



# FACT SHEET

## FORMER MARINE CORPS AIR STATION EL TORO IRP Sites 3 and 5 Closure of Inactive Landfills

August 2009

## Navy Proceeds with Capping of Sites 3 and 5 Landfills

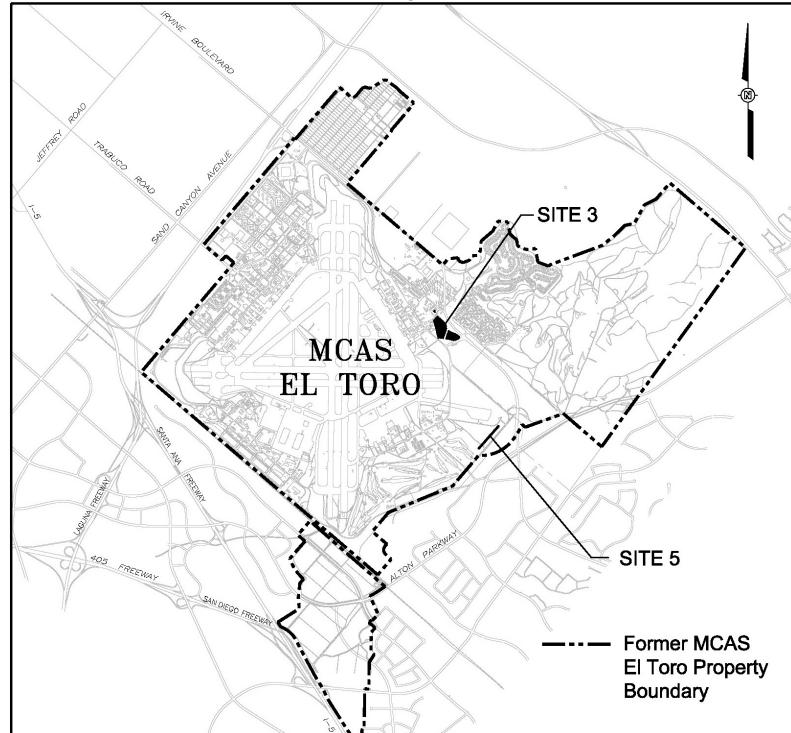
The purpose of this Fact Sheet is to provide the community with an update of the remedial design and remedial action activities at former Marine Corps Air Station (MCAS) El Toro Installation Restoration Program (IRP) Site 3 (Original Landfill) and IRP Site 5 (Perimeter Road Landfill). Landfill capping is the selected final remedy for soil at IRP Sites 3 and 5. The landfills will be capped with a synthetic flexible membrane liner and a soil cover to protect human health and the environment. Landfill contents are not impacting groundwater quality beneath IRP Sites 3 and 5. Therefore, no further action is required for groundwater as documented in the Final Record of Decision (ROD).

### SITE DESCRIPTION AND BACKGROUND

**Site 3, Original Landfill**, active from 1943 to 1955, encompasses approximately 11 acres and is located in the eastern portion of former MCAS El Toro (see MCAS El Toro Location Map). An unlined channel (Agua Chinon Wash) crosses the site from north-northeast to south-southwest. Site 3 was the original Station landfill, which was operated as a cut-and-fill disposal facility. Wastes were burned at an incinerator to reduce volume prior to disposal. Suspected wastes include metals, incinerator ash, solvents, paint residues, hydraulic fluids, engine coolants, and oily wastes, municipal solid waste, and various inert solid wastes. Several small waste and debris areas exist outside of the main landfill area. These waste and debris areas will be excavated and consolidated within the main landfill construction area. Temporary erosion control measures will be implemented during the remedial action to protect Agua Chinon Wash.

**Site 5, Perimeter Road Landfill**, active from 1955 to the late 1960s, encompasses approximately 1.8 acres and is located in the eastern portion of former MCAS El Toro (see MCAS El Toro Location Map). Site 5 is approximately 300 feet (ft) northwest of Borrego Canyon Wash. Site 5 was operated as a cut-and-fill disposal facility. Wastes were typically burned in place to reduce volume prior to disposal. Suspected wastes include burnable trash, municipal solid waste, cleaning fluids, scrap metals, paint residues, and unspecified fuels, oils, and solvents. Temporary erosion control measures will be implemented during the remedial action to protect Borrego Canyon Wash.

MCAS El Toro Location Map



### REGULATORY AGENCIES AGREE ON FINAL REMEDY FOR SITES 3 AND 5

The U.S. Environmental Protection Agency (U.S. EPA) and the California Environmental Protection Agency (Cal/EPA), which includes the Department of Toxic Substances Control (DTSC) and the California Regional Water Quality Control Board (RWQCB), concurred that the selected remedy presented in the Final Record of Decision (ROD), which consists of a synthetic flexible membrane liner and a soil cover, is the most appropriate and effective alternative for the landfills at Sites 3 and 5 that require remedial action for soil. No further action is required for groundwater at Sites 3 and 5. Concurrence was based in part on the Feasibility Study (FS) and FS Addendum that were conducted to evaluate alternatives for site cleanup and on community input on the Proposed Plan received during the public comment period. The ROD documenting the final remedy was issued in February 2008.

## REMEDIAL ACTION OBJECTIVES

The remedial action or cleanup objectives at the Sites 3 and 5 landfills are to protect human health and the environment and meet all applicable or relevant and appropriate federal and state environmental laws and regulations for closure of landfills. Meeting these objectives involves protecting human health by preventing people from coming into contact with landfill materials, and protecting the environment by reducing infiltration of surface water into the landfill to prevent formation of leachate. Leachate can form when surface water mixes with landfill materials and creates liquid wastes that could migrate downward and impact groundwater. Landfills have the potential to produce gas as a result of degradation of the wastes in the landfill. Therefore, the landfills will be constructed to minimize the potential for landfill gas to migrate in accordance with environmental laws and regulations. At Site 3, the landfill will be constructed to minimize the potential for surface water from the adjacent Aqua Chinon channel from contacting the landfill.

## SELECTED REMEDY

The FS provides the context for selecting the preferred remedial alternative presented in the Final ROD. Various alternatives were developed and evaluated to address the remedial action objectives at Sites 3 and 5. A Proposed Plan was issued to the public to present the alternatives evaluated and present the proposed remedy for Sites 3 and 5. Subsequently, a public meeting was held to obtain the public's input on the proposed remedy. The Navy and the EPA co-selected the alternative of a synthetic flexible membrane liner and a soil cover as the remedy for Sites 3 and 5. As documented in the Final ROD, the selected remedy for Sites 3 and 5 will consist of the following:

- Consolidation of waste into existing landfill (Site 3 only)
- Installation of a synthetic flexible membrane liner
- Construction of a 2-foot soil cover
- Implementation of erosion control features to protect the landfill cap
- Construction of a landfill gas collection and/or venting system
- Installation of passive gas control trenches
- Conducting monitoring of groundwater and landfill gas wells/system (using California Integrated Waste Management Board protocol)
- Conducting periodic inspections of the cap, drainage features, and settlement monuments

During construction, temporary fencing, signs, and locks will be utilized to restrict access until the remedies are in place. Land-use restrictions will be established to protect the landfill cover, prevent use of groundwater, and prevent contact with landfill materials within 100-feet of the waste boundary. These restrictions will also allow access to the sites for the Navy and regulators and require their approval prior to construction of structures within a 100-foot buffer zone. Periodic reviews will be conducted every five years to verify that the action remains protective of human health and the environment.

## REMEDIAL DESIGN/REMEDIAL ACTION WORK PLAN

A Remedial Design (RD)/Remedial Action (RA) Work Plan is being developed that details the methods and procedures for the construction of the two landfill covers. This plan has been reviewed by the U.S. EPA, Cal/EPA DTSC, and RWQCB and is anticipated to be completed with regulatory concurrence in August 2009.

### Implementation of Sustainability Concepts

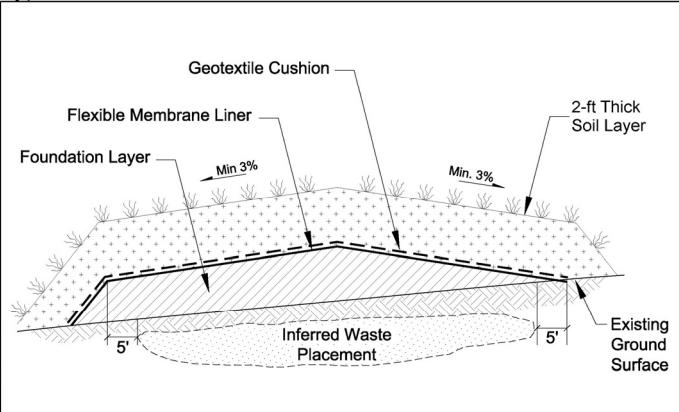
During the preparation of the remedial design, minor modifications in the design approach presented in the Final ROD were developed to implement sustainable concepts in the remedial action:

- Removal of a portion of the existing cover soil overlying the landfill waste – Soil will be re-used for foundation and final cover soil material, eliminating the import of 12,600 cubic yards of soil. This correlates to over 750 fewer truck trips to the site.
- Increasing the thickness of the liner from 40-mil to 60-mil and improving the design/engineering of the foundation layer allows the elimination of the geotextile beneath the liner. This correlates to over 230,000 square feet of material that does not need to be produced or delivered to the site.
- Temporary fencing will be used for site security during the timeframe following the remedial action to the point that the remedy is demonstrated as operating properly and successfully. This will eliminate the installation and eventual demolition of over 3,500 linear feet of permanent fencing.

## LANDFILL COVER SYSTEM

To prevent exposure to landfill materials and reduce infiltration of rainfall through the landfill, the landfill cover construction will consist of a foundation layer, synthetic flexible membrane liner, and a soil cover (see Typical Cover Cross-Section figure). The foundation layer will be placed above the waste and will be a minimum of 2 feet thick.

Typical Cover Cross-Section

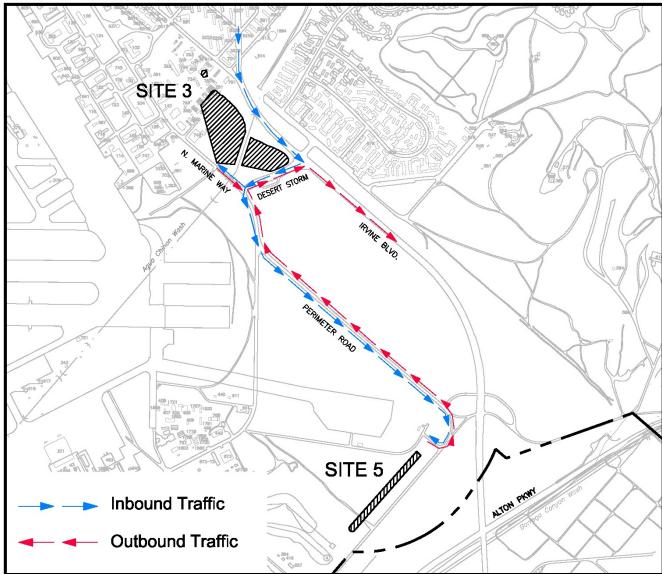


The function of the foundation layer is to protect the flexible membrane liner from the waste below and to provide preliminary

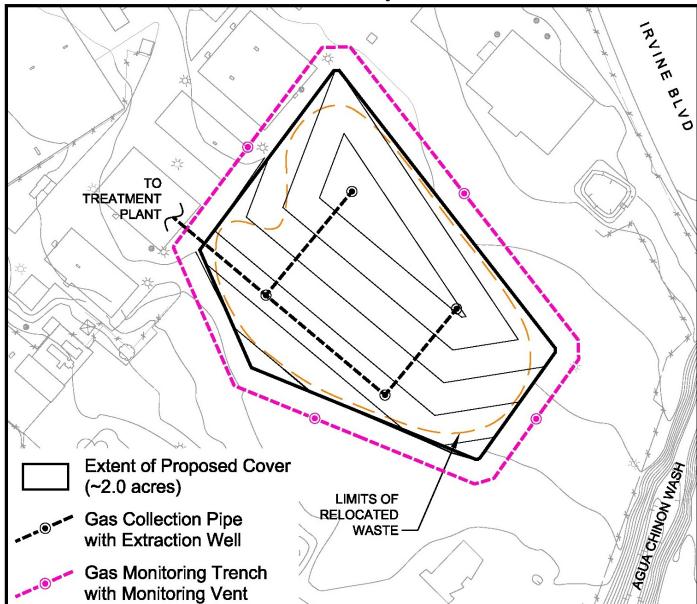
grading to promote drainage of surface water away from the landfill wastes. The flexible membrane liner will be placed on top of the foundation layer and acts as a barrier between the cover of the landfill and the waste as a method of reducing infiltration of surface water into the landfill. A geotextile fabric will be placed on top of the flexible membrane liner to provide additional protection. A 2-foot thick soil cover will be placed on the flexible membrane liner. The surface of the cap will be graded and compacted. The soil cover is intended to protect the flexible membrane liner, control surface erosion, and provide for vegetation.

During investigations conducted at Site 3, waste and debris was identified adjacent to the former landfill. This waste will be consolidated in the landfill prior to placement of the foundation layer. Soil for the foundation and soil cover will be taken from either on-site soil or from a nearby (off-station) source (see Traffic Route figure). Off-station soil to be used during construction will be sampled to evaluate the suitability of the soil.

Traffic Route



Site 3 Final Cover and Landfill Gas System



## LANDFILL GAS SYSTEM

A landfill gas collection and venting system will be installed at each site. This system will consist of wells placed within the interior of the landfill to collect potential landfill gas generated from the waste. The system can be operated in a passive or active mode depending on the results from periodic monitoring of the wells. If landfill gas collection and treatment is necessary, the landfill gas will be piped to treatment systems at each of the landfills. As an added measure of safety, passive gas trenches will be installed along the perimeter of the landfill to monitor potential landfill gas migration (see Site 3 and 5 Final Cover and Landfill Gas System figures).

## POST CLOSURE MONITORING AND MAINTENANCE

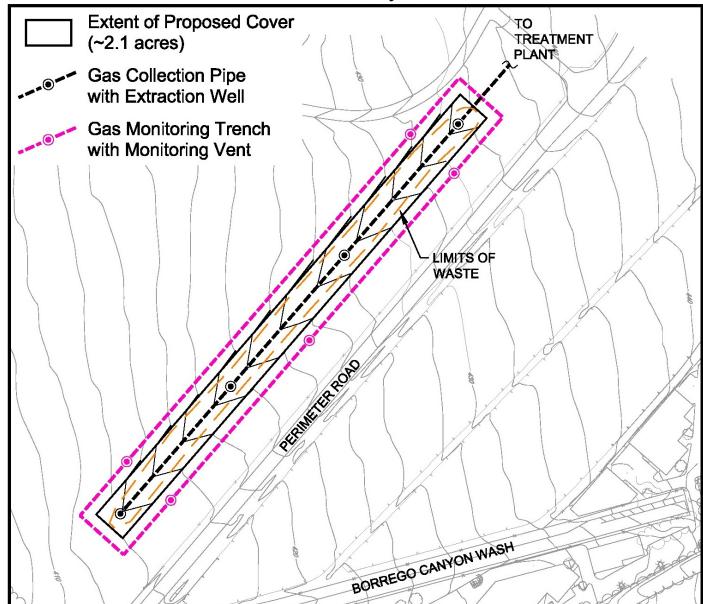
Post closure monitoring and maintenance activities will begin following landfill construction activities. An Operation and Maintenance (O&M)/Long-Term Maintenance (LTM) Plan will be prepared to describe the specific requirements of long-term maintenance activities including periodic visual inspection of the landfill covers, settlement monuments, and vegetation control with occasional reseeding and replacement of top soil lost due to erosion, as necessary. The plan will also describe the requirements for groundwater, leachate, and landfill gas monitoring.

## PROJECT SCHEDULE

- Submit Final RD/RA Work Plan: **August 2009**
- Begin Field Construction Activities: **August 2009**
- Finish Field Construction Activities: **January 2010**

Periodic updates on the construction progress will be provided at the community-based Restoration Advisory Board (RAB) meetings. Meetings are open to the public and are held quarterly, typically on the third Wednesday of the month at an Irvine City Hall conference room.

Site 5 Final Cover and Landfill Gas System



## PROJECT CONTACTS

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**For More Information:**

Documents related to the selected remedy such as the Record of Decision and the Remedial Design/Remedial Action Work Plan at Sites 3 and 5 are available at the following locations:

Heritage Park Regional Library  
MCAS El Toro Information Repository  
14361 Yale Avenue  
Irvine, CA 92604  
(949) 936-4040

MCAS El Toro Administrative Record File  
BRAC Office Building 307  
Former MCAS El Toro  
(949) 726-5398

**Internet Connection**

For more information on former MCAS El Toro environmental restoration activities, visit the web site at:  
**[www.bracpmo.navy.mil](http://www.bracpmo.navy.mil)**

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Base Realignment and Closure  
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