

**2. GEOTECHNICAL CLEARANCE PROCESS AND PROTOCOLS, AND TENTATIVE
GEOTECHNICAL DRILLING SCHEDULE**

California Department Of Water Resources

Advancing the Bay Delta Conservation Plan

Delta Habitat Conservation & Conveyance Program



DHCCP Team



Geotechnical Parcel Selection and Clearance Process

1. Determination of Parcels to Survey

DWR will determine which parcels need to be surveyed for potential geotechnical exploration. When and if the parcels will be surveyed depends on factors, including, whether there is a signed TEP, whether adequate days exist to complete the work on the parcel, weather conditions, and whether there is sufficient exploration work to justify mobilization of drilling/CPT equipment.

2. DWR Informs Environmental and Cultural Staff Regarding Potential Dates

Concurrence by environmental and cultural staff on the proposed dates is needed prior to the request being submitted to the survey coordinator. (Please see DWR's Survey Protocol for Assessment of Properties.)

3. DWR Informs Field Survey Coordinator

The Field Survey Coordinator is informed as to which parcels Geotech would like to access for a pre-drilling survey using the Parcel Survey Request Form. (This request form must be submitted to the survey coordinator a minimum of 3 weeks prior to the date that Geotech would like to access the parcel.) The Coordinator will then inform Geotech if there are any other disciplines visiting the requested parcels, either prior to or during the week of Geotech's request. If no other survey teams have planned to go on the selected parcel(s) then the date Geotech initially requested from the field survey coordinator will be the survey date. If the date has been requested by another discipline, Geotech will attempt to visit on the same date in order to minimize the number of days on the parcel.

When the survey date has been selected, Geotech will transmit the pre-survey Daily Safety Sheet to the field survey coordinator at least 2 days prior to the survey date. The field survey coordinator will next be contacted on the day of the survey before entry of the first parcel and after the departure of the last parcel. Geotech will coordinate with DWR Real Estate and property owners in the field to discuss location of the boring.

4. DWR Performs geotechnical survey of the parcel for drilling.

A survey checklist and consultation with landowner will be used to verify access to the drilling location and safety issues such as utilities, underground and overhead, access conditions, cultural locations, potential problems, and about

the daily traffic (farm equipment, public access, easement access etc.). Modifications to the exploration location may be required based on the survey. The new location will require the same survey. If a suitable site cannot be found, drilling cannot occur at this site.

If there are environmental or cultural issues with the location of the potential boring, then modifications to the location are made in the field during the survey. Once all survey staff (and landowner where required) has agreed upon a location (this is also based on the geotechnical site survey), then the survey for the boring location is completed. The exploration area must be marked for USA clearances. An alternative drill location near the primary location will be planned in case USA determines that there are utilities close to the primary exploration location. The alternative location should be within the area marked for USA clearances.

The survey coordinator is sent the completed Daily Safety Sheet.

Real Estate is sent a justification for this location if the exploration will go over the Geotech discipline's allotted days per parcel.

5. Drilling Contractor is Contacted.

A projected start of drilling date is established. Environmental, Cultural and Field Survey Coordinator are informed of the projected dates (duration of survey). Survey request forms for each parcel are completed and sent to the Survey Coordinator at least 3 weeks prior to the start of drilling. The same process is followed by the Survey Coordinator as before and every attempt will be made to combine disciplines. The Survey Coordinator will inform geotech if any changes are needed to the exploration plan.

6. Public Outreach is Contacted.

Public Outreach is provided with the location information, maps, and dates of planned exploration. Public Outreach will inform the affected Reclamation Districts about the planned exploration.

7. Start Date Confirmed with Drilling Contractor.

8. USA Clearances Contacted Prior to Start of Drilling

USA clearances will be contacted a minimum of three days before the start of drilling. If utility issues arise, the alternative site can be used. If this site also has a utility problem, then an alternative site must be found within the USA cleared area. This location must again be cleared using the geotechnical survey checklist and by environmental and cultural before drilling can begin.

If there is no choice but to move the exploration location outside of the area cleared by USA, then drilling cannot begin until USA is called to clear the new area. This will require a delay of at least 3 business days. If a suitable site can't be found then the exploration at this site must be cancelled.

9. Pre-survey Daily Safety Sheet Sent to Field Survey Coordinator.

The safety sheet will be sent at least 2 days prior to drilling. Any recognized safety related changes in conditions at the project site will require a new or amended Daily Safety Sheet to be sent to the field survey coordinator.

10. Drilling Begins.

Drilling activities begin if all conditions are met. The same process is followed by the drilling team including contacting the field survey coordinator, Real Estate and owner as required by the TEP and returning the completed daily Safety Sheet.



PRE- DRILLING SITE ASSESSMENT

BORING/CPT NO. _____
DATE: _____
By: (name and title) _____

County/ Parcel No. / Location

GIS Information	Staked Points	Northing	Easting	Remarks

Geotechnical Site Evaluation for Drilling Activities		
	Y/N	Remarks
Drill Rig Access Checklist		
1. Overhead power lines, trees, objects?		
2. Steep or uneven terrain? Are the roadways to the drill site navigable for a drill rig?		
3. Is there soft or wet ground? Would the roads be navigable if wet?		
4. Are there any gates or other narrow points along access route?		
5. Do you have to drive over any small bridges?		
6. Other navigational issues?		
Drill Site Checklist		
1. Is the area large enough for the drill rig and equipment? Is the area flat and clear of vegetation?		
2. Are there any overhead obstacles for the drill rig mast? Power lines, trees, etc. ...		
3. Is the ground too soft or wet for the drill rig or CPT? What is the likely irrigation schedule, if any?		
4. Is the proposed hole off the toe of the levee more than 100 feet?		
5. Are there any indications of underground utilities? Any paddles, signs, irrigation lines, culverts in the area? Ask landowner/tenant, if available, if they are aware of any possible underground issues.		
6. Any reasons the location would inconvenience the owner or tenant? Ask the owner/tenant if available.		



PRE- DRILLING SITE ASSESSMENT

BORING NO. _____

DATE: _____

By: (name and title) _____

Geotechnical Site Evaluation for Drilling Activities		
	Y/N	Remarks
7. Environmental Conditions? (proximity to trees, waterways, vegetation) –consult with Environmental Scientist onsite		
8. Cultural Resources? –consult with Cultural Resources Specialist onsite		

Investigation Derived Waste Contaminant Assessment				
All efforts should be made to locate the activity to avoid encountering potentially hazardous materials.				
	Yes	No	N/A	Remarks
1. Did you observe any active retail service stations within 0.25 miles of site? If yes, note location.				
2. Did you observe any inactive service station within 0.25 miles of site? If yes, note location.				
3. Was the owner, representative, or tenant present at the site survey?				
4. Did the owner/tenant provide any information on existing or former pipelines, buried tanks, utility lines, or other potential contaminant sources or obstructions? If yes, describe or note on map and avoid area.				
5. Is there surface discoloration of soil indicative of spilled petroleum products near the location?				
6. Is there any other evidence of contaminated soil within 25-feet of the proposed boring location?				
7. Can the boring be moved 25 feet away from any visible indication of potential contamination or obstructions?				
All Investigation Derived Waste (IDW) will be containerized, labeled, and screening tests conducted for offsite disposal. If the response to questions 1 and 2 is "Yes", notify the Groundwater Lead, who will make an evaluation as to what actions are required. If the answer to No. 7 is "No", contact the Environmental Sampling and Testing Lead for further assistance.				

Notes

Attach additional sheets as necessary.

Delta Habitat Conservation and Conveyance Program Tentative Schedule for Proposed Geotechnical Activities

Task Name	Duration	Start	2012						
			April	May	June	July	August	September	October
Exploration Period	133 days	Mon 4/30/12	[Bar spanning April to October]						
Cone Penetration Testing (CPT)	50 days	Tue 5/1/12	[Bar spanning May to October]						
CPT #1 (Intake 1) 11 holes	10 days	Wed 5/2/12	[Bar spanning May to June]						
CPT #2 (Intake 2) 13 holes	13 days	Wed 5/2/12	[Bar spanning May to June]						
CPT #1 (Intake 3) 10 holes	10 days	Wed 5/16/12	[Bar spanning May to June]						
CPT #2 (Intake 4) 11 holes	11 days	Mon 5/21/12	[Bar spanning May to June]						
CPT #1 (Intake 5) 13 holes	13 days	Wed 5/30/12	[Bar spanning May to June]						
CPT #2 (Intermediate Forebay) 15 holes	15 days	Tue 6/5/12	[Bar spanning May to June]						
CPT #1 & #2 (Conveyance Options) 36 holes	20 days	Mon 6/25/12	[Bar spanning June to July]						
Drill Holes	133 days	Mon 4/30/12	[Bar spanning April to October]						
Intakes	60 days	Mon 4/30/12	[Bar spanning June to August]						
Drill Rig #1 (Intake 1) 11 holes	45 days	Tue 5/1/12	[Bar spanning June to August]						
Drill Rig #2 (Intake 2) 11 holes	45 days	Tue 5/1/12	[Bar spanning June to August]						
Drill Rig #3 (Intake 3) 10 holes	45 days	Mon 5/7/12	[Bar spanning June to August]						
Drill Rig #4 (Intake 4) 11 holes	45 days	Mon 5/7/12	[Bar spanning June to August]						
Drill Rig #5 (Intake 5) 14 holes	60 days	Mon 5/14/12	[Bar spanning June to August]						
Drill Rig #6 (Intermediate Forebay) 12 holes	60 days	Mon 5/21/12	[Bar spanning June to August]						
Conveyance Options	88 days	Mon 7/2/12	[Bar spanning July to September]						
Drill Rig #1(Group 1) 8 holes	60 days	Mon 7/9/12	[Bar spanning July to September]						
Drill Rig #2 (Group 2) 6 holes	45 days	Mon 7/9/12	[Bar spanning July to August]						
Drill Rig #3 (Group 3) 8 holes	60 days	Mon 7/16/12	[Bar spanning July to September]						
Drill Rig #4 (Group 4) 6 holes	45 days	Mon 7/16/12	[Bar spanning July to August]						
Drill Rig #5 (Group 5) 5 holes	40 days	Mon 8/13/12	[Bar spanning August to September]						
Drill Rig #6 (Group 6) 5 holes	40 days	Mon 8/13/12	[Bar spanning August to September]						

Assumptions: Access to all parcels by 4-1-12, availability of equipment, materials and resources, weather conditions, utility clearance, farming practices, pear orchards (avoid harvesting & pear festival- July & August)
10-6-11