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WESTON SOLUTIONS

FIELD VARIANCE FORM

DATE: 9-NOVEMBER-11

PROJECT NAME: Interim Action Ranges Munitions Response Area

PROJECT LOCATION: Interim Action Ranges

APPLICABLE DOCUMENT / SECTION: Final Phase II Interim Action Work Plan, Interim Action Ranges Munitions Response Area, Former Fort Ord, dated May 24, 2011

SUBJECT: Design Study Expansion Recommended for Northern Portion of Range 44 Special Case Area

FIELD CHANGE CONDITION:

The Design Study for Range 44 (R44) Special Case Area (SCA) (Figure 1) is progressing in accordance with the Final Phase II Interim Action Work Plan for the Interim Action Ranges Munitions Response Area (IAR MRA).

The following activities have been completed for the Design Study in the northern portion of R44 SCA:

- Field staking of transects;
- Brush cutting of transects;
- Near surface investigation of transects with the intent of reducing near surface clutter prior to Digital Geophysical Mapping (DGM) surveys;
- DGM survey of two 8.2-foot wide by 100-foot long transects in each of twenty eight grids;
- Processing of DGM survey data and target selection (targets were selected at and above the 50 millivolt [mV] threshold, which is based on the 37mm Projectile at the depth of 12 inches below ground surface [bgs]);
- Hand excavation of a select number of DGM targets; and
- Excavation and screening of soil from fourteen 8.2-foot-by-100-linear-foot transects to a depth of six inches bgs.

Design Study Findings

Munitions debris (MD) from sensitively-fuzed 66mm, high explosive anti-tank (HEAT), M72 Series (Light Antitank Weapon [LAW]) rockets was found in 14 of the 28 grids containing transects (Figure 2). One munitions and explosives of concern (MEC) 66mm, HEAT, M72 Series (LAW) rocket was found in the transect segment in Grid B2J8J6 (Figure 2).

Design Study activities confirmed the presence of 66mm, HEAT, M72 Series (LAW) rocket MD and MEC in the vicinity of targets in the northern portion of the R44 SCA; however, the extent of the subsurface sensitively-fuzed munitions cannot be defined without collection of additional data.

RECOMMENDED APPROACH / CHANGE:

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Design Study findings to-date indicate there is a potential for additional subsurface sensitively-fuzed munitions to remain in the northern portion of R44 SCA; therefore, expansion of DGM survey and target investigation in the northern portion of R44 SCA (Figure 3) to determine the extent of subsurface sensitively-fuzed munitions is recommended. The Design Study expansion will be conducted in accordance with the previously agreed upon procedures described in the Final Phase II Interim Action Work Plan and a modification to the target selection threshold as described below.

DGM survey and target investigation will include the following activities:

- Vegetation cutting, as necessary (Section 2.3.1.3 of the Final Phase II Interim Action Work Plan)
- DGM survey of approximately 8 acres (Section 2.3.4 of the Final Phase II Interim Action Work Plan)
- Processing of DGM data and dig list preparation (Section 2.3.5 of the Final Phase II Interim Action Work Plan)
    - Evaluation of the processed DGM data, including selection of targets and polygons to be excavated to define the extent of sensitively-fuzed munitions, will consist of a target selection threshold of 300mV based on the 66mm LAW rocket at the depth of 12 inches bgs in least favorable orientation
- Digital geophysical anomaly reacquisition (Section 2.3.6 of the Final Phase II Interim Action Work Plan)
- Excavation to depth of digitally reacquired anomalies (Sections 1.12 and 2.3.7 of the Final Phase II Interim Action Work Plan; target selection threshold will be 300mV based on the 66mm LAW rocket at a depth of 12 inches bgs in least favorable orientation)
- Quality Control (QC) and Quality Assurance (QA)
    - Blind Seeding prior to DGM survey in accordance with seeding guidelines specified for interim remedial actions (Section 6.26.2 of the Final Phase II Interim Action Work Plan)
    - Known QC Seeding during DGM survey (Section 6.26.1of the Final Phase II Interim Action Work Plan)
    - QC-1: Analog verification of anomaly removal at 100% of the anomalies selected for investigation (Section 6.25.1 of the Final Phase II Interim Action Work Plan)
    - FORA Third Party QA (Section 2.3.9 of the Final Phase II Interim Action Work Plan)

The results of the Design Study expansion will be included in a technical information paper.

Habitat Restoration

General habitat restoration requirements are outlined in Section 12 of the Final Phase II Interim Action Work Plan. A habitat restoration plan is currently being prepared for IAR MRA which will be submitted for review and approval. Monitoring requirements of passive and active restoration areas will be identified in the plan.

IMPACT ON PRESENT AND COMPLETED WORK:

No impact to present or completed work.

REQUESTED BY: Kristie Reimer, ESCA Remediation Program Manager (ARCADIS)

[ ] **CLARIFICATION/FOR INFORMATION ONLY** [ ] **MINOR CHANGE** [X] **MAJOR CHANGE**

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ESCA RP TEAM APPROVALS: G. CLARK, L. TEMPLE, B. MOE, R. LEE

COMMENTS

ACKNOWLEDGED BY:	**GREG CLARK** **ESCA RP UXO SAFETY OFFICER (WESTON)**	**SIGNATURE** FOR Jack Kristensen	**DATE** 11/14/2011
ACKNOWLEDGED BY:	**BRUCE MOE** **ESCA RP SENIOR UXO SUPERVISOR (WESTON)**	**SIGNATURE**	**DATE** 11/14/2011
ACKNOWLEDGED BY:	**LINDA TEMPLE** **ESCA RP REMEDIATION PROJECT MANAGER (WESTON)**	**SIGNATURE**	**DATE** 11-14-11
ACKNOWLEDGED BY:	**RICHARD LEE, P.G., R. GP.** **ESCA REMEDIATION PROJECT GEOPHYSICIST** **QUANTUM PHYSICS**	**SIGNATURE**	**DATE** 11-14-11

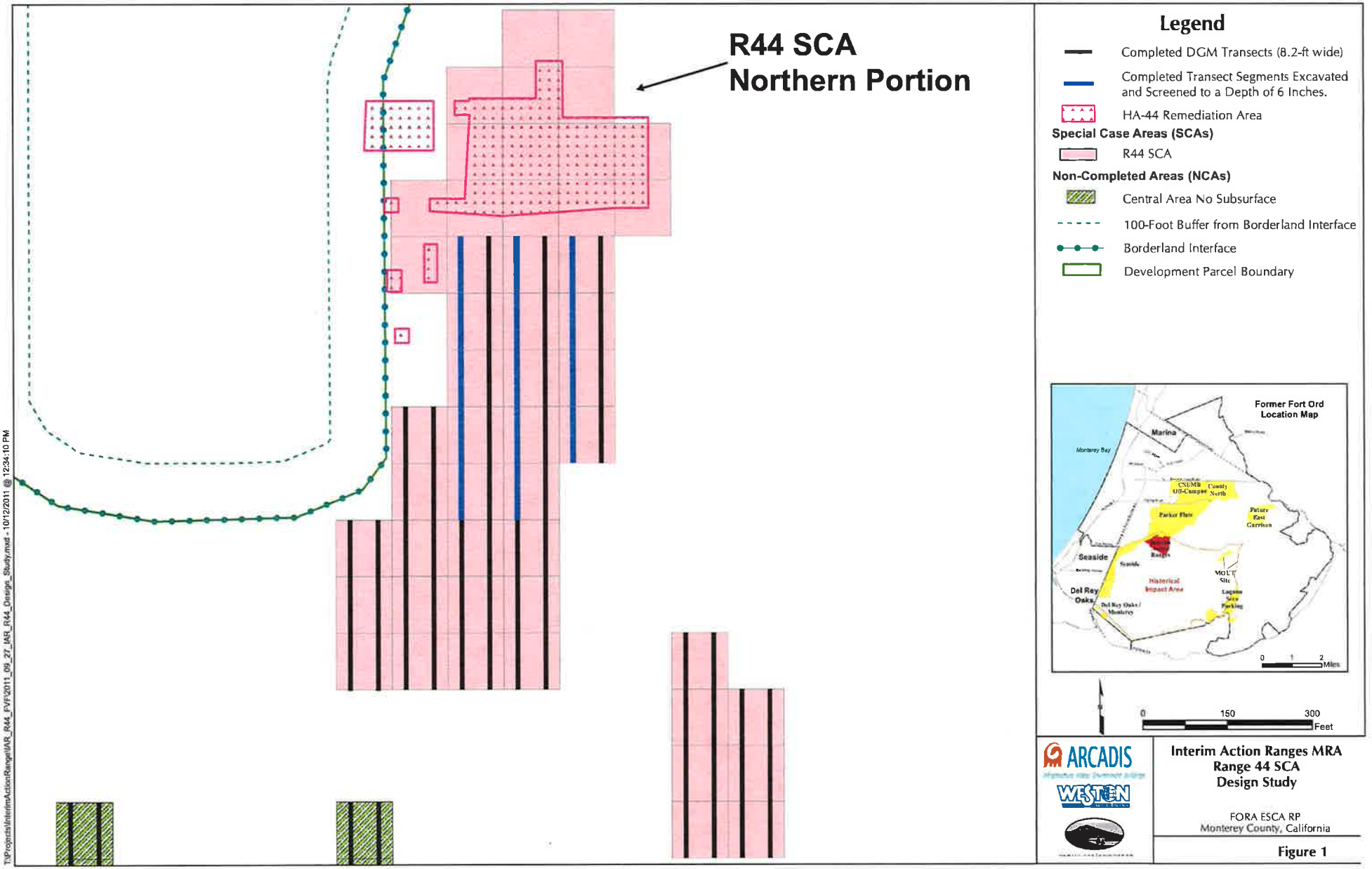
FORA APPROVAL:

COMMENTS

☒ **APPROVED** ☐ **REJECTED**	**STAN COOK** **FORA ESCA PROGRAM MANAGER**	**SIGNATURE**	**DATE** 11/14/11

ATTACHMENTS:

Figure 1 - Interim Action Ranges MRA Range 44 SCA Design Study
Figure 2 - Interim Action Ranges MRA Range 44 SCA Design Study 66mm Rocket Findings
Figure 3 - Interim Action Ranges MRA Range 44 SCA Design Study Expansion


R44 SCA
Northern Portion
Legend
Completed DGM Transects (8.2-ft wide)
Completed Transect Segments Excavated and Screened to a Depth of 6 Inches.
HA-44 Remediation Area
Special Case Areas (SCAs)
R44 SCA
Non-Completed Areas (NCAs)
Central Area No Subsurface
100-Foot Buffer from Borderland Interface
Borderland Interface
Development Parcel Boundary
Former Fort Ord Location Map
Marina
Monterey Bay
Seaside
Del Rey Oaks
Historical Impact Area
0 1 2 Miles
0 150 300 Feet
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Interim Action Ranges MRA
Range 44 SCA
Design Study
FORA ESCA RP
Monterey County, California
Figure 1
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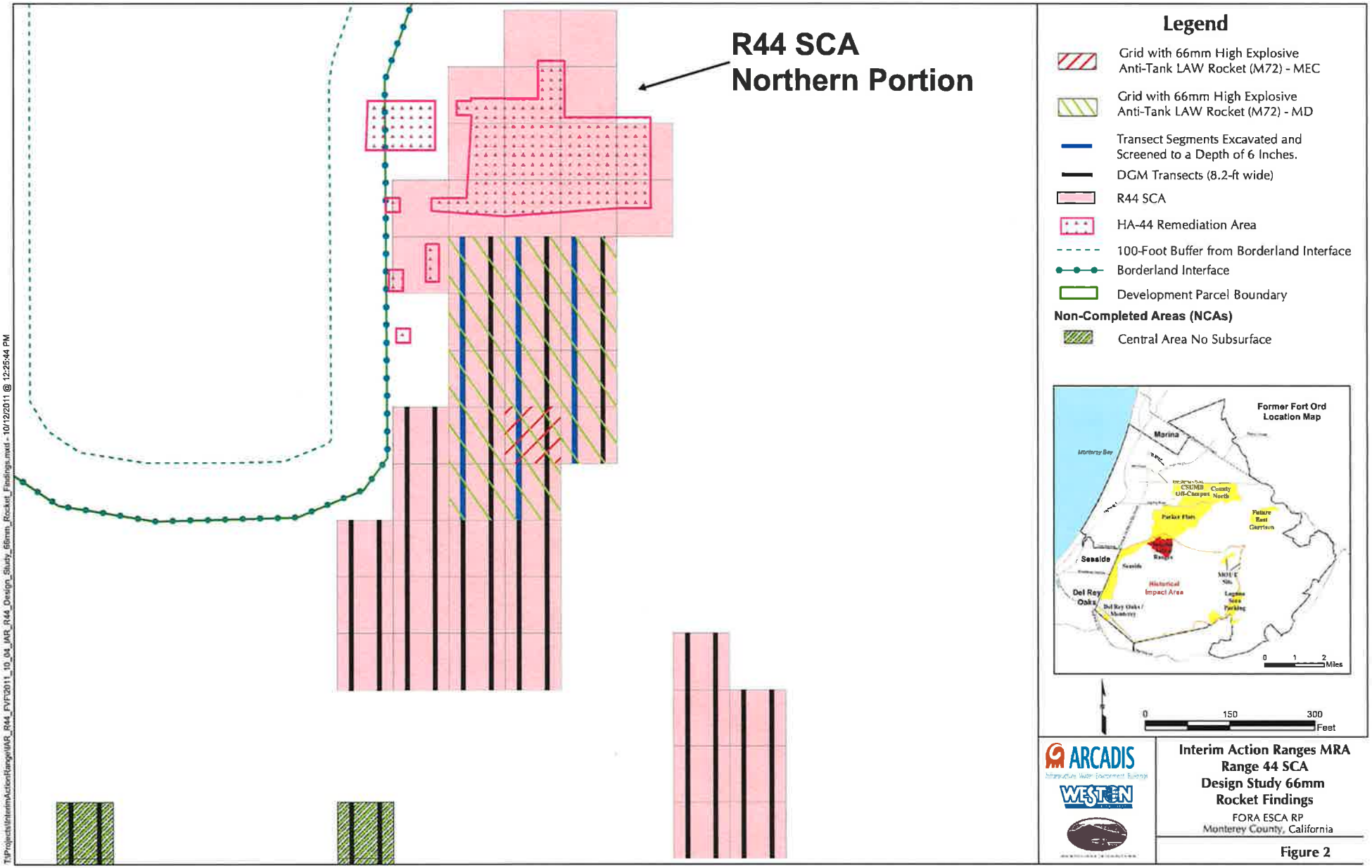
R44 SCA
Northern Portion
Legend
Grid with 66mm High Explosive Anti-Tank LAW Rocket (M72) - MEC
Grid with 66mm High Explosive Anti-Tank LAW Rocket (M72) - MD
Transect Segments Excavated and Screened to a Depth of 6 Inches.
DGM Transects (8.2-ft wide)
R44 SCA
HA-44 Remediation Area
100-Foot Buffer from Borderland Interface
Borderland Interface
Development Parcel Boundary
Non-Completed Areas (NCAs)
Central Area No Subsurface
Former Fort Ord Location Map
Marina
Seaside
Del Rey Oaks
Historical Impact Area
0 1 2 Miles
0 150 300 Feet
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WESTON
Interim Action Ranges MRA
Range 44 SCA
Design Study 66mm
Rocket Findings
FORA ESCA RP
Monterey County, California
Figure 2
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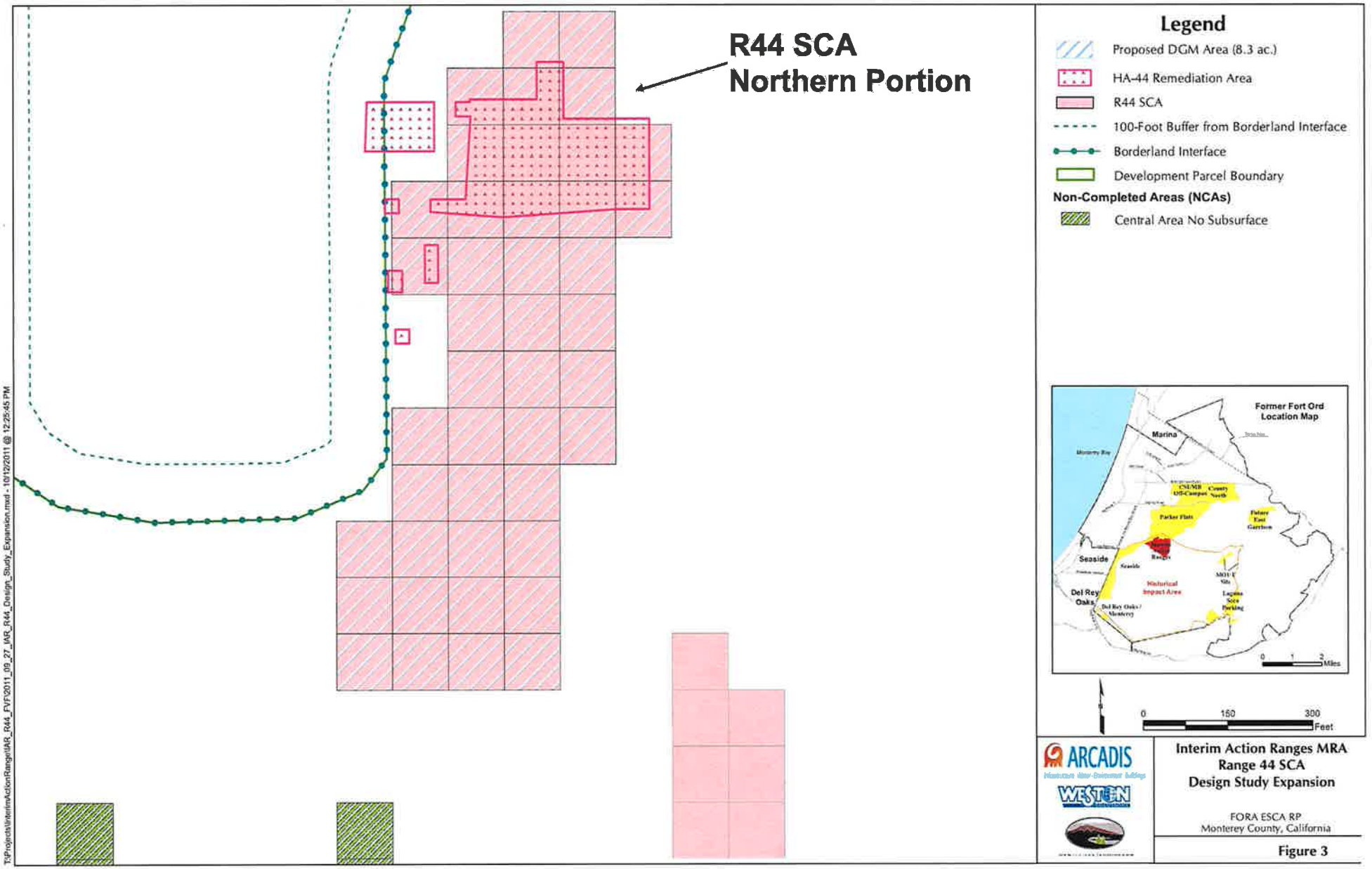
R44 SCA
Northern Portion
Legend
Proposed DGM Area (8.3 ac.)
HA-44 Remediation Area
R44 SCA
100-Foot Buffer from Borderland Interface
Borderland Interface
Development Parcel Boundary
Non-Completed Areas (NCAs)
Central Area No Subsurface
Former Fort Ord
Location Map
Marina
Seaside
Del Rey Oaks
Historical Impact Area
0 1 2 Miles
0 150 300 Feet
ARCADIS
WESTON
Interim Action Ranges MRA
Range 44 SCA
Design Study Expansion
FORA ESCA RP
Monterey County, California
Figure 3
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