GDC Response

The viscosity of the detergent should be $>600\text{cP}$ and the appearance light (pale) brown as indicated in technical specifications section VII page 3-73.

Bidder's Question 5

The product is transparent and has high viscosity that means molecular weight of raw material is large based on its viscosity general product density will be not less than 1.1

GDC Response

The density for the detergent should be between 1.01 -1.06 as indicated in technical specifications section VII page 3-73 item 3.

Bidder's Question 6

The product has high conductivity and low chlorine ion. If used surfactants, the general chlorine root of the product should be 400 surface active agent of high viscosity and low chlorine ion its conductivity is generally less than 10,000 and the density will be large (repeat the first point of the conflict). If the chlorine ion and viscosity is low only by reducing the effective component and adding sodium hydroxide alkalinity regulator the conductivity can reach the requirement

GDC Response

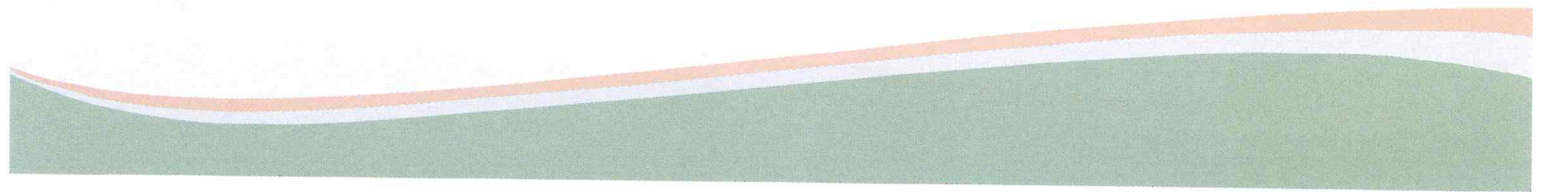
The conductivity of the detergent should be between ($\square\text{mhos/cm}$) 20,000 – 25,000 as indicated in technical specifications section VII page 3-73 item 3.

Bidder's Question 7

In previous years the chlorine level of the required sample has been equal or less than 100ppm, this has been changed to equal or less than 60ppm as a professional chemist the change is significant in your operations yet to achieve that parameter you require a heavy process to de-ionize water hence pushing the cost of production unnecessarily high, as a professional the parameter for conductivity has been capped to be between 20,000-22,000 micro ohms. In the best of my knowledge the parameter should be either equal or less than 20,000 or equal or less than 22,000 micro ohms, this is because the lower conductivity the better the detergent as far as stability in heat is concern

GDC Response

The detergent conductivity should be 20,000 – 25,000 ($\mu\text{mhos/cm}$) and chlorine level should be ≤ 60 ppm as indicated in technical specifications section VII page 3-73 item 4 & 6.



Bidder's Question 8

The condition for experience is ridiculous because ever you started your operations only one firm has been getting the tender; I feel the following should be the requirement for qualifying; Giving a responsive sample NBO, banks bid bond signifying the bank is ready to offer finance support, support from other suppliers i.e. our business partners.

GDC Response

Section III of the tender document contains all the criteria that shall be used to evaluate bids and qualify Bidders. In accordance with ITB 28 and ITB 32, no other factors, methods or criteria shall be used. The Bidder shall provide all the information requested in the forms included in Section IV, Bidding Forms.

Bidder's Question 9

In line with clause 7.2 we would like to make a site visit to familiarize ourselves with the sites and other requirements on the ground. We are available for the site visit on 21st or 24th October 2016. Please return which date and time is suitable and the contact person. Further to clause 7.3 upon been granted permission by GDC to visit we [lease and indemnify GDC and its personnel or agents from any liability in respect thereof.

GDC Response

Tenderers wishing to carry out a site visit to Menengai project field are free to do so with prior arrangement with GDC team indicated in the tender document at their own cost. The site visit shall be done between 9.00am and 3.00pm during working days only.

NB: All other requirements/instructions remain unchanged.

Yours Faithfully



PAUL NGUGI
AG. MANAGING DIRECTOR & CEO

