From: Lee, Don
To: Kerang.Sun@CH2M.com
Cc: Chavira, Raymond; Parsons, Scott; Tom Perina (tom.perina@ch2m.com)
Subject: FW: Discrepancies in Survey data
Date: Wednesday, August 28, 2013 5:12:15 PM
Attachments: 08580-GEO-TRACK_9-24-08.pdf
08580-ACAD_09-24-08.pdf

Kerang,

As requested attached is a copy of the original survey report that includes the survey reference information. As mentioned previously the survey was done using Continuously Operating Reference Stations (CORS) real time satellite reference, not a benchmark on the ground, because no consistent benchmark was used for the wells in PVOU and not held to any consistent date. I have attached below an email string from 2009 on elevation surveys for your reference. Also please see below a response from our surveyor, CalVada Surveys, regarding the elevation discrepancy between the old wells and new wells.

"After looking at the data we presented you, we have checks to prove that the elevations we provided are accurate and to standards. After doing the conversions, I can say that the difference in elevations, are not a datum issue. Can you please see how the data you are comparing our data to was obtained? Please call if you have any questions and I will get back to you on the other request. Thanks!!"

Hope this helps. Please call if you have any questions.
Thanks
Don

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From: Lee, Don
Sent: Monday, March 09, 2009 4:13 PM
To: 'Kerang.Sun@CH2M.com'
Cc: Parsons, Scott; John.Dolegowski@CH2M.com; Chavira.Raymond@epamail.epa.gov
Subject: RE: Discrepancies in Survey data

Kerang,

As requested the attached table includes elevations converted to NGVD29 by our surveyor. I will send you a hardcopy when it is received from our surveyor.

Regards,

Don

Don Lee, PG, CHG | Senior Hydrogeologist
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dlee@geotransinc.com

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From: Kerang.Sun@CH2M.com [mailto:Kerang.Sun@CH2M.com]
Sent: Wednesday, March 04, 2009 11:19 AM
To: Lee, Don
Cc: Parsons, Scott; John.Dolegowski@CH2M.com; Chavira.Raymond@epamail.epa.gov
Subject: RE: Discrepancies in Survey data

Don,

Although CDM has not given me a confirmation of the elevation datum yet, it appears to be pretty certain that the differences in elevations between the two surveys were due to the uses of different reference datum. Rather than waiting to hear back from CDM, could you please ask your surveyor to re-send you the survey results by including the elevations in both NGVD29 and NAVD88 systems - I checked our survey records and found that we got the elevations in both systems for the wells CH2M installed and surveyed.

Please ask your surveyor to send you both a hardcopy (or PDF) of the survey results and in Excel table. Please forward us the hardcopy as well. We need to save the original hardcopy with the survey results for future reference.

Thanks,

From: Lee, Don [mailto:Don.Lee@geotransinc.com]
Sent: Tuesday, March 03, 2009 12:28 PM
To: Sun, Kerang/SCO
Cc: Parsons, Scott; Dolegowski, John/SCO; Chavira.Raymond@epamail.epa.gov
Subject: RE: Discrepancies in Survey data

Kerang,

Please send us the additional survey information including survey information from Bush & Associates (e.g., benchmark information, Geotracker data, etc.) if CDM can provide them. According to our surveyor one of the reasons the elevations can differ is that if different benchmarks/datum were used, for example, NGVD 29 vs NAVD 88. NAVD 88 was used for the recent survey as indicated in the survey report. If the other benchmark is known for the old survey, our surveyor should be able to convert them. Then we can see whether there are other problems.

Thanks
Don

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From: Kerang.Sun@CH2M.com [mailto:Kerang.Sun@CH2M.com]
Sent: Tuesday, March 03, 2009 10:23 AM
To: Lee, Don
Cc: Parsons, Scott; John.Dolegowski@CH2M.com; Chavira.Raymond@epamail.epa.gov
Subject: Discrepancies in Survey data
Importance: High

Don,

Thank you for sending us the survey data for the wells recently installed by GeoTrans.

You included in your recent survey the following old wells installed by CDM: MW6-17i, MW6-44, MW6-45, MW6-61, MW6-63, and MW6-71. After comparing the new survey results with the previous survey results (by CDM) for these wells, it appears that there are some big discrepancies, especially with the ground elevation/Top of casing elevations. In general, the differences in y-coordinates (Northing) are smaller than the differences in X-coordinates (Easting). And I think that we can live with the differences, although closer results between the two surveys are ideal. However, the differences in elevations are too big, and will probably cause problems when we try to calculate water levels in the wells from the surveyed elevations for TOC.

I have included a summary table comparing the new and the old survey results for these wells. I have also asked CDM to sent me their survey records. CDM was not able to locate the original survey data for the wells installed in the 1990s and sent me a summary table in the RI report instead. I think that will work too.

Can you check with your survey contractor and see if they can figure out whey there is in general a 1 to 2 feet difference in the surveyed elevations?

Thanks

Kerang

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