



April 1, 2015

Mr. Weiquan Dong, PE
Bureau of Corrective Actions, Special Projects Branch
Nevada Division of Environmental Protection
2030 E. Flamingo Rd., Suite 230
Las Vegas, Nevada 89119

Mr. Jay A. Steinberg, not individually but solely in his representative capacity
as President of the Nevada Environmental Response Trust Trustee
Nevada Environmental Response Trust
35 East Wacker Drive, Suite 1550
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**SUBJECT: Contingency and Work Plan
GW-11 Pond/AP-5 Solids Removal Project Subsurface Investigations
Nevada Environmental Response Trust Site
Henderson, Nevada**

Dear Mr. Dong,

Tetra Tech is pleased to present this Contingency and Work Plan document, which describes planned geotechnical field investigations at the GW-11 Pond and at the proposed locations of the AP-5 solids removal storage tanks (AP-5 Tanks), as specified in the Phase II Work Plan for AP-5 Solids Removal, dated March 13, 2015. The GW-11 Pond and proposed AP-5 Tank locations are at the Nevada Environmental Response Trust (NERT) site (the "Site") in Henderson, Nevada.

This Contingency and Work Plan has been prepared in accordance with the Site Management Plan (SMP) Revision-1, dated October 2013, for the Site in Henderson, Nevada. Per Section 5.3 of the SMP, this Contingency and Work Plan serves as notification to NDEP and the Trust that the field investigation activities will be conducted within 50 feet of a Groundwater Water Extraction Treatment System (GWETS) component where use of equipment may accidentally damage a well or other components of the GWETS. This Contingency and Work Plan per Section 5.3.5 of the SMP outlines Tetra Tech's protocols and equipment that would be utilized in the event that unanticipated damage occurred to any component of the existing remediation system, resulting in a release of untreated groundwater during the subsurface investigation of the GW-11 Pond and for the planned AP-5 Tanks.

The subsurface Investigation for the GW-11 Pond will consist of two objectives. The first objective is a geotechnical investigation of the northern berm of the GW-11 Pond. The second objective of this investigation consists of a leakage study of the GW-11 Pond's secondary liner containment system. The geotechnical investigation for the AP-5 solids removal project will consist of drilling exploration borings below the proposed AP-5 Tanks footprints. Preparation and approval of a contingency plan is required prior to initiating any activity within 50 feet of any on-Site component of the groundwater monitoring, extraction, and treatment systems.

Scope of Work

GW-11: To accomplish the GW-11 Pond study objectives, Tetra Tech will be conducting a field investigation consisting of drilling five soil borings in the location of the north embankment berm to obtain subsurface information and look for indications of seepage into the underlying soils or embankment fill. Two borings will be drilled at the toe of the embankment and three will be drilled on the crest of the embankment. Borings through the fill will be drilled to a depth of approximately 40 feet and borings at the toe of the slope to 20 feet. The borings will be continuously sampled and logged by a Tetra Tech field engineer or geologist.

Borings through the embankment fill will be advanced using hollow stem auger drilling equipment to determine the subsurface profile of the soils used in construction of the earthen embankment. In addition all soil samples will be analyzed for moisture content and classification to potentially locate any evidence of seepage from the secondary liner. All borings will be completed as PVC piezometers constructed with a sump at the bottom of the pipe to collect any seepage and possibly provide an indication of accumulation volume, if present.

Standard penetration resistance tests will be made in the soils and disturbed samples will be obtained as drilling progresses. Undisturbed Shelby tube or California samples will be obtained in silt and clay seams if encountered. Subsurface water, if encountered at the time of our investigation, will be observed and the depth reported. Samples will be analyzed in a local geotechnical laboratory to determine the appropriate physical and engineering properties, including gradation analysis, natural moisture content, Atterberg limits, and direct shear.

All piezometers will be completed using 2-inch diameter, flush-threaded, Schedule 40 PVC casing and well screen with sand pack. The remaining boring annulus above the screen will backfilled using cement bentonite grout to seal the well casing to the surface. A Portland cemented flush-mount well manhole will be installed to protect the well.

To accomplish the second objective, Tetra Tech will inject sodium fluorescein dye tracer into the northeast and northwest collection sumps in an effort to assess the integrity of the northern portion of the secondary liner. The seepage velocity of groundwater at the Site will be estimated along with the estimated travel time of the potential sodium fluorescein dye tracer plume in order to determine a potential breakthrough time, assuming the secondary liner is leaking. The total volume of the initial sump dosing will be calculated based on the estimated sump capacity. The injected solution will have a concentration of approximately 8 mg/L of sodium fluorescein dye tracer.

The two piezometers adjacent to the collection sumps will be properly developed and sampled immediately following construction, and prior to injection, in order to determine a baseline for groundwater chemistry. Groundwater samples will be submitted to an analytical laboratory for analysis of sodium fluorescein dye tracer using EPA Method 300.0. The wells will be purged and sampled using low-flow sampling procedures in general accordance with U.S. EPA Standard Operating Procedure No. GW-0001. All down-hole equipment will be properly decontaminated between wells. Subsequent groundwater samples will be collected following the injection of the sodium fluorescein dye tracer. The exact number and frequency of groundwater samples collected will be determined once the seepage velocity of groundwater has been estimated.

AP-5 Solids Removal Project: Tetra Tech will be conducting a field investigation consisting of drilling four soil borings in the locations of the welded steel storage tanks to obtain subsurface information and engineering properties for the design of tank foundations. Borings will be drilled to a depth of approximately

75 feet and a boring at the sludge tank to 25 feet. The borings will be sampled and logged by a Tetra Tech field engineer or geologist. Borings will be advanced using hollow stem auger drilling equipment to determine the subsurface profile of the soils. In addition, soil samples will be analyzed for physical and engineering properties for use in design computations.

Protection Measures

Tetra Tech personnel and subcontractors will protect the Site's monitoring wells, extraction wells, and related groundwater treatment system (GWETS) components by using the following precautions and procedures during subsurface investigation activities.

- Daily health and safety "tailgate" meetings will be held prior to the start of field work. During that time, the Health and Safety Plan (HASP) will be reviewed. Discussions of health and safety hazards and preventions will also be held at that time. The names and contact numbers for all Tetra Tech field staff and Tetra Tech subcontractors will be confirmed. Clear lines of communication will be established to ensure a swift and coordinated response to a potential release.
- A task-specific Job Safety Analysis (JSA) will be prepared and reviewed prior to beginning each new task. Hazards related to each step of a task will be identified. Procedures needed to mitigate those hazards will be identified and implemented.
- Review of site maps for identification of planned work areas and well locations. Conduct a site reconnaissance of the work areas and well locations with the drilling subcontractor to identify best traffic route that best avoids site GWETS components and other structures (e.g., overhead power lines, utility poles, etc.)
- Identify staging areas, and parking areas in field with cones, caution tape, etc. Prepare traffic flow map that shows these areas.
- Protective barriers such as barricades, traffic cones/pylons and caution tape will be used when activities involving drill rigs are being performed in the proximity of exposed wells or other exposed GWETS components.
- Use of designated spotter for all vehicle movement. Enforce Site policy of no vehicle backing without performing 360-degree inspection and spotter guidance.
- Enforce maximum speed limit of 5 mph in well locations.
- Water generated during monitoring well drilling, construction, and development will be containerized for subsequent discharged directly into GW-11 and treatment via the GWETS.
- A private utility locator will clear each boring location for underground utilities and GWETS components prior to mobilization. Boring locations will be reviewed with Envirogen field personnel prior to drilling to avoid accidental damage to above ground components.
- Protection measures will be implemented if work is being conducted in the proximity of storm drain inlets. Protection measures will include the construction of a temporary earthen berm around the storm drain inlet. Plastic sheeting will also be placed over the storm drain inlet and secured with sand bags. These protection measures will be removed once work is completed in the area.
- Work areas will be delineated as necessary to avoid unauthorized entry into the subsurface investigation.
- Prior to mobilizing from an ECA, wheels for equipment used will be wet brushed to avoid tracking out contaminants.

Response Procedures and Equipment

- The immediate action taken in response of a release of untreated groundwater during the subsurface investigation will be to shut down and contain any uncontrolled flow.
- A spill response kit will be readily available during subsurface investigation activities and utilized in the event of a release of untreated groundwater. The spill response kit will be utilized in the event of a release of untreated groundwater or any fluids associated with the drilling equipment. The spill response kit will include an absorbent compound (such as cat litter), a plastic tarp, a 5-gallon bucket and appropriate hand tools to help control the flow.
- As defined in the SMP, if monitoring well construction results in the release of untreated groundwater, Tetra Tech will immediately notify Weiquan Dong of NDEP at (702) 486-2850, extension 252 and GWETS operation personnel. If any GWETS components are shut down due to damage to the system(s) or to control the release of untreated groundwater, Tetra Tech will provide NDEP and the Trust with a written explanation for the shutdown.
- If Tetra Tech's subsurface investigation results in the release of untreated groundwater, the release will be reported to the NDEP 24-Hour Spill Notification Line, if required by NAC 445A.345 to 445A.348.

Please contact us at (406) 543-3045 if you have any questions. Tetra Tech appreciates the opportunity to provide this Contingency and Work Plan.

Sincerely,

Tetra Tech



Richard P. Dombrowski, PE, PG
Task Manager



Kyle S. Hansen, C.E.M. #2167
Field Operations Manager/ Geologist
CEM Certificate Number: EM-2167
Expiration Date: September 18, 2016

"I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been prepared in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state and local statutes, regulations, and ordinances".

Description of Services Provided: Contingency and Work Plan for GW-11 Pond and AP-5 Tanks Subsurface Investigation Issued on March 27, 2015, Prepared for the Nevada Environmental Response Trust Site, Henderson, Nevada

cc: BMI Compliance Coordinator, NDEP, BCA, Las Vegas

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