

14 January 2011

Tom Alo
California Regional Water Quality Control Board, San Diego Region
9174 Sky Park Court, Suite 100
San Diego, California 92123-4340

**Subject: Comments on Draft Cleanup and Abatement Order
R9-2004-0258 Addendum No.4
Former Teledyne Ryan Aeronautical Facility
2701 North Harbor Drive
San Diego, California**

Dear Mr. Alo

Geosyntec Consultants (Geosyntec) has prepared these comments on behalf of TDY Industries, Inc. (TDY) in regard to the Draft Addendum No. 4 to Cleanup and Abatement Order No R9-2004-0258 (CAO) (RWQCB, 2010). Specific comments are presented in sequential order, with editorial comments in red-line strikeout form. General comments are provided following excerpts of the pertinent text and are highlighted in blue.

Global Comments:

Please replace “**receptors of concern**” with “**on-site receptors**”. “**On-site receptors**” is the standard term used in the risk assessment documents, “**receptors of concern**” is a term not previously used at this site.

Please replace “**chemicals of concern**” with “**constituents of concern**”. Some constituents of concern are metals rather than chemicals, thus the broader term “constituent” is more appropriate.

Specific Comments:

From Page 2:

4. DEMOLITION AND CLEANUP ACTIVITIES. The former TDY site is vacant and leased by the San Diego County Regional Airport Authority (Airport Authority). The Airport Authority plans on redeveloping the site and as such,

demolition activities are underway and being performed by the San Diego Unified Port District (Port District) as described in Finding 6 of Addendum No. 3 to CAO No. R9-2004-0258. Demolition is anticipated to be completed in June 2012. An Environmental Impact Report (EIR) was certified by the Port District in 2009 for the demolition project, but the scope of that project does not extend to cleanup and abatement activities required under this Order. The Port District is currently demolishing all above grade structures comprised of office and support buildings, manufacturing buildings, warehouses, and sheds, with the exception of Building 100. This phase of demolition activity ~~will~~ is scheduled to be completed by February 2011. Removal of Building 100 and subsurface structures such as concrete slabs, foundations, utilities, and most of the onsite storm water conveyance system (SWCS) ~~will~~ is scheduled to commence in June 2011 and end approximately in June 2012. During and after demolition, TDY plans ~~on to~~ conducting remedial actions to complete the cleanup and abatement of ~~all wastes~~ discharges at the former TDY site. On Page 3-4:

It is not the objective to cleanup and abate all waste discharges at the former TDY site. TDY remedial activities will be focused on cleanup and abatement of residual impacts above the alternative cleanup levels to the extent technically and economically feasible and protective of future potential commercial/industrial receptors.

c. 30-inch West Convair Lagoon Storm Drain. The on-site portion of ~~T~~this storm drain is inactive, capped at the property boundary, and will be removed by the Port District during site demolition. The 30-inch west storm drain was previously ~~owned,~~ maintained, and operated by TDY.

d. 30-inch East Convair Lagoon Storm Drain. The on-site portion of ~~this~~This storm drain is inactive, capped at the property boundary, and will be removed by the Port District during site demolition. The 30-inch east storm drain was previously ~~owned,~~ maintained, and operated by TDY.

e. 15-inch San Diego Bay Storm Drain. The on-site portion of ~~this~~This storm drain is inactive, capped at the property boundary, and will be removed by the Port District during site demolition. The 15-inch storm drain was previously ~~owned,~~ maintained, and operated by TDY.

f. 30-inch San Diego Bay Storm Drain. The on-site portion of ~~this~~This storm drain is inactive, capped at the property boundary, and will be removed by the Port District during site demolition. The 30-inch storm drain was previously ~~owned,~~ maintained, and operated by TDY.

On Page 4-6:

Consider editing Table 1 AOCs/AOPCs so that page breaks are not through the middle of an AOC/AOPC, or repeat the AOPC and media in question at the beginning of the new page.

On Page 6 (footnotes to Table 1):

1. AOPC = Area of Potential Concern. AOPCs are specific areas where COPCs have been detected above Site background or appropriate screening criteria, as described in the Site Characterization Report (Geosyntec, 2005). AOPCs were identified during the initial site investigation. These areas have chemicals in soil and groundwater detected more than once at concentrations exceeding the detection limit or background.

2. AOC = Area of Concern. AOCs have concentrations of one or more of the chemicals constituents of concern in soil, soil gas, or groundwater that exceed the risk-based concentrations (RBCs) for those chemicals constituents. The RBCs are the chemical concentrations above which a potentially unacceptable cancer risk or health hazard may exist for onsite to future on-site receptors of concern.

On Page 6:

AREAS OF POTENTIAL CONCERN AND AREA OF CONCERN FOR POTENTIAL TRANSPORT OF CONTAMINATED MEDIA TO CONVAIR LAGOON. The table below identifies the areas of potential concern and area of concern due to the potential transport of contaminated media to Convair Lagoon and identifies whether or not interim remedial actions have been conducted. These areas of concern and potential concern are described in Finding 10 and are shown in Attachment 3.³

Table 2 - Areas of Potential Concern and Area of Concern for Potential Transport of Contaminated Media to Convair Lagoon

The Convair Lagoon Shoreline is considered to be an Area of Potential Concern as impacts have not been observed in excess of RBCs. Add columns for "AOPC" and "AOC" to Table 2. Designate Convair Lagoon Shoreline as an AOPC and 60-inch Convair Lagoon Storm Drain as an AOC.

On Page 8:

- a. **Contaminated Groundwater to Convair Lagoon.** The discharge of groundwater through the bay bottom sediments to the bay water is an insignificant transport pathway. Therefore, this pathway does not contribute to any human health or ecological risks.

The migration rate of the trace PCB concentrations detected in groundwater near Convair Lagoon may be sufficiently slow to prevent discharge to Convair Lagoon in excess of the California Toxics Rule (CTR). However, C concentration trends; however, need to be established for these monitoring wells ~~especially for well MWCL-2 where increasing PCB concentrations have been noted.~~ No other chemicals of concern have consistently exceeded applicable CTR criteria in these wells.

Only minor variations in PCB concentration have been observed in MWCL-2, ranging from roughly 2 to 6 parts per trillion between December 2008 and January 2010. Duplicate samples from the 3rd quarter 2010 ranged from 6-16 parts per trillion. This slight variability at trace levels, when combined with the observed method blank contamination and duplicate sample variability, does not indicate a trend in this or any other Convair Lagoon vicinity well.

- c. **Contaminated Groundwater to the SWCS.** Groundwater seepage into the SWCS and discharge to Convair Lagoon is an insignificant transport pathway. Therefore, this pathway does not contribute to any human health or ecological risks.

All seeps found in the 54-inch and 60-inch Convair Lagoon storm drains were patched with concrete. Additionally, in order for this pathway to be significant, groundwater concentrations must exceed CTR criteria and intercept the 54-inch and/or 60-inch Convair Lagoon storm drains which are the only storm drains that are in contact with the water table. Hexavalent chromium and zinc concentrations in groundwater at the Building 158 AOC and PCB concentrations in groundwater at one well located in the corner of Building 120 are above CTR criteria. However, The contaminated-impacted groundwater groundwater plumes in these locations, however, have not migrated does not extend to the vicinity of the 54-inch and 60-inch Convair Lagoon storm drains.

On Page 9-10:

f. Contaminated Sediment Within the SWCS to Convair Lagoon. This pathway is a significant transport pathway and, therefore, poses a risk to human health and ecological receptors in Convair Lagoon. A majority of the PCB-impacted sediment will be removed when the laterals and specific storm drains are removed during site demolition. The 54-inch and 60-inch Convair Lagoon storm drains, however, will remain in place after site demolition. The 54-inch Convair Lagoon storm drain has remained essentially free of sediment accumulation since the January 2006 cleanout. Significant PCB-contaminated sediments, however, remain within the 60-inch Convair Lagoon storm drain, ~~which~~ These sediments will be removed after demolition activities to prevent the discharge of the contaminated sediment to Convair Lagoon.

Removal of PCB-contaminated sediments from the 60-inch storm drain is also needed because there is a potential cancer risk and hazard exceedance for workers exposed to these sediments. The primary exposure route is through the incidental ingestion of sediment. This storm drain will be cleaned out to eliminate this potential risk. TDY has informed the City of San Diego of this potential risk and has advised the City that, prior to cleanout of the 60-inch Convair Lagoon storm drain, ~~workers~~ workers entering this storm drain need to take health and safety precautions to avoid-mitigate exposure to potentially impacted sediment

On Page 10

11. ECOLOGICAL RISKS. An ecological risk assessment was not conducted for the former TDY site because there are no ecological receptors at the site that would potentially be exposed to ~~contaminated-impacted~~ soil and groundwater. An ecological risk assessment is needed for Convair Lagoon and San Diego Bay to determine potential ecological risks from contaminated marine sediments ~~polluted-impacted~~ by discharges from the TDY site. A subsequent ~~enforcement~~ Order will require TDY to conduct this ecological risk assessment after Addendum No. 4 has been fully ~~executed~~implemented, preventing future contamination of San Diego Bay sediment from the TDY site.

On Page 12

The table below summarizes the results of the evaluation of cleaning up soil, groundwater, and sediment within the 60-inch Convair Lagoon storm drain to background conditions for each chemical of concern. As shown in the table, it is infeasible to clean up to background conditions for all chemicals of concern in soil and groundwater, but feasible to ~~cleanup remove~~ the ~~existing~~ PCB-impacted sediments in the 60-inch Convair Lagoon storm drain ~~to background conditions~~. Complete removal of all visible sediments in the 60-inch storm drain is technologically and economically feasible and by doing so, Site related PCB impacts in storm drain sediment will be removed~~background conditions for PCBs in sediments will be achieved~~. Therefore, the cleanup level for PCB-impacted sediments in the 60-inch Convair Lagoon storm drain will be based on removal of all visible sediment from the 60-inch Convair Lagoon storm drain from the Northern Site boundary to the end of the discharge channel in Convair Lagoon Channel.~~should be set at background~~.¹⁰ However, it is noted that PCBs have been detected upgradient of the Site and it will be neither technically nor economically feasible to maintain background PCB concentrations.

Soil			
	Technologically Feasible	Economically Feasible	Feasible to Cleanup to Background
PCBs	Yes	No	No
VOCs	Yes	No	No
TPH	Yes	No	No
Metals	Yes	No	No
Groundwater			
	Technologically Feasible	Economically Feasible	Feasible to Cleanup to Background
PCBs	Yes No	No	No
VOCs	Yes	No	No
TPH	Yes	No	No
Metals	Yes	No	No
Sediment within 60" Convair Lagoon Storm Drain			
	Technologically Feasible	Economically Feasible	Feasible to Cleanup to Background
PCBs	Yes No	Yes No	Yes No

It is not technologically feasible to clean up PCBs to background in groundwater due to slow degradation rates, resistance to in-situ reduction or oxidation, and the high retardation coefficient of PCBs which eliminates the ability to treat PCBs through traditional groundwater pump and treat methods.

On Page 13:

The following modifications should be made to Table 4:

	Soil (mg/kg)		Groundwater (mg/L)	
	Onsite Maximum detected concentration (1)	Alternative Cleanup Level (2)	Onsite Maximum detected concentration (1)	Alternative Cleanup Level (2)
PCBs				
Aroclor 1016	0.03	1	1.9	1.1
Aroclor 1242	0.16	1	Not detected	0.14
Aroclor 1248	290	1	63 (5)	0.13
Aroclor 1254	1.7	1	Not detected	0.078
Aroclor 1260	1.5	1	5.3 (5)	0.013
Aroclor 1262	0.33	1	Not detected	0.013
VOCs				
1,1-Dichloroethane	0.003	25	120	30,000
Chloroethane	Not Detected	31	0.3	47,000

1. Based on the Site Wide Risk Assessment (Geosyntec, 2010), except where noted.

5. Based on 3rd Quarter 2010 Groundwater Monitoring Report

On Page 14:

The following modifications should be made to Table 5:

	Soil (mg/kg)		Groundwater (mg/L)	
	Onsite Maximum detected concentration (1)	Alternative Cleanup Level (2)	Onsite Maximum detected concentration (1)	Alternative Cleanup Level (2)
Metals				
Arsenic	23 (3)	23 (5)	0.0071 (4)	1.1
Chromium	1,390 (8)	450,000	880 (6)	23,000
Chromium, Hexavalent	170 (8)	23 (5)	700 (7)	23

1. Based on the Site Wide Risk Assessment (Geosyntec, 2010), except where noted.
5. The site specific background concentration for arsenic at the Site is 23 mg/kg. Because the risk based cleanup evaluation for arsenic in soil is lower than background, the Alternative cleanup level for arsenic is set at background.
6. Based on 1st Quarter 2009 Groundwater Monitoring Report data
7. Based on 3rd Quarter 2009 Groundwater Monitoring Report data
8. Based on the 2009 Interim Removal Action Status Report

On Page 14:

a. Alternative Cleanup Levels are the Lowest Levels that are Economically Feasible. The alternative cleanup level for PCBs in soil is based on an economic feasibility study that showed that soil with a PCB concentration greater than 1.0 mg/kg was economically feasible to excavate from the site. This cleanup level for soil is lower than the PCB risk-based concentrations that are protective of human health as determined in the RI/FS. The alternative cleanup level for PCBs in groundwater is based on a risk-based concentration that will not cause an unreasonable impact to human health. This alternative cleanup level is the lowest level that is economically feasible to attain because the remedial alternative for cleaning up PCBs in both soil and groundwater is excavation. ~~Excavating PCB-impacted soil to the alternative soil cleanup level should be anticipated to~~ result in achieving the alternative cleanup level in groundwater. Excavating PCB-impacted soil to achieve a lower ~~groundwater~~ ~~soil~~ cleanup level is economically infeasible; therefore, the groundwater alternative cleanup level is the lowest cleanup level that is economically achievable.

On Page 17:

iv. Building 158 AOC. Soil confirmation samples collected from the Building 158 excavation showed exceedances of the alternative cleanup level for hexavalent chromium and indicated the potential extent of the hexavalent chromium impacts may be too large to address efficiently prior to building demolition. Additional remedial actions ~~are needed~~ will follow ~~ing~~ building demolition.

v. Building 102 AOC. Soil confirmation samples collected from the excavation showed that TDY cleaned up this AOC to the alternative cleanup levels for VOCs and TPH. An additional excavation, however, is needed to remove TPH-impacted soil to the ~~east-west~~ of the initial Building 102 targeted excavation. This additional excavation ~~is needed~~will follow~~ing~~ building demolition.

vi. Building 120 South AOC. Results of soil confirmation samples collected from the Building 120 South AOC excavation as well as from step out borings and test pits (1) exceeded the alternative cleanup level for TPH, and (2) indicated concentrations of PCBs up to approximately 7 mg/kg in light non-aqueous phase liquids (LNAPL) within the soil media. Additional remedial actions to address these impacts ~~are needed~~will follow~~ing~~ building demolition.

vii. Building 180 AOC. Results of soil confirmation samples collected from the excavation exceeded the alternative cleanup level for TPH and PCBs. Additional remedial actions ~~are needed~~will follow~~ing~~ building demolition.¹⁷

On Page 18:

The text for finding 16.f appears to be somewhat dated. We suggest the following updates. You may additionally cite the 3rd quarter 2010 groundwater monitoring report to support the more recent observations in footnote 19.

f. Enhanced In-Situ Bioremediation. Pilot studies were performed in the Building 131/242 AOC, Building 130/166 AST/120/121 AOC, Former Maintenance Yard AOC, and Building 180 AOC to evaluate the effectiveness of Enhanced In-Situ Bioremediation (EISB) in reducing VOC concentrations in groundwater and if present, dense non-aqueous phase liquid (DNAPL). Emulsified vegetable oil (EVO) and KB-1 microbial culture were injected into the subsurface using direct push technology. Monitoring data collected after the injections indicate that the natural biodegradation rates were significantly enhanced by the EISB injections and that the alternative cleanup levels ~~could potentially be~~achieved over the majority of the pilot study area over an approximate 2-year timeframe. While there is insufficient data at this point to evaluate natural degradation rates and time to reach background after throughout the pilot study area, VOCs concentrations have been reduced to background over the majority of the pilot study area and are expected to continue to be reduced ~~beyond the alternative cleanup levels, in the balance of the pilot study area,~~ ultimately reaching background conditions.¹⁹

On Page 19:

18. CALIFORNIA ENVIRONMENTAL QUALITY ACT. This Order requires submittal of a detailed RAP for San Diego Water Board approval that addresses cleanup activities at the former TDY site. Although the RAP has not yet been submitted, the proposed activities under the RAP are expected to include remedial alternatives such as subsurface bioremediation injections and excavations at known areas of contamination. This Order also requires, if needed, implementation of a Contingency Plan for additional remedial action, if needed, in the event that demolition activities reveal new environmental concerns or previously undocumented underground storage tanks. The San Diego Water Board adopted a negative declaration on February 9, 2011, in accordance with California Environmental Quality Act (Public Resources Code, section 21000 et seq.) for approval of the activities expected to be included in the detailed RAP and Contingency Plan identified in this Order. In the negative declaration, the San Diego Water Board certifies that the proposed project will not have significant effects on the environment.

IT IS HEREBY ORDERED that, pursuant to California Water Code sections 13267 and 13304, CAO No. R9-2004-0258 is amended as follows:

~~**1. ABATE DISCHARGES.** TDY shall terminate all illicit discharges from the former TDY site, if any, to the storm water conveyance system.~~

We suggest that the storm water conveyance issues have been addressed under CAO Addendum No. 3 and do not need to be revisited in this CAO Addendum.

On Page 20: Table 6 and Table 7

See comments regarding Table 4 and Table 5.

On Page 23:

ec. All media (soil, groundwater, and soil gas) are protective of all on-site receptors ~~of concern~~ based on a final site-wide post-remediation risk assessment.

Tom Alo
14 January 2011
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Thank you for your time in reviewing these comments and suggested modifications to the Draft CAO Addendum. We appreciate the effort of the RWQCB in preparing this document. If you require further clarification on any of the above comments please contact the undersigned at (858) 674-6559.

Best regards,

Brian Hitchens, PG, CHg
Project Manager

Copies to: Edgard Bertaut, TDY Industries
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