



## California Integrated Waste Management Board

Daniel G. Pennington, Chairman  
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*Secretary for  
Environmental  
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Pete Wilson  
*Governor*

October 8, 1998

Mr. Keith S. Forman  
BRAC Environmental Coordinator  
Base Realignment and Closure Program Office  
Southwest Division, Naval Facilities Engineering Command  
1420 Kettner Boulevard, Suite 507  
San Diego, CA 92101-2404

Subject: Naval Training Center (NTC) Inactive Landfill Pre-Construction Study,  
Volumes I & II Ninyo-Moore Report, Dated: June 9, 1998.

Dear Mr. Forman,

Integrated Waste Management Board (IWMB) staff have received and reviewed the subject report and appreciate the opportunity to work with your agency, the Environmental Protection Agency (EPA), the San Diego Regional Water Quality Control Board (RWQCB) and the San Diego Port Authority to ensure that the NTC inactive landfill is closed in an environmentally sound manner.

IWMB would like to recognize and commend the Port, their consultant and the Navy for conducting this thorough and comprehensive landfill investigation. The report and methodology used to conduct this investigation is a model to others performing similar landfill investigation work. Generally IWMB staff concurs with the investigation and its findings. Quantities and estimates used to determine the costs for clean-closure and consolidation options appear to be accurate and based on reasonable field data and measurements (clean-closure estimate provided is consistent with cost estimate performed by IWMB staff-see attached ). Also the uncertainty of the landfill footprint (as well as its contents) has been significantly minimized.

The field investigation data provided by the subject report gives the regulatory agencies considerable information and evidence upon which to base recommendations and bracket regulatory objectives with respect to meeting State Applicable or Relevant and Appropriate Requirements (ARARs) and justifying the need for further remedial measures or minimal actions.

The intrusive field work conducted by Ninyo-Moore has verified the types and extents of waste at the site, including the main trench and fill operations conducted by the Navy from approximately 1963-1971, which is clearly depicted in the historical aerial photo analysis. The landfill can be divided into three separate and distinct areas

- 1) Least Tern Burn-Ash Area, which is 18 acres in size and contains areas with a 2-foot thick lens of burn ash, covered by approximately 3 feet of sandy soil;
- 2) Trench and Fill (Consumer) Refuse Area, which is 10-acres in size and contains a refuse layer an average depth of 8-feet in thickness, and is covered with 3 feet of sandy-silty soil;
- 3) Southern Construction & Demolition Debris Area, which is 18 acres and contains areas filled with a 3-ft thick layer of predominantly concrete rubble, that is covered with 3 feet of soil.

Based on this delineation of the site, IWMB staff have the following recommendations:

1) Least Tern Burn Ash Area

In order to sufficiently address any further regulatory actions in the burn-ash area, two options are available: 1) sufficient sampling & analysis of the burn-ash to deregulate site and/or "hard" capping the site to prevent public contact with the burn-ash material (groundwater monitoring may still be applicable), 2) a consolidation action to either remove the burn-ash to a landfill or use as material for the cap foundation of the trench and fill areas final cap (should a presumptive remedy for the trench and fill areas be selected). Development of paved areas (alternative 1), whether aircraft parking apron or vehicle access and parking could be integrated into final remedial action taken for this portion of the site.

soil cap still applicable  
use material for construction of cap.

2) Trench and Fill Area (Track and Playing Court)

The trench and fill area, which contains municipal solid waste is the primary source of the NTC Inactive Landfill's drainage, settlement, gas and leachate issues. Also, it is apparent that settlement of this area has caused documented drainage and ponding problems requiring continual maintenance and monitoring. This area, to comply with State ARARs, will need to be sufficiently graded and capped, drainage improvements constructed to control run-off/run-on, erosion control measures implemented for the cap system, installation of a gas and groundwater monitoring network, and inspection maintenance and monitoring activities occurring for up to 30-years. Also, any site improvements beyond open, non-irrigated space applications will more than likely need to be reviewed and approved by the RWQCB, IWMB (Postclosure Land-Use Regulations), and the City of San Diego (Local Enforcement Agency). Additionally, any structures constructed over the landfill may be required to install or construct additional measures such as a cap geomembrane, active gas collections systems, special piling-membrane seals, and building gas alarm systems.

cap requirements

Mr. Keith Forman  
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Considering the costs associated with meeting the above ARARs and potential requirements placed on constructing structures over the landfill, IWMB recommend that the 10-acre trench and fill area be clean-closed. IWMB, RWQCB and LEA staff experience with landfills subject to high development pressures (as well as developed landfills) indicate that actual costs to develop landfills are not adequately considered, i.e. Duck Pond, Palomar Airport, Marin County Home Depot, etc. Also, considering that the original Engineering Evaluation/Cost Analysis recommended a presumptive remedy with an estimated cost of \$11.5 million dollars, reflects that a \$9.7 million clean-closure (even with a \$41/ton Miramar Tipping fee) would be economically feasible, given minimal closure costs associated with the Least Tern and Southern portion of the NTC Inactive Landfill.

3) Southern Area

The report recommends that the Southern Portion of the NTC Inactive Landfill be excluded from the landfill boundary, since construction and demolition debris, which may be considered inert debris are specifically excluded from regulation & permitting in California Landfill Regulations (27 CCR Section 20230). IWMB recommends two options: 1) further systematic (grid) verification sampling and analysis of underlying soils be conducted to verify that minimal or no impact on soils has occurred due to construction debris or 2) excavation, random soil sampling and performing rock crushing of concrete debris, to provide engineered fill material for further improvements at the site (or used as foundation material for final cap of trench and fill area).

In conclusion, IWMB staff concur with Alternative 3 provided in the report and endorse clean-closure of the trench and fill area and minimal actions (verification sampling and analysis in conjunction with proposed development improvements) for the Least Tern and Southern areas of the NTC Inactive Landfill.

*continued monitoring and capping of S. portion.*

Again, thank you for this opportunity to provide you with input to the NTC inactive landfill closure process. If you have any questions please contact me at (916) 255-3830 or fax: (916) 255-4073.

Sincerely,

Glenn K. Young, P.E.  
Associate Waste Management Engineer  
Remediation, Closure & Technical Services

Attachment

Cc: Corey Walsh/San Diego RWQCB  
Aaron Yue/DTSC-OMF

*Krigginey*

*5*

**SITE NAME:** San Diego NTC Inactive Landfill (Trashfill Area)

**AS OF DATE:**

**CLEANUP CLOSURE COST ESTIMATE:**

**08-Oct-98**

Input Site Data:	Length (ft)	Width (ft)	Depth (ft)	Area (AC)	VOL (CY)
Cover Dimensions:	660	660	4	10.0	64533
Waste Dimensions:	660	660	8	10.0	129067
Distance to Landfill:	15				
Dump/Tip Fee:	41				

*Means*

ITEM DESCRIPTION	QTY	UNIT	RATE	UNIT	EXT COST
1 Surveying Activities (mark out/fill, grade control, as-builts)	10.0	AC	1,074.00	\$/AC	\$ 10,740.00
2 Clearing & Grubbing Site (remove veg. w/D-7 or D-8)	10.0	AC	2,000.00	\$/AC	\$ 20,000.00
3 Excavate cover soil to stockpile (300ft haul w/D7)	64,533	CY	4.02	\$/CY	\$ 259,424.00
	<i>64,910 CY w/ Krigginey ←</i>				
4 Excavate Waste to End-Dump (CAT25D w/4CY to 20CY end-dump)	129,067	CY	2.31	\$/CY	\$ 298,144.00
5 Haul Waste to Landfill in Med. Traffic	129,067	CY	10.56	\$/CY	\$ 1,362,944.00
6 Pay Dump/Tipping Fee* (significant cost to project, i.e. 50%)	129,067	CY	41.00	\$/CY	\$ 5,291,733.33
	<i>150,000</i>				
7 Verification Sampling & Analysis (5 samples/acre, analysis includes: 17CAT Metals, TPH, O-Pest, 8260)	50	EA	450.00	\$/EA	\$ 22,500.00
8 Backfill Cover Stockpile (grade and compact backfill)	64,533	CY	1.25	\$/CY	\$ 80,666.67
9 Import fill, grade and compact	129,067	CY	3.35	\$/CY	\$ 432,373.33
				SUB	\$ 7,778,525.33
10 Construction Mgmt & Oversight (5%) (5% of total project)	1	JB	\$ 388,926.27	\$/JB	\$ 388,926.27
				SUB	\$ 8,167,451.60
11 Contingency* (20%)			\$ 1,633,490.32		\$ 1,633,490.32
				<b>Total</b>	<b>\$ 9,800,941.92</b>

**\*Notes & Assumptions:**

- Equipment: 3 ea Excavators (CAT235), 2 ea Dozer (D7/D8), 15 End Dumps (20CY), 1 ea Grader, 1 ea Compactor (415C)
- Contingency includes hazardous waste handling & disposal and covers error margin for waste & soil quantity estimates
- Haul Cost based on 30 mi roundtrip (Miramar LF)
- Rates based on RS Means Site Work Cost Data and include O & P
- Assume import fill obtained from airport at no cost (cost of placement only)