# LANDFILL:
# 2015 SUMMARY OF ACTIVITIES/FINDINGS

## MUSCATINE CITY COUNCIL MEETING
## FEBRUARY 11, 2016

BARKER LEMAR
ENGINEERING CONSULTANTS

# OUTLINE

- Consent Order Background/Overview
- Consent Order Summary and Status
- Summary of 2015 Consent Order Findings
- Upcoming 2016 Consent Order Activities
- Upcoming Larger Non-Consent Order Items

# BACKGROUND / OVERVIEW

- The Muscatine County Solid Waste Management Agency and the Iowa DNR entered into an Administrative Consent Order on February 11, 2015.
- The requirements of the Consent Order are almost exclusively associated with compliance with the regulations pertaining to groundwater.
- The culmination of the groundwater compliance requirements specified in the Consent Order is the selection of a groundwater remedy.

# CONSENT ORDER ACTIVITIES SUMMARY AND STATUS

| Activity | Consent Order Paragraph | 1st Half 2015 | 2nd Half 2015 | 1st Half 2016 | 2nd Half 2016 | 1st Half 2017 | 2nd Half 2017 |
|---|---|---|---|---|---|---|---|
| 1. Hydrogeological Review | 3 | 3/2 | | | | | |
| 2. Geochemical Sampling/Evaluation | 4a | | | | | | |
| 3. Groundwater Plume Delineation | 4b, 8 | | | | | | 8/1 |
| 4. Natural Attenuation Sampling/Evaluation | 4c, 6a | | | | | | |
| 5. Waste Boundary Delineation | 4b, 6b | | | | | | |
| 6. 2015 Summary of Findings of Activities | 5 | | | 3/1 | | | |
| 7. POC Well Installation | 6b | | | | | | |
| 8. Background Sampling of New POC Wells | 6c | | | | | | |
| 9. 2016 Summary of Findings | 7 | | | | | 3/1 | |
| 10. Assessment of Corrective Measures (ACM) | 9 | | | | | | 12/1 |
| 11. Public Meeting(1) | 10 | Within 60 days of DNR approval of the ACM | | | | | |
| 12. Select a Remedy(1) | 11 | Within 60 days of the public meeting | | | | | |

Notes:

1) Items 11 and 12 would occur in 2018 or later and are dependent on review and approval schedules.

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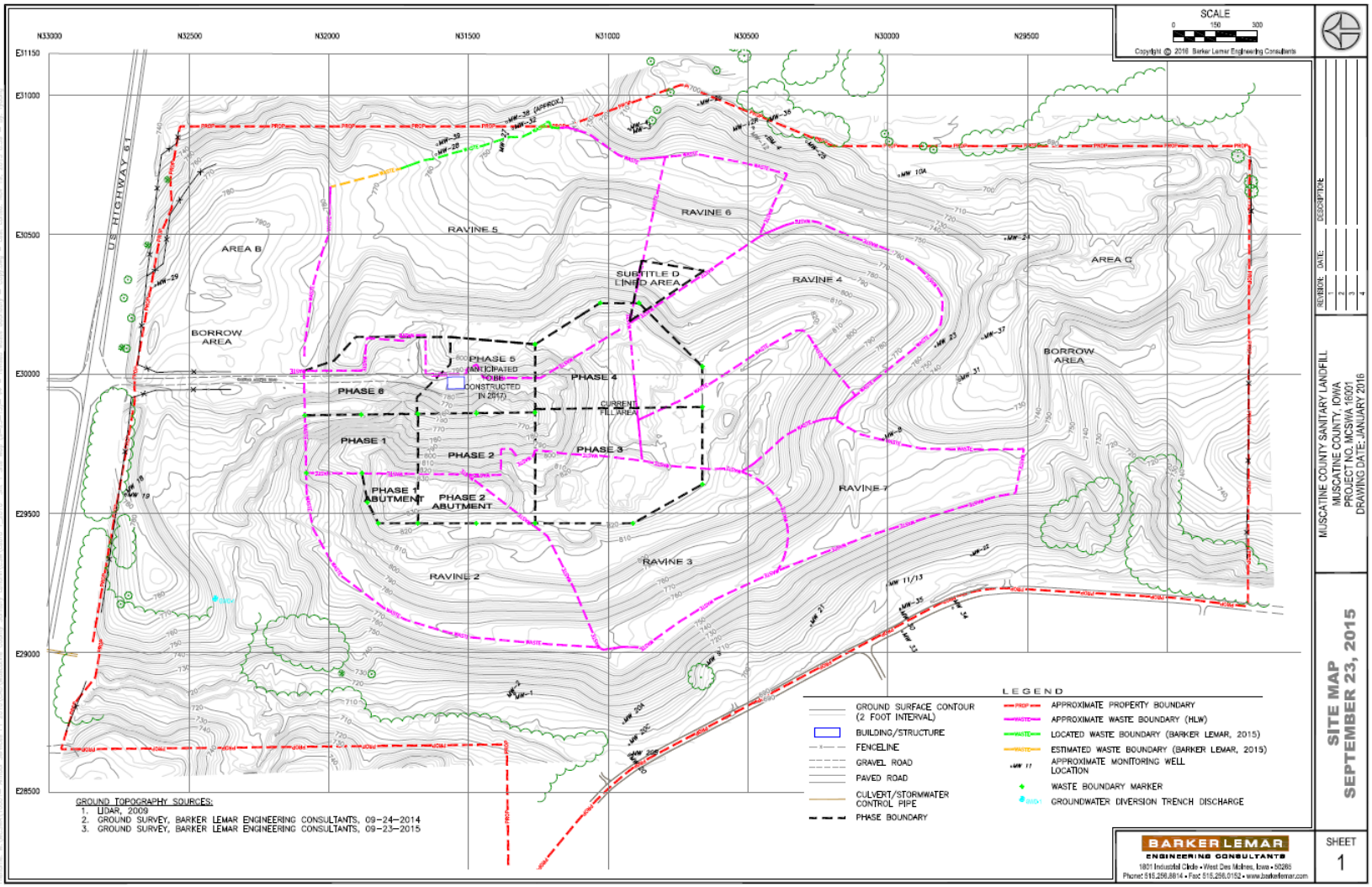
# SITE MAP


SCALE
0 150 300
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N33000
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E31150
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E28500
US HIGHWAY 61
AREA B
BORROW AREA
RAVINE 5
RAVINE 6
RAVINE 4
AREA C
BORROW AREA
SUBTITLE D LINED AREA
PHASE 5 (ANTICIPATED TO BE CONSTRUCTED IN 2017)
PHASE 4
CURRENT FILL AREA
PHASE 6
PHASE 1
PHASE 2
PHASE 3
PHASE 1 ABUTMENT
PHASE 2 ABUTMENT
RAVINE 7
RAVINE 3
RAVINE 2
LEGEND
GROUND SURFACE CONTOUR (2 FOOT INTERVAL)
BUILDING/STRUCTURE
FENCELINE
GRAVEL ROAD
PAVED ROAD
CULVERT/STORMWATER CONTROL PIPE
PHASE BOUNDARY
APPROXIMATE PROPERTY BOUNDARY
APPROXIMATE WASTE BOUNDARY (HLW)
LOCATED WASTE BOUNDARY (BARKER LEMAR, 2015)
ESTIMATED WASTE BOUNDARY (BARKER LEMAR, 2015)
APPROXIMATE MONITORING WELL LOCATION
WASTE BOUNDARY MARKER
GROUNDWATER DIVERSION TRENCH DISCHARGE
GROUND TOPOGRAPHY SOURCES:
1. LIDAR, 2009
2. GROUND SURVEY, BARKER LEMAR ENGINEERING CONSULTANTS, 09-24-2014
3. GROUND SURVEY, BARKER LEMAR ENGINEERING CONSULTANTS, 09-23-2015
REVISION DATE DESCRIPTION
MUSCATINE COUNTY SANITARY LANDFILL
MUSCATINE COUNTY, IOWA
PROJECT NO. MCSWA 16001
DRAWING DATE: JANUARY 2016
SITE MAP
SEPTEMBER 23, 2015
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SHEET
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# 2015 CONSENT ORDER FINDINGS

- Groundwater affected by the landfill is primarily in the shallower sand seams within the glacial till, however, some groundwater in bedrock has also been affected.
- The primary source of groundwater impact is leachate.
- The initial data indicates that nature is providing some groundwater treatment.
- A small area of waste extends off-site to the east.

# UPCOMING 2016 CONSENT ORDER ACTIVITIES

- Continued groundwater sampling, analysis, and data evaluation to assess natural attenuation.
- Limited additional groundwater sampling, analysis, and data evaluation to assess the source of groundwater impact.
- Completion of background sampling for the new Point of Compliance monitoring wells.
- Installation of additional monitoring wells for groundwater plume delineation, potentially required to the east and southwest.

# UPCOMING LARGER NON-CONSENT ORDER ITEMS

- Master Plan Development (2016):
  - Design/permit additional disposal airspace.
  - Increase remaining permitted capacity.
  - Plan for documenting pre-89 closure areas.
  - Plan for recertification of exposed liner.
  - Evaluate leachate storage requirements.
- Survey Control and Site Map Update (2016).
- Phase 5 Cell Construction (2017).

# QUESTIONS

BARKER LEMAR
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# THANK YOU

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