



10875 Rancho Bernardo Rd. Suite 200
San Diego, CA 92127
PH 858.674.6559
FAX 858.674.6586
www.geosyntec.com

22 August 2013

Tom Alo
Water Resource Control Engineer
San Diego Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

**Subject: Recommended Revisions to WDR 98-21: Closure and Post-Closure
Maintenance of the Convair Lagoon Sand Cap, San Diego Bay**

Dear Mr. Alo:

This letter has been prepared by Geosyntec Consultants on behalf of TDY Industries, LLC (TDY), in response to a request from the San Diego Regional Water Quality Control Board (RWQCB) staff for comments on a possible revision to WDR 98-21. This WDR established monitoring and reporting requirements in relation to the Convair Lagoon Sand Cap which was newly installed in 1998, at the time of issuance of the WDR.

The sand cap has now been monitored for 15 years following its installation in 1998. In that time, the entire former Ryan Aeronautical facility (Site) has been demolished, all historical connections from the Site to the storm water conveyance systems (SWCS) draining to Convair Lagoon have been removed and the remaining historical trunk lines beneath and downstream of the site have been thoroughly cleaned of residual sediment. Based on the extended stability of the cap and the significant changes in potential inputs to Convair Lagoon, a review and update to the WDR is warranted. To this end, TDY recommends the following modifications to the WDR Maintenance Specifications and Monitoring Provisions.

The following modifications are recommended for WDR 98-21:

MAINTENANCE SPECIFICATIONS

1. The sand cap shall be maintained such that it continues to cover the historical impacted sediments in Convair Lagoon over which it was placed. Those sediments were determined to exceed 4.6 mg/kg (dry weight) at the time of placement of the cap in 1998. ~~sediments in Convair Lagoon containing PCB concentrations in excess of 4.6 mg/kg (dry weight) are contained below the main sand cap.~~

Tom Alo
22 August 2013
Page 2

Intent of recommended modification: Clarify that the cap shall be maintained to isolate impacted sediments below the cap. Impacted sediments above the cap may be of concern but do not pertain to cap integrity.

2. The main sand cap shall be maintained at an ~~minimum~~average thickness of three feet including one foot of gravel and two feet of sand. Additional sand and/or gravel shall be added to any area where the sand layer of the main sand cap ~~thickness~~ is less than 12 inches or if the average of the entire sand cap falls below 24 inches in thickness. Prior to placement of additional sand, an evaluation should be completed to determine the extent and cause of cap thinning, and whether geotechnical modifications are required to stabilize the cap. two and a half feet to maintain a minimum 3 foot total thickness. If visual inspections indicate the thickness of the sand layer in the main cap has diminished to less than 18 inches, additional sand shall be placed to raise the sand thickness back to 24 inches. The cap shall be repaired as expeditiously as practical. Waste discharge requirements may be necessary for a discharge of sand and/or gravel greater than 5,000 cubic yards.

Intent of recommended modification: 15 years of monitoring has shown occasional year to year variability in cap thickness measurements for individual points, typically associated with either unintended drift of measurement locations off of the cap area or difficulty with driving the measurement device through the consolidated sand. This modification, in conjunction with updated measurement approach recommended in the monitoring and reporting plan (MRP) section B.1, is intended to more accurately identify substantive issues with cap stability.

3. If any of the long-term monitoring elements described in the Monitoring and Reporting Program suggest that the sand cap has been breached ~~or recontaminated~~, additional sampling may be necessary and repair work to the cap may be warranted.

Intent of recommended modification: Potential recontamination will now be addressed separately.

- ~~4. The action level for repair work on the cap shall be 4.6 mg/kg (dry weight) in the sediment.~~

Tom Alo
22 August 2013
Page 3

Intent of recommended modification: Recommended trigger for action on the cap should be based on multiple lines of evidence of issues with cap integrity, as described in item 6 below.

~~5.4.~~All storm drains to Convair Lagoon shall be provided with adequate energy dissipation and erosion control measures to maintain structural integrity of the sand cap.

~~6.5.~~If sediment in the 60-inch or 30-inch storm drains and the respective nearest upstream catch basin is found to exceed 4.6 mg/kg (dry weight) by the storm drain sampling described in Section E of Monitoring and Reporting Program No. 98-21, the storm drain(s) shall be cleaned to remove sediment containing PCBs that was caused or permitted to be discharged or deposited by Teledyne Ryan Aeronautical. Storm drain cleaning is not required if the upstream catch basin sediment is below 4.6 mg/kg.

Intent of recommended modification: Storm drain sampling should no longer be included in the MRP.

~~7.6.~~If the sediment sampling, visual inspection and cap thickness monitoring, and biota sampling, as described in Sections B-DC of Monitoring and Reporting Program 98-21, indicates a potential breakthrough of PCBs from the sediment below the main sand cap, repair and/or investigation shall begin within 72 hours. ~~The minimum action level for repair and/or investigation is 4.6 mg/kg (dry weight) PCBs in the sediment.~~ The Regional Board Executive Officer may also require repair and/or investigation as reasonably necessary.

Intent of recommended modification: Recommended trigger for repair or investigation on the cap should be based on multiple lines of evidence pointing toward a potential issue with cap integrity.

~~8.7.~~The structural integrity of the perimeter berm shall be maintained as necessary to correct the effect of settlement, erosion, vessels, or other adverse factors that threaten the berm's structural integrity. If visual inspections indicate unacceptable erosion, settlement, or other damage to the berm, additional rock shall be placed to return the berm to its design dimensions.

Tom Alo
22 August 2013
Page 4

~~9.8.~~ All navigational warning signs shall be maintained in good condition. The anchoring piles shall be stable and the signs shall be intact, legible, and firmly attached to the piles.

~~10.9.~~ At least two permanent surveying monuments shall be maintained from which the location and elevation of the sand cap and perimeter berm can be determined throughout the post-closure maintenance period.

~~11.10.~~ Eelgrass shall be planted and maintained in accordance with the procedures and schedule contained in the Eelgrass Mitigation Plan, which is expected to be finalized by June 1, 1998, as administered by the U.S. Army Corps of Engineers. A copy of this final plan shall be submitted to the Regional Board by September 1, 1998.

Intent of recommended modification: This provision relates to work already completed

~~12.~~ By November 30, 1998, Teledyne Ryan Aeronautical shall provide assurances of financial responsibility in an amount sufficient to provide for repair, monitoring, and maintenance of the Convair Lagoon Sand Cap, which funding shall become available to the Regional Board upon a determination that the discharger has failed or refused, or is failing or refusing, or threatens to fail or refuse, to comply with the requirements of this order or any order issued by the Regional Board to enforce obligations associated with the sand cap and the PCBs contained by the sand cap. This financial assurance shall be irrevocable and accessible by the Regional Board regardless of approval from Teledyne Ryan Aeronautical.

Intent of recommended modification: This provision relates to work already completed

Recommend deletion of Attachment #1 to Order no.98-21, which outlines storm water effluent discharge requirements that are no longer applicable to the site.

Tom Alo
22 August 2013
Page 5

Monitoring and Reporting Plan

The following modifications are recommended for the Monitoring and Reporting plan for WDR 98-21:

A. MONITORING PROVISIONS

1. Samples and measurements taken as required herein shall be representative of the nature of the monitored element. All cap thickness samples shall be taken at the monitoring points specified in this Order and all core samples shall be collected at the random locations, selected as specified by this order, unless otherwise specified. Monitoring points shall not be changed without notification to and the approval of the San Diego Regional Water Quality Control Board (Regional Board) Executive Officer.

Intent of recommended modification: core sample locations are recommended to be randomly located to better evaluate condition of the cap as a whole, rather than repeated sampling in three pre-defined locations (See section C.1)

2. Monitoring must be conducted according to United States Environmental Protection Agency or California Department of Health Services approved test procedures as described in the current Title 40, Code of Federal Regulations (CFR), Part 136 and 261, or the current California Code of Regulations, Title 22, Article 11, as appropriate, unless other test procedures have been specified in this Monitoring and Reporting Program.

3. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or a laboratory approved by the Regional Board Executive Officer. Specific methods of analysis must be identified.

~~3.4. Monitoring results must be reported on discharge monitoring report forms approved by the Executive Officer.~~

Intent of recommended modification: This provision does not appear to be appropriate to the type of non-standardized monitoring proposed in this WDR.

Tom Alo
22 August 2013
Page 6

~~4.5.~~ If the discharger monitors any element more frequently than required by this Monitoring and Reporting Program, using test procedures as specified in Item No. 2 above, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharger's monitoring report(s). The increased frequency of monitoring shall also be reported.

~~5.6.~~ The discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

~~6.7.~~ Records of monitoring information shall include:

- a. The date, exact place, and time of sampling or measurements, or observations;
- b. The individual(s) who performed the sampling, measurements, or observations;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or method used; and
- f. The results of such analyses.

~~7.8.~~ All monitoring instruments and devices which are used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

~~8.9.~~ The discharger shall report all instances of noncompliance not reported under Reporting and Record Keeping Requirement D.6 of Order No. 98-21 at the time monitoring reports are submitted.

~~9.10.~~ The monitoring reports shall be signed by an authorized person as required by Report and Record Keeping Requirement D.5.

Tom Alo
22 August 2013
Page 7

B. VISUAL INSPECTIONS

1. To ensure the Convair Lagoon Sand Cap maintains its integrity, the thickness of the cap shall be monitored by divers in SCUBA gear who shall both generally inspect the cap thickness and also monitor the cap thickness utilizing probing methods (see Figure 1). Probing the sand cap to measure its thickness will reveal whether the cap has eroded or if additional sediment has been naturally deposited at the site. If cap thickness is determined to be less than 18 inches at a specific station, additional thickness measurements shall be collected in the vicinity of the observation to determine if the low measurement is an anomalous reading. If the measurement is determined to be accurate, an attempt shall be made to define the extent of the thinned region through step-out probing. Divers shall inspect the cap for damage, including cracks in the sediment, gashes from boat keels, localized erosion, debris penetrating the cap, bioturbation, or other visual evidence of damage.

Intent of recommended modification: This modification is intended to improve the repeatability of thickness measurements by reducing the potential for “false positive” identification of thin areas of the cap in addition to providing for useful delineation of thin areas, if identified.

2. The perimeter berm shall be inspected for damage such as settling, cracking, etc. Berm monitoring requires a survey of the average elevation of the crest of the berm and the average width at both the base and crest of the berm. Berm dimensions shall be made using surveys with a stadia rod and an underwater surveying tape.

3. Divers shall verify navigational warning piles are in good condition, and that the warning signs mounted on the piles are intact and legible.

4. If possible, the same divers should conduct each visual inspection to more easily identify changes. Prior to conducting the inspections, the divers should review the design of the cap and the results of previous inspections.

~~5. Separate visual inspections shall be conducted following construction of the cap to monitor recolonization of eelgrass on the cap. The procedures and schedule for inspections shall be followed in accordance with the Eelgrass Mitigation Plan, which is~~

Tom Alo
22 August 2013
Page 8

~~expected to be finalized by June 1, 1998, as administered by the U.S. Army Corps of Engineers.~~

Intent of recommended modification: This provision relates to work already completed.

6. Photographs of the cap shall be taken to document the condition of the sand cap, perimeter berm, eelgrass, and other associated facilities.

C. **SEDIMENT CAP SAMPLING AND ANALYSIS**

1. ~~CapSediment~~ samples shall be collected from three random locations on the cap in the cap as shown in Figure 2. Samples shall be collected by pushing an aluminum or brass core tube, with a recommended length of 3-4 feet and a diameter of 2 inches, into the sediment. Core samples shall be collected using a vibracore or similar methodology to collect a core from the sediment surface to the top of the gravel layer, without penetrating into the gravel. The depth of penetration of the core tube at each sample location shall be recorded and reported. After the core tubes are withdrawn, they should be checked to verify that the cap material sediment remained in the tube, photographed, logged, and then sampled at the designated sediment depths, and then capped at both ends.

Intent of recommended modification: These modifications provide for improved monitoring in two ways. First, collection of core data from the cap at only three pre-defined locations does not provide much data regarding the integrity of the cap as a whole. Over time, repeated sampling at the same location may lead to unintentional mixing of surficial sediments and cap material which may lead to issues with data interpretation. Second, due to the accumulation of significant new sediment on top of the cap, the sediment/cap profile overlying the gravel layer now exceeds 36-inches in many areas. Due to the inherent difficulty in collecting an intact core of greater than 24 inches using hand driven sample corers, it is recommended that sampling be performed, where possible, using a longer core barrel and a mechanical coring device to more readily achieve the goal of sampling to the top of the gravel layer.

2. Three samples shall be collected from each core tube; from the bottom, middle, and top of the cap material sediment column. Each sample shall be a 3-inch segment of sediment from their respective location in the core tube. ~~The bottom and top segments are to be analyzed first. Detection of PCBs in the bottom sample would suggest leakage~~

Tom Alo
22 August 2013
Page 9

~~through the gravel layer into the capping sediment. PCBs detected only in the top sample may indicate possible settling from sources outside the Lagoon. The middle sample will be held, but not analyzed, unless the analyses of the top or bottom samples reveal PCB concentrations of 2.0 mg/kg (dry weight) or greater. Analysis of the middle sample will indicate the extent of recontamination of the sediment if PCBs are detected in the top or bottom sample.~~

Intent of recommended modification: Modification identifies that core samples are now comprised of new sediment deposition overlying cap material. Sampling is proposed to be performed pursuant to original guidelines (top, middle, bottom of cap material), with logging to note the composition of the entire core. The 2.0 mg/kg threshold for sampling the middle core appears unnecessary. It is recommended that all samples be analyzed.

3. Sample collection, handling, and custody shall be performed using protocols and techniques appropriate for sampling PCB-contaminated materials. Sampling equipment shall be decontaminated after each use to avoid potential cross-contamination or direct contact by personnel handling the samples.

4. Samples shall be analyzed for PCBs using EPA Method ~~8080~~ 8082 (gas chromatography with electron capture ~~device~~ detectors or electrolytic conductivity detectors) or other method approved by the Regional Board Executive Officer.

Intent of recommended modification: Update to current PCB Aroclor lab method.

D. BIOLOGICAL TISSUE SAMPLING AND ANALYSIS

1. Biological tissue sampling and analysis shall be conducted using the species *Callinassa californiensis* (ghost shrimp) and *Bulla gouldiana* (sea snail). These species shall be collected during each sample cycle from both the cap and from a reference site outside the Lagoon, located near Charley Brown's restaurant at the east end of Harbor Island (see Figures 3 and 4).

2. For laboratory analysis, all samples shall be cleaned to remove sediment adhering to the surface. All samples should also be depurated for at least 72 hours to remove sediment from the digestive system that could bias the results of tissue analyses. The

Tom Alo
22 August 2013
Page 10

samples shall be homogenized in a tissue grinder, and analyses will be based on the whole bodies of the organisms. Samples shall be analyzed for PCBs using EPA Method ~~80828080~~ or other method approved by the Regional Board Executive Officer.

Intent of recommended modification: Update to current PCB Aroclor lab method.

~~E. STORM DRAIN SAMPLING AND ANALYSIS~~

~~1.3. Sediment from the 60-inch storm drain shall be collected from the channel at the end of the existing pier. Sediment from the 30-inch storm drain shall be collected from the invert at the outfall. If there is not enough sediment available to collect a sample at the outfalls, samples should be collected, if possible, at the nearest upstream catch basin on these two systems. On the 60-inch storm drain, the nearest location is catch basin 134, which lies in the frontage road/parking area north of and parallel to Harbor Drive. On the 30-inch storm drain, the nearest location is a manhole at the northeast corner of the intersection of Harbor Drive and the Gate 2 entrance to Teledyne Ryan Aeronautical (see Figure 5).~~

~~2.4. Samples shall be analyzed for PCBs using EPA Method 8080 or other method approved by the Regional Board Executive Officer.~~

Intent of recommended modification: Storm drain sampling should no longer be included in the MRP.

~~F.E. COMPLIANCE STATEMENTS~~

1. The discharger shall submit statements indicating compliance or noncompliance of the Convair Lagoon Sand Cap with the requirements of Order No. 98-21 and whether any large storms or earthquakes were experienced. Large storms and earthquakes are defined in Section H.3. Compliance statements shall be submitted annually for each year in which monitoring occurs.

Tom Alo
22 August 2013
Page 11

G.F. MONITORING SCHEDULE AND REPORTING

~~Visual inspections and sediment sampling shall be accomplished within 30 days of the completion of the sand cap. This initial monitoring shall be reported to the Regional Board Executive Officer within 60 days after completion of the monitoring.~~

Intent of recommended modification: This provision relates to work already completed.

1. All sampling for long-term monitoring shall be accomplished in April and May of each year in which monitoring is required. ~~_ following completion of the cap installation. Monitoring shall be conducted every year for the first 5 years after cap construction. The seventh year after construction, only visual inspections and biological sampling shall be accomplished.~~ The full monitoring program shall ~~again~~ be completed ~~ten, fifteen, and twenty years after cap construction. The monitoring program shall continue~~ at five-year intervals beyond the ~~twentieth-fifteenth~~ year (2018, 2023, 2028, etc.) unless the Regional Board determines that a reduced monitoring program is appropriate or that monitoring is no longer necessary. ~~The following table demonstrates the monitoring schedule (for the years not listed, no sampling is required).~~

Intent of recommended modification: Define the sampling scope as a 5 year recurrence interval.

2. If an inspection or sampling indicates that the cap has in some way been breached, then the sampling schedule shall revert to once per year following any needed repair. Subsequent sampling shall be ~~based on the same intervals given above (conducted at~~ 1, 2, 3, 4, 5, 7, 10, 15, and 20 years after repair).

Intent of recommended modification: Define the sampling schedule following repair of cap, if needed.

3. Monitoring reports shall be submitted to the Executive Officer annually for the years when monitoring occurs and shall contain the results of all monitoring which was conducted. Reports shall be due July 30th of the monitoring year and shall cover the period from July 1 to June 30.

Tom Alo
22 August 2013
Page 12

4. Monitoring Reports shall be submitted to:

Executive Officer Attn:
Planning and Services Unit
California Regional Water Quality Control Board
San Diego Region
~~9771 Clairemont Mesa Blvd., Suite A-9174 Sky Park Court, Suite 100~~
San Diego, CA 92123-4340-1324

H.G. CONTINGENCY MONITORING PLAN

1. If a potential breach in or other damage to the cap is identified:
 - a. Sediment samples shall be collected and analyzed for PCBs to determine the extent of any potential breach. The number of samples to be collected will depend on the extent of damage.
 - b. The extent of damage shall be measured including area and depth of sand and gravel missing and area of gravel exposed.
 - c. ~~Biological tissue sampling shall be conducted in the area of the potential breach or other damage.~~

Intent of recommended modification: Biological tissue sampling is best used for evaluating area wide exposure but exposure can take time to show up in tissue samples and it is difficult to collect biota data in specific locations. As such, it is not a useful parameter to evaluate specific observed damage. While this data is important to collect in the post-repair monitoring period, it should not be included in the contingency monitoring scope.

2. If the surface of the cap is found to contain PCBs which do not appear to be from a breach in the cap, ~~the RWQCB will be notified and additional assessments may be required. As this work does not pertain directly to cap integrity, it will be performed under investigations separate from this WDR. additional samples shall be collected and analyzed to determine the extent, and potentially identify the source. Storm drain sediment samples shall be collected from additional catch basins within Teledyne Ryan Aeronautical's property if the results of regular storm drain sampling indicate that the 60-inch or 30-inch storm drains contain contaminated sediment. Storm drain sampling upstream from the Teledyne Ryan Aeronautical property is not required.~~

Tom Alo
22 August 2013
Page 13

Intent of recommended modification: Evaluation of storm drain impacts will be performed separately from this WDR moving forward.

3. Visual inspections shall be conducted within two weeks of a major earthquake, tsunami, or a storm event with winds of strong gale or higher (47 mph or higher); however, in certain cases of devastating disaster, the Regional Board Executive Officer may extend the two week requirement at his or her discretion. For purposes of this monitoring program, a major earthquake is one that inflicts significant damage to property in the metropolitan San Diego area, and/or measures 5.5 or greater on the Richter scale within 30 miles of Convair Lagoon. A major tsunami is one that inflicts significant damage to property in San Diego Bay.

4. If biological tissue sampling indicates any species within Convair Lagoon contains PCBs significantly above the levels of the same species at the reference site, the results shall be compared with the baseline levels within Convair Lagoon. Baseline levels within Convair Lagoon were established from sampling conducted in October 1996 and transmitted to the Regional Board by letter dated January 20, 1997. If these comparisons suggest that the cap has been breached and that PCBs are available to the particular species, then additional samples of the particular species shall be collected to determine the extent of potential recontamination, as well as to identify possible sources (inside or outside of the Lagoon). Sediment samples shall also be collected in the area where the contaminated organisms were found and analyzed for PCBs to further determine whether the source of the contaminants is the capped sediment.

~~5. If sediment in either the 60 inch or 30 inch storm drains is found to exceed 4.6 mg/kg (dry weight), sediment samples shall be collected at the nearest upstream catch basin of the particular storm drain within Teledyne Ryan Aeronautical's property, and sampling shall revert to once per year to ensure that the contaminated sediment in the storm drain has not reached Convair Lagoon. Subsequent sampling shall be done at the intervals presented in the Monitoring and Reporting Program Section 0.2.~~

Intent of recommended modification: Evaluation of storm drain impacts will be performed separately from this WDR moving forward.

Tom Alo
22 August 2013
Page 14

6. Any potential breach in the sand cap shall be reported to the Regional Board by telephone, by voice mail, or by fax within 24 hours from the time that 1) ~~Teledyne-Ryan Aeronautical-TDY Industries, LLC~~ has knowledge of the potential breach, 2) notification is possible, and 3) notification can be provided without substantially impeding cleanup or other emergency measures. Regional Board office hours are between the hours of 8:00a.m. to 5:00p.m., Monday through Friday, excluding state holidays. Regional Board voice mail and fax machine are on-line 24 hours a day, 7 days a week. The initial report should include information on when the potential breach was discovered, how it was discovered, potential causes, and planned corrective or investigative actions.

7. Any corrective action taken and/or repair done to the sand cap shall be reported in writing to the Regional Board Executive Officer within 30 days of when ~~Teledyne-Ryan Aeronautical-TDY Industries, LLC~~ becomes aware of damage to or a potential breach in the cap. Subsequent written reports shall be submitted monthly ~~in accordance with the following schedule~~ by the 30th day of the following month (February 28th for January) until the damage or potential breach has been repaired or otherwise resolved.÷

Intent of Modification: No change, this edit only simplifies the wording of the existing schedule for reporting.



Sincerely,

A handwritten signature in blue ink that reads "Brian Hitchens". The signature is written in a cursive style.

Brian Hitchens, PG, CHG
Project Manager