

Updated January 27, 2014

Moon Hines Flowline Spill

Wayne County, Mississippi

Operations and Maintenance Plan

Unified Command

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1.0 Introduction

This plan was prepared at the request of the Unified Command (UC) for the Moon-Hines Flowline Spill as part of the response and long term remediation. The purpose of this Operations and Maintenance (O&M) Plan is to describe the techniques and resources to be used in remediation; to describe the monitoring and reporting requirements; and to describe the change in requirements as allowed by the UC. The nature of the discharge, movement, and collection of contaminant from the Moon-Hines Flowline Spill will change with time and season. Therefore, this O&M Plan is subject to an adaptive management strategy as approved by the UC. This will allow operations and maintenance the ability to adapt to changing conditions as the seasonal weather conditions change. Complete Environmental will be the contractor for operations and maintenance. FC&E Engineering will serve as the Responsible Party Representative (RPR) and provide support for monitoring and reporting to the UC.

2.0 Reporting

The contractor will designate a field supervisor that will be responsible for documenting operations and maintenance in each Zone at each monitoring event. The field supervisor and the RPR will collect data from maintenance activities, and this data will be compiled into a report. The report will be submitted to UC for review. UC will collectively determine the appropriate time to lower the frequency of O&M activities, monitoring and reporting. The UC may use its discretion to keep a specific Zone in a higher frequency O&M stage as needed.

2.1 O&M Records

The field supervisor will notify UC and RPR prior to scheduled site visits. The field supervisor and RPR will be responsible for recording the following information during routine site visits of the O&M phase. This information will be documented and submitted for reports.

- Date
- Time
- Zone
- Specific area/station within Zone
- Description of current conditions at area/station
- Actions and maintenance operations performed at area/station
- Before and after photos of any maintenance operations performed
- Disposal manifest for waste removed

2.2 Reporting to UC

The RPR will be responsible for compiling records of O&M activities into a report. This report will be submitted to UC within 48 hours of scheduled maintenance activities. The RPR will coordinate with the contractor about planned monitoring events and make site visits simultaneously with the field supervisor.

3.0 Operations & Maintenance

The following information details the activities that will take place during the O&M phase. The frequency of these activities will change with time, but changes in frequency will be determined by UC.

3.1 Personnel:

- 10 People - 1 Supervisor and 3 Crews (consisting of 3 people)
- Crews will float around all Zones and the excavation area. Priority will be given to Zone B.
- Supervisor will provide support and direction to the Crews and document maintenance activities.
- Following each scheduled monitoring event, the need for manpower will be reevaluated by the supervisor, and manpower will be subtracted or added as needed.

3.2 Materials and Equipment:

- Required PPE
- Sock Booms
- Snares
- Oleophilic Fabric
- Absorbent Pads
- Bags
- Oil Absorbent
- Hand Tools
- Trucks
- Trailers
- UTVs

3.3 Staging Areas and Access

- The board road access will remain in place until the 60 day rental expires.
- Once the 60 day rental for the boards is expired, access conditions will be reassessed and the decision will be made whether or not to renew the rental.

- If conditions allow, the board road will be removed and UTVs will be used to access the work Zones.
- 1 roll-off box will be staged at the Moon-Hines tank battery for waste storage.
- 1 trailer will be staged at the Moon-Hines tank battery with O&M supplies.
- An amphibious vehicle will be on site as needed to aid in waste removal in difficult to reach areas.

3.4 Waste Removal and Disposal

- Impacted water will be disposed of at a Clarkco Services salt water disposal well.
- Impacted solid waste will be disposed of at Pine Ridge Landfill in Meridian, MS.
- Waste manifests will be kept for records of disposal.
- The solid waste will be stockpiled in the roll-off box on site until disposal is needed.
- Solid waste in the least accessible areas (e.g. Zones C, D and E) will be double bagged and stockpiled in a designated 'high ground' area. An amphibious vehicle will be used as needed to remove the stockpiled waste in these areas.

3.5 Monitoring Frequency

- During initial O&M, all Zones will be monitored two times per week and after a 1 inch rain event over a 24 hour period.
- Following the UC direction for less frequent monitoring, all Zones will be monitored one time per week and after a 1 inch rain event over a 24 hour period.
- Following further UC direction for less frequent monitoring, all Zones will be monitored one time per month and after a 1 inch rain event over a 24 hour period.
- Monthly monitoring will continue until the UC determines that the level of contamination being released no longer requires scheduled monitoring.
- Periodic monitoring may continue as directed by the UC following specified events.
- This decrease in monitoring frequency will be determined by factors such as the amount and frequency of waste being removed and the amount of recoverable oil leaching out.

3.6 Additional Concern Due to Rain Events

- The possibility for water exceeding the containment abilities of the O&M controls and the natural barriers (e.g. beaver dams) is still unknown due to the lack of observed precipitation during the response. At this time, it is believed that a rain event of 2" will cause water levels to rise high enough to overtop the beaver dam located in Zone E.
- Water overtopping the beaver dam presents an elevated potential for recoverable oil to migrate downstream of current containment.

- Following a 2 inch rain event, the contractor or the RPR will recon the beaver dam and areas downstream of Zone E in search of the movement of recoverable oil. This recon will also provide more information about the potential for containment failure following specific rain events.
- If recoverable oil is found to bypass containment, additional measures will be required to prevent further downstream migration.
- A hard boom will be placed at the intersection of Wagon Branch and Eucutta Road and maintained during O&M. This boom will be checked following rain events greater than 1 inch in a 24 hour period.
- The previous points will be reevaluated as rain observations are made and as additional information is gathered during the O&M Phase.

4.0 Zone Specific Activities

The following stations within Zones A, B, C, D, E and the Excavation Area will require specific activities that pertain to the terrain and the level of contamination. These specific activities and stations may be subject to change as O&M progresses. The change in seasons and weather may constitute the need for more or less Zone specific activities.

4.1 Excavation Area

- The underflow dam located at the road culvert will be the primary O&M point.
- Water collecting at the underflow dam will be inspected for oily sheen.
- Oily sheen on the water will be collected with snares and absorbent pads.
- Sock booms will be maintained at the underflow dam.
- The excavated area will be visually inspected for recoverable oil leaching out.
- Oil absorbent will be spread across the excavated areas if recoverable oil is observed to be leaching out.

4.2 Zone A

- Zone A has no specified O&M stations at this time.

4.3 Zone B

- Zone B requires targeted mechanical removal and flushing for an additional 3-5 days before being completely in the O&M Phase.
- B1, B2 and B3 are maintenance stations at oleophilic fabric fence. These stations will be checked for recoverable oil. Recoverable oil present will be removed with snares and absorbent pads. Oleophilic fabric will be changed as needed.

- B4 is a hard boom collection point. Hard boom will be maintained as a collection point for recoverable oil. Recoverable oil present will be removed with snares and absorbent pads.

4.4 Zone C

- C1, C2, C3, C4, C5 and C6 are maintenance stations at oleophilic fabric fence. These stations will be checked for recoverable oil. Recoverable oil present will be removed with snares and absorbent pads. Oleophilic fabric will be changed as needed.
- C7 is a hard boom collection point. Hard boom will be maintained as a collection point for recoverable oil. Recoverable oil present will be removed with snares and absorbent pads.

4.5 Zone D

- D1 is a maintenance station at oleophilic fabric fence. This station will be checked for recoverable oil. Recoverable oil present will be removed with snares and absorbent pads. Oleophilic fabric will be changed as needed.
- D2 is a sock boom collection point. Sock boom will be maintained as a collection point for recoverable oil. Sock boom will be replaced as necessary. Additional recoverable oil present will be removed with snares and absorbent pads.

4.6 Zone E

- E1, E2, E3 and E4 are maintenance stations at oleophilic fabric fence. These stations will be checked for recoverable oil. Recoverable oil present will be removed with snares and absorbent pads. Oleophilic fabric will be changed as needed.
- Zone E will be monitored as soon as possible after a 2 inch or greater rain event to determine if the beaver dam was breached and if recoverable oil migrated downstream. An assessment of potential cleanup techniques will be performed at that time and reported to the UC. The O&M team will deploy absorbent boom in Wagon Branch at the Eucutta Road bridge.

5.0 General Activities

- Oil absorbent material, such as Oil Gator, will be used as needed throughout all Zones.
- Oil absorbent will be applied to ground areas (outside of defined channels) with persistent signs of recoverable oil, or areas that show new signs of leaching following rain events.

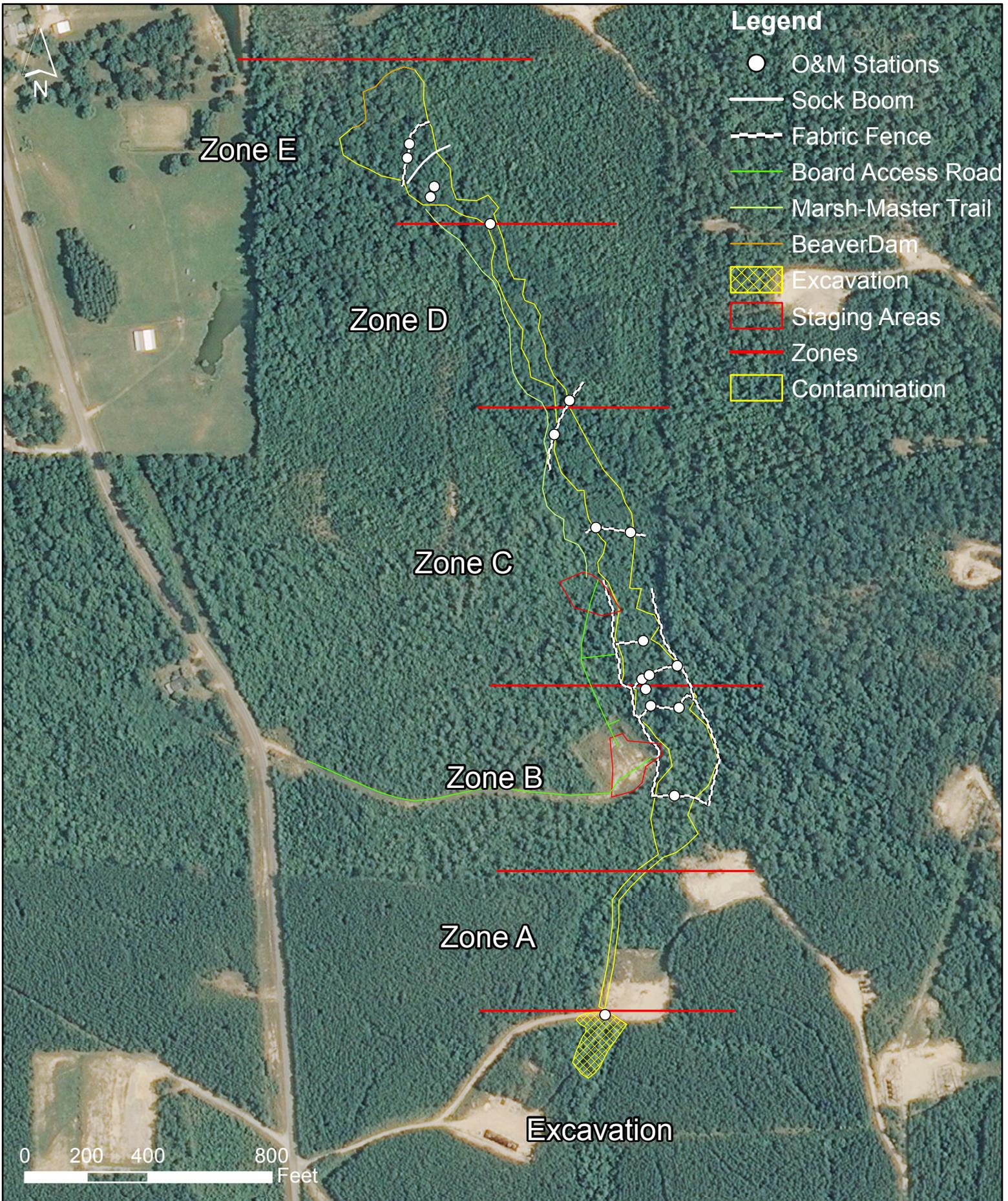
6.0 Health and Safety

All activities during the O&M Phase will be conducted following the Site Safety and Health Plan published on the EPA OSC website for the Moon-Hines Flowline Spill. In addition, air monitoring will be conducted following the Oil Spill Respiratory Protection plan published on the EPA OSC website for the Moon-Hines Flowline Spill. These documents can be located at the website listed below.

http://epaosc.org/site/doc_list.aspx?site_id=9015

7.0 Milestones of Increased/Decreased O&M Frequency

8.0 Revisions to O&M Plan



Moon-Hines-Tigrett Oil Operating
 Operations & Maintenance Plan
 Eucutta Road, Wayne County, MS

Figure Number: 1
 Figure Name: Extents
 Purpose: O&M Plan
 Drawn By: jsmith
 Date Drawn: 1/23/2014



Zone A

UNDERFLOW

Excavation

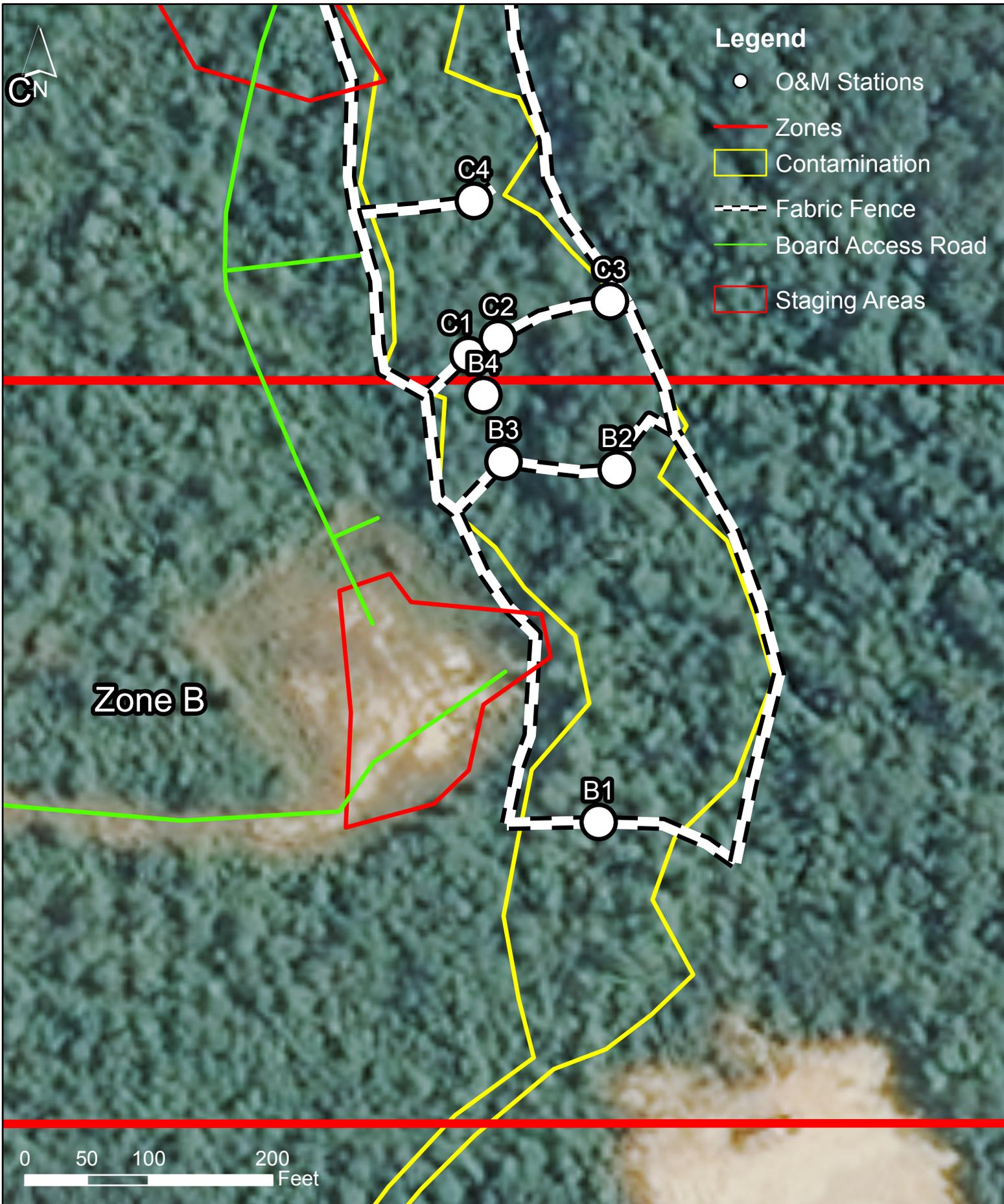
Legend

- O&M Stations
- ▨ Excavation
- Zones
- ▭ Contamination

0 50 100 200 Feet

Moon-Hines-Tigrett Oil Operating
Operations & Maintenance Plan
Eucutta Road, Wayne County, MS

Figure Number: 2
Figure Name: Zone A
Purpose: O&M Plan
Drawn By: jsmith
Date Drawn: 1/23/2014





Legend

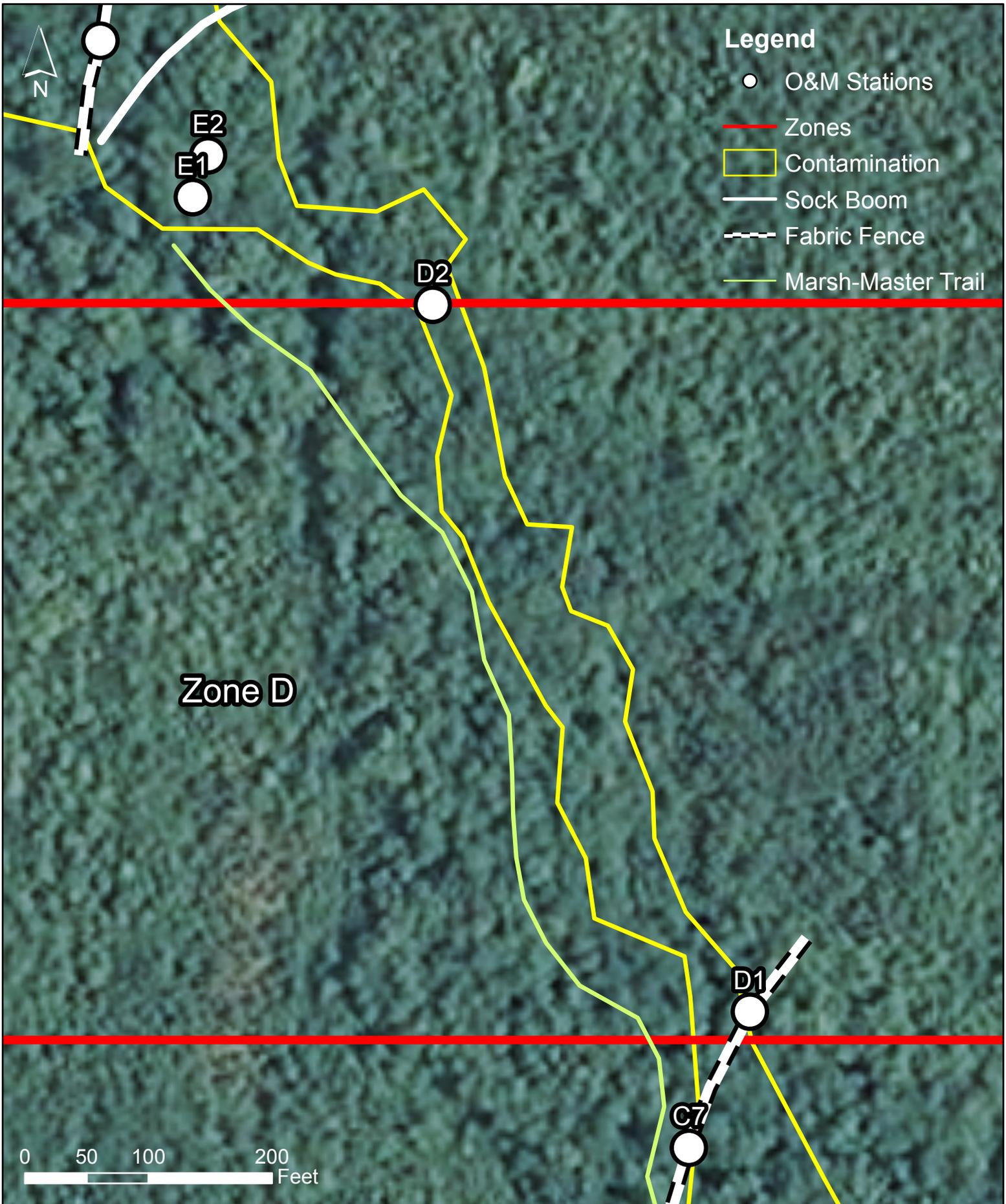
- O&M Stations
- Zones
- Contamination
- - - Fabric Fence
- Board Access Road
- Marsh-Master Trail
- Staging Areas

Zone C



Moon-Hines-Tigrett Oil Operating
Operations & Maintenance Plan
Eucutta Road, Wayne County, MS

Figure Number: 4
Figure Name: Zone C
Purpose: O&M Plan
Drawn By: jsmith
Date Drawn: 1/23/2014





Legend

- O&M Stations
- Zones
- Contamination
- Sock Boom
- Fabric Fence
- Marsh-Master Trail
- BeaverDam

Zone E



Moon-Hines-Tigrett Oil Operating
Operations & Maintenance Plan
Eucutta Road, Wayne County, MS

Figure Number: 6
Figure Name: Zone E
Purpose: O&M Plan
Drawn By: jsmith
Date Drawn: 1/23/2014