

**EXHIBIT**  
**SJC-3**

Project No.  
**27459.000.001**

November 7, 2024

Mr. Chris Neudeck  
Kjeldsen, Sinnock & Neudeck, Inc  
711 North Pershing Avenue  
Stockton, CA 95203

Subject: Geotechnical Explorations  
Sacramento/San Joaquin River Delta

## **DWR EXPLORATION ABANDONMENT STANDARDS**

- References:
1. DWR; California Well Standards, Bulletin 74-90; June 1991; <https://water.ca.gov/Programs/Groundwater-Management/Wells/Well-Standards/Combined-Well-Standards>.
  2. DWR; 2024-2026 Preconstruction Field Investigations Environmental Compliance, Clearance, and Monitoring Plan; DWR Exhibit DCP.X2.1.00005.
  3. MBK Engineers; Comments on IS/MND Soils Investigations for Data Collection in the Delta; Dated January 15, 2020; DWR Exhibit DCP.X1.1.00004, pdf pp. 554-556.

Dear Mr. Neudeck:

As requested, we have prepared this letter to summarize our review of the referenced documents and provide our opinion on the general applicability of the geotechnical exploration abandonment standards applicable to borings and CPTs, as provided in Reference 1.

Prior to commencing preconstruction field investigations, the Department of Water Resources (DWR) is required to prepare a Preconstruction Field Investigations Environmental Compliance, Clearance, and Monitoring plan in accordance with Reference 2. The geotechnical exploration abandonment standards provided in Reference 2 are as follows.

*DWR shall follow the guidelines in its Bulletin 74-90 with respect to the method by which the exploratory borings will be sealed*

The Bulletin 74-90 guidelines were originally prepared for the purpose of protecting groundwater quality by reducing the potential for aquifer cross contamination from groundwater flow between aquifers as a result of a boring, well, or penetration. Although the original purpose of the guidelines was intended to protect groundwater quality, these guidelines also serve to reduce the potential to create detrimental seepage impacts, including impacts through and under levees in the vicinity of the explorations.

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27459.000.001  
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Page 2

Geotechnical activities in the Delta require specific measures to reduce risk associated with mechanical collapse or piping failures of the borehole due to inadequate grouting techniques. The relatively unique geology and history of Delta levees allows them to be considered more as embankments or low-head dams. Additionally, complicating factors potentially present in the Delta can include, for instance, hydraulic head from the adjacent water bodies, localized elevated water tables, complex sand, gravel, and clay lenses as a result of natural overbank deposition, more modern placement of dredged channel materials, and contemporary, geotechnically designed structural improvements.

In our opinion, geotechnical explorations can safely be performed in the Sacramento/San Joaquin River Delta without creating substantive flood control and other risks, provided that both the exploration and exploration abandonment guidelines in Reference 1 are followed. However, improper exploration abandonment techniques in the Delta can create detrimental seepage conditions, particularly within, under, and/or adjacent to levees. If the detrimental impact is severe enough, the structural integrity of the levee could be compromised, leading to increased seepage, decreased slope stability, and potentially resulting in levee failure.

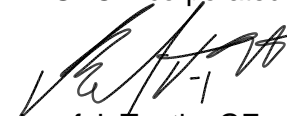
The attached letter from MBK, Reference 3, documents specific incidents of observed reductions in levee performance that were potentially attributed to improper abandonment of geotechnical explorations. It can be particularly difficult to reach the bottom of smaller diameter holes, and to fill holes in sandy materials where bridging can occur. In such cases, the original drilled hole path can be lost and sealing is not effective. Additionally, although there is no direct evidence that exploration abandonment techniques contributed to the recent levee damage at Victoria Island in October 2024, the event cited is an example of a similar situation in which adverse seepage nearly resulting in the failure of a levee.

Measures to reduce risk from each of these conditions can include implementation planning, local soil maps, locally experienced drilling crews, senior geologists and geotechnical engineers at the jobsite, careful documentation, and independent post-completion inspection to identify and correct any improper abandonment techniques.

We strive to perform our professional services in accordance with the generally accepted principles and practices currently employed in the area; there is no warranty, express or implied. If you have any questions or comments regarding this letter, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated

  
Josef J. Tootle, GE



  
Mark Gilbert, GE

jjt/mg/dt

Attachment: MBK Engineers, Comments on IS/MND for Soils Investigations for Data Collection in the Delta January 15, 2020



Water Resources ♦ Flood Control ♦ Water Rights

GILBERT COSIO, JR., P.E.  
 MARC VAN CAMP, P.E.  
 WALTER BOUREZ, III, P.E.  
 RIC REINHARDT, P.E.  
 DON TRIEU, P.E.  
 DARREN CORDOVA, P.E.  
 NATHAN HERSHEY, P.E., P.L.S.  
 LEE G. BERGFELD, P.E.  
 BEN TUSTISON, P.E.  
 THOMAS ENGLER, P.E., CFM  
 MICHAEL MONCRIEF, P.E.

ANGUS NORMAN MURRAY  
 1913-1985

CONSULTANTS:  
 JOSEPH I. BURNS, P.E.  
 DONALD E. KIENLEN, P.E.

January 15, 2020

*Via email: [Delta\\_Soil\\_ISMND@water.ca.gov](mailto:Delta_Soil_ISMND@water.ca.gov)*

California Department of Water Resources  
 1416 Ninth Street  
 Sacramento, CA 95814  
 Attn.: Katherine Marquez

**Subject: Comments on IS/MND for Soils Investigations for  
 Data Collection in the Delta**

Dear Ms. Marquez:

MBK Engineers is the District Engineer to 33 reclamation districts (RD's) in the Sacramento-San Joaquin Delta. As District Engineer, we assist RD's with all issues involving flood control and drainage, the 2 main responsibilities of RD's. We offer the comments below on behalf of our clients, within whose jurisdiction the DWR soils investigation will construct borings and cone penetration tests (CPT's). These RD's are Reclamation District No.'s 3, 150, 551, 755, 756, 813, 830, 999, 2025, 2026, 2028, 2029, 2033, and 2110.

Through our many years as District Engineer, we have experienced problems associated with borings and CPT's that have impacted the ability of RD's to perform their responsibilities. These problems, mainly artesian flow and seepage, have led to increased drainage costs, lost farm income, and levee damage. Even if sealed, as described in the IS/MND we have found that, over time, these seals become compromised and result in seepage. Also, the weight of drill rigs compresses the farm ground which reduces its productivity.

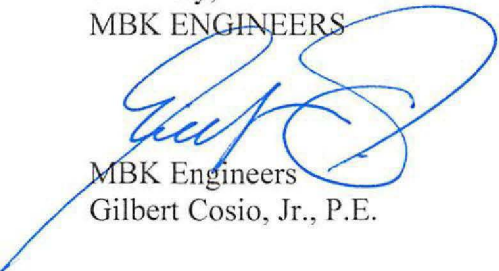
Therefore, we offer the following comments and suggested revisions to the IS/MND:

- All borings and CPT's shall be reviewed and approved by the local RD's. The RD's require DWR to obtain right of entry agreements with private landowners upon whose property these investigations will take place or to provide access to the proposed sites. All data collected shall be provided to the RD's for their use.
- All borings and CPT's within the rights-of-way of federal project levees for which the California Central Valley Flood Protection Board (CCVFPB) is the local sponsor, shall obtain permits from the CCVFPB and section 408 permits as required by the US Army Corps of Engineers.

- The IS/MND shall evaluate the impact and necessary preparations required to deal with artesian flow created due to pressurized aquifers through which the borings will penetrate.
- The IS/MND shall evaluate and describe how the borings and CPT's will be sealed. The current document is vague and does not indicate it will follow procedures dictated by the soil conditions and pressurized artesian flow. We also recommend that the sealing include completely filling the holes with a grout approved by the RD's.

We look forward to your response to our comments and concerns. If you have any questions, or would like additional information, please call me at (916) 456-4400, or email me at [cosio@mbkengineers.com](mailto:cosio@mbkengineers.com).

Sincerely,  
MBK ENGINEERS



MBK Engineers  
Gilbert Cosio, Jr., P.E.

GC/nl  
8888.4 KATHERINE MARQUEZ 2020-01-15

Enclosure

cc: Ms. Suzanne Daggert, Reclamation District No. 3  
Mr. Warren Bogle, Reclamation District No. 150  
Mr. Carel Van Loben Sels, Reclamation District No. 551  
Mr. Douglas Hemly, Reclamation District No. 755  
Mr. David Forkel, Reclamation District No. 756; 2025; 2026; 2028  
Mr. Thomas Herzog, Reclamation District No. 813  
Mr. Tyson Zimmerman, Reclamation District No. 830  
Mr. Tom Slater, Reclamation District No. 999  
Mr. Alan Coon, Reclamation District No. 2029  
Mr. Eric Merlo, Reclamation District No. 2033  
Mr. Dawit Zeleke, Reclamation District No. 2110