3.1.1 Cell 1

The Cell 1 perimeter boundaries were found to be further to the south, west and north than previously reported which is consistent with the findings during prior construction by [redacted]. The boundaries of Cell 1 are shown in **Figures 2** and **3A**, Boundary cover thicknesses and waste elevations for Cell 1 are also provided in **Table 1**, above.

3.1.2 Cell 2

Cell 2 boundaries were not assessed during this LOWI. It is known that Cell 2 has been covered with an approved final geomembrane cover. To preserve the integrity of this approved final cover, excavation was not performed in or around Cell 2.

3.1.3 Cell 3

The Cell 3 perimeter north boundary was found to be further to the south than previously reported. The north boundary of Cell 3 is shown in **Figures 2, 3A,** and **3B**. North boundary cover thicknesses and waste elevations for Cell 3 are also provided above in **Table 1.**

3.1.4 Cell 4

The Cell 4 perimeter north boundary was found to be further south than previously reported. The east boundary was found to be further to the east than previously reported. The north and east boundaries of Cell 4 are shown in **Figures 2**, **3B**, and **3C**. North and east cover thicknesses and waste elevations for Cell 4 can be found in **Table 1**, above.

3.1.5 Cell 5

The Cell 5 perimeter east boundary was found to be further to the east than previously reported and the west perimeter boundary was found to be further toward the west. The south boundary was found to be further south than previously reported. The east, west, and south boundaries of Cell 5 are shown in **Figures 2**, **3A**, **3B**, and **3C**. Boundary cover thicknesses and waste elevations for Cell 5 can be found above in **Table 1**.

A summary of the results of the perimeter investigation are provided in **Table 2**, below. Field logs of each test trench performed can be found in **Appendix A.** All field logs are considered preliminary field documents including field measurements which will not be used for design purposes. All design requirements are developed using the GPS surveyed data only.

Table 2. Cell Boundary Definitions

Cell #	Boundaries			
	Northern	Eastern	Southern	Western
Cell 1	Defined via two (2) perimeter test trenches.	Not investigated, therefore no change from prior assessment; assumed to be within berm separating Cell 1 from Cell 2	Defined, by one (1) test trench within the mainhaul road	Defined via five (5) perimeter test trenches.
Cell 2	Assumed, but not verified due to approved final cover			
Cell 3	Defined via four (4) perimeter test trenches.	Not investigated, therefore no change from prior assessment; Undefined. Cell 3 merges into Cell 4 on the eastern boundary.	Not investigated, therefore no change from prior assessment; Well defined by fence separating Cell 3 from the Subtitle D cell.	Not investigated, therefore no change from prior assessment; Assumed by topography, unable to be verified due to proximity to the approved final cover in Cell 2.

Cell #	Boundaries			
	Northern	Eastern	Southern	Western
Cell 4	Defined via four (4) perimeter test trenches.	Defined via six (6) perimeter test trenches.	Not investigated, therefore no change from prior assessment; Well defined, at the toe of an unmaintained haul road	Not investigated, therefore no change from prior assessment; Well defined except for intersection with Cell 3.
Cell 5	Not investigated, therefore no change from prior assessment; Well defined by unmaintained haul road	Defined via five (5) perimeter test trenches.	Defined via five (5) perimeter test trenches.	Defined via four (4) perimeter test trenches.
C&D Cell	Not investigated	Not investigated	Defined via one (1) perimeter test trench.	Not investigated

3.2 WASTE ELEVATION AND SOIL COVER THICKNESS DETERMINATION

Results from sixty (60) interior test trenches to determine the vertical extent of the waste are provided in **Table 3**, below. **Figures 2, 3A, 3B, and 3C** provide the locations of the interior test trenches. A photo log that includes pictures of the interior trenches is provided in **Appendix B**.

Table 3. Waste Elevation Determination

Cell Number	Test Trench ID	Northing	Easting	Cover Thickness (in)	Top of Waste Elevation
1	IT01W	[redacted]		8	3932.8
	IT02W			0	3931.8
	IT08W			24	3929.6
	IT09W			22	3929.7
	IT51W			38	3933.6
	IT52W			6	3935.4
	IT53W			15	3935.8
	IT54W			7	3933.0
	IT55W			16	3939.3
	IT56W			10	3937.9
	IT57W			9	3938.5
3	IT10W			3	3943.1
	IT11W			13	3937.5
	IT12W			5	3931.0
4	IT03W			9	3934.3
	IT04W			8	3933.7
	IT05W			8	3932.5
	IT06W			11	3928.3
	IT07W			11	3932.9
	IT13W			4	3934.0

[redacted]

Cell Number	Test Trench ID	Northing	Easting	Cover Thickness (in)	Top of Waste Elevation
	IT14W			7	3932.9
	IT15W			9	3933.3
	IT16W			15	3928.5
	IT17W			7	3934.4
	IT18W			10	3931.0
	IT19W			11	3931.3
	IT20W			6	3928.2
	IT21W			13	3934.3
	IT22W			17	3932.2
	IT23W			7	3937.2
	IT24N			0	3928.4
	IT25W			13	3934.7
	IT26W			6	3930.5
	IT27W			14	3932.5
	IT28W			5	3924.5
	IT29W			0	3929.8
	IT30W			1	3932.3
	IT31W			1	3931.8
	IT32W			0	3930.2
	IT33W			2	3929.6
	IT34W			3	3929.1
	IT35W			3	3931.3
	IT36W			21	3928.3
	IT37W			10	3927.3
	IT38W			6	3927.7
	IT39W			2	3930.0
	IT40W			14	3929.2
5	IT41W			11	3924.7
	IT42W			9	3924.6
	IT43W			4	3928.3
	IT44W			12	3928.0
	IT45W			12	3928.3
	IT46W			0	3928.5
	IT47W			27	3921.4
	IT48W			3	3924.7
	IT49W			17	3923.1
	IT50W			5	3923.3
	IT58W			33	3927.1
	IT59W			12	3926.1
	IT60W			14	3921.7

Top of waste elevations points have corresponding surface elevation shots to determine the depth to waste. Point identification is W = Waste below Surface Shot.

Soil cover thickness was also logged in each interior test trench. The cover thickness at each trench is provided in **Table 3**. The cover thickness ranges from 0-38 inches thick. Several concrete and debris piles were also mapped and photographed. The piles are shown on **Figures 2, 3A, 3B**, and **3C**. A photo log of the piles is provided in **Appendix B**.

3.3 SOIL COMPOSITION

The following section present the soil types observed in the field and additional soil type data generated during geotechnical testing.

3.3.1 Soil Description

In general cover soil was found to be silty or clayey sand throughout the site. Further details regarding individual test trenches can be found in the field logs in **Appendix A**.

3.3.2 Geotechnical Testing Results

Laboratory analyses were performed on two (2) perimeter test trench soil samples and five (5) interior test trench soil samples collected during the field investigation. **Table 4**, below, indicates the locations of each soil sample, the tests completed, and summarizes the test results.

Table 4. Analysis Performed on Soil Samples

Location	Depth (ft bgs)	USCS (Field Visual)	USCS (Lab)		Minus 200 Fraction (%)		Plasticity Index
			Symbol	Description	Total	Clay	
IT20-10	0 - 0.5	GW	SM	Silty sand with gravel	21.8	8.0	NP
IT20-20	0 - 0.5	GW	SC	Clayey sand with fine gravel	22.3	9.7	10.0
IT20-30	0 - 0.5	GW	SM	Silty sand with gravel	21.3	4.8	NP
IT20-40	0 - 0.5	GW	SC	Clayey sand with fine gravel	23.2	9.6	8.0
IT20-50	0 - 0.5	GW	SC	Clayey sand with fine gravel	23.0	16.0	10.0
TT20-10	0 - 0.5	SW	SM	Silty sand	14.9	3.2	NP
TT20-20	0 - 0.5	GW	SM	Silty sand with gravel	14.9	4.8	NP

USCS visual characterization was determined in the field and reported in the test trench logs. The field and lab characterizations are provided above in **Table 4**. The field interpretations made a reasonable assessment of the USCS soil characteristics; however, the lab determination prevails. The use of the trench log data will therefore be adjusted to reflect the accurate interpretation (i.e. Field GW = SM or SC and Field SW = SM).

Laboratory test data for each sample can be found in **Appendix C**. The data indicate that the soils observed and tested are consistent with prior materials placed at these locations.

4.0 QUALITY ASSURANCE AND QUALITY CONTROL

To ensure quality assurance and quality control during the LOWI field investigation activities, Arcadis had a representative on-site to oversee the LOWI field activities and independently verify that the LOWI activities complied with the LOWI Plan and the Project Work Plan. Field work and report preparation were completed in accordance with the Quality Assurance and Quality Control Plan procedures as outlined in the Project Work Plan. **Appendix A** contains the AAJV Daily Quality Control Report forms.

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5.0 REFERENCES

[redacted] 2021. Final Uniform Federal Policy – Quality Assurance Project Plan. Municipal Solid Waste Landfill. Final Cover Design at Fort Bliss, TX. Contract No. W912BV-19-D-0012. Task Order No. W912BV20F0183. April.

[redacted], Inc., 2018. Construction Summary Report. Municipal Solid Waste Landfill. Fort Bliss, Texas. Contract No. W912DY-16-D-0026 TO No. W912BV17F0126. June.

USACE, 2020. Scope of Work for Municipal Solid Waste Landfill Final Cover Design at Fort Bliss, Texas. A-E Contract No. W912BV19D0012. Task Order No. TBD. 11 August.

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FIGURES

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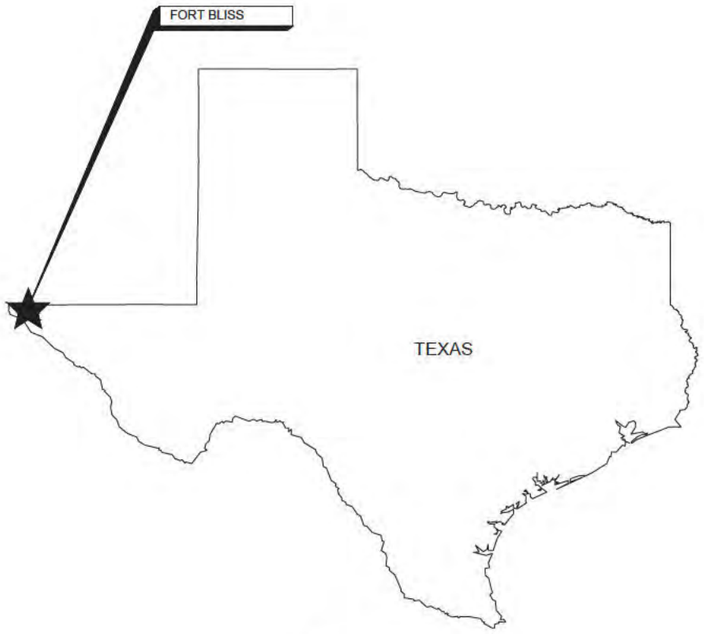

VICINITY MAP

NOT TO SCALE

[redacted]

AERIAL VICINITY MAP

NOT TO SCALE

FORT BLISS LANDFILL
FORT BLISS, TEXAS
LIMITS OF WASTE INVESTIGATION REPORT

VICINITY MAP

[redacted]

FIGURE
1

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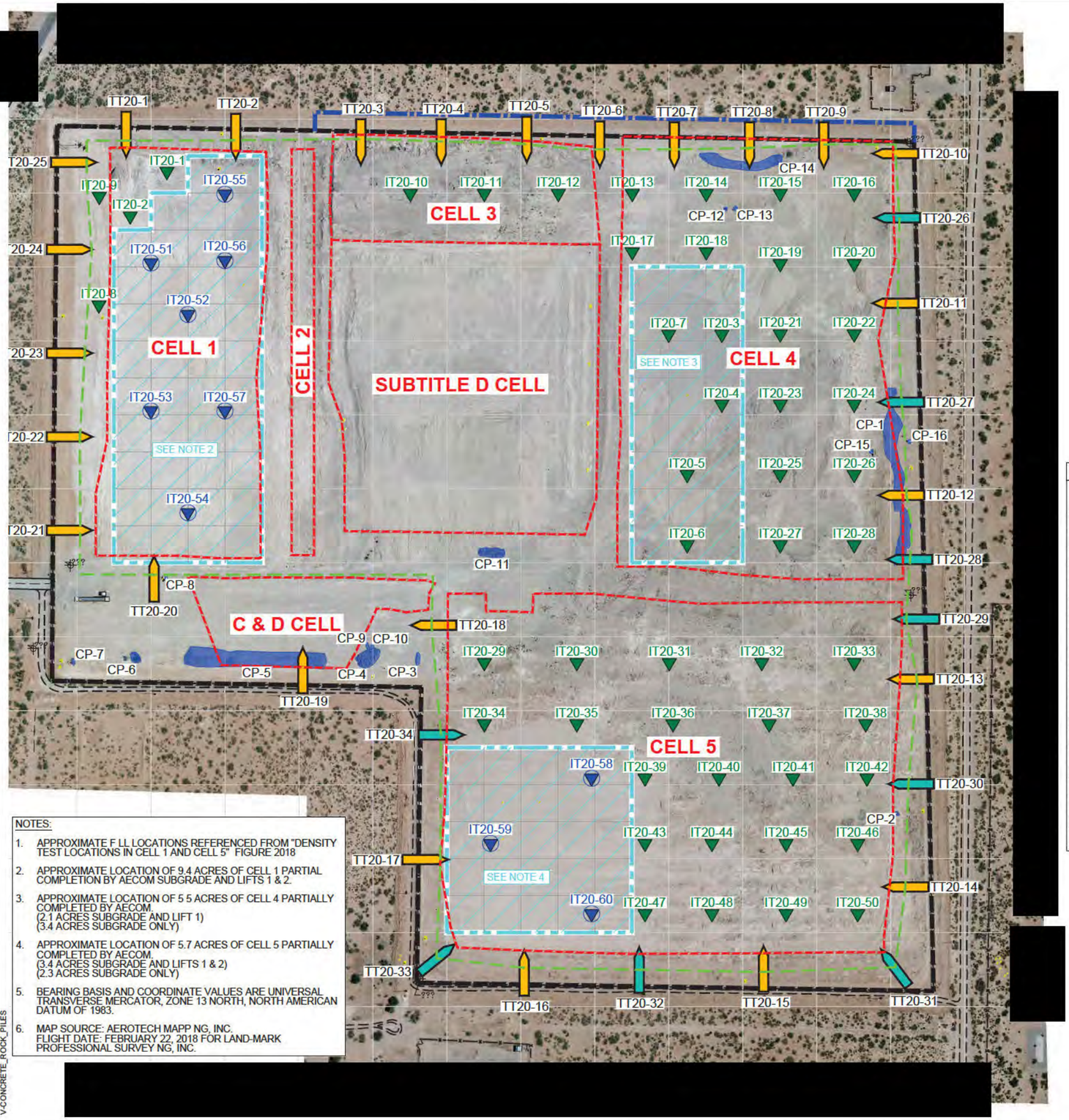

NOTES:

1. APPROXIMATE F LL LOCATIONS REFERENCED FROM "DENSITY TEST LOCATIONS IN CELL 1 AND CELL 5" FIGURE 2018
2. APPROXIMATE LOCATION OF 9.4 ACRES OF CELL 1 PARTIAL COMPLETION BY AECOM SUBGRADE AND LIFTS 1 & 2.
3. APPROXIMATE LOCATION OF 5 5 ACRES OF CELL 4 PARTIALLY COMPLETED BY AECOM.
   (2.1 ACRES SUBGRADE AND LIFT 1)
   (3.4 ACRES SUBGRADE ONLY)
4. APPROXIMATE LOCATION OF 5.7 ACRES OF CELL 5 PARTIALLY COMPLETED BY AECOM.
   (3.4 ACRES SUBGRADE AND LIFTS 1 & 2)
   (2.3 ACRES SUBGRADE ONLY)
5. BEARING BASIS AND COORDINATE VALUES ARE UNIVERSAL TRANSVERSE MERCATOR, ZONE 13 NORTH, NORTH AMERICAN DATUM OF 1983.
6. MAP SOURCE: AEROTECH MAPP NG, INC.
   FLIGHT DATE: FEBRUARY 22, 2018 FOR LAND-MARK PROFESSIONAL SURVEY NG, INC.

LEGEND

- LANDFILL PERMIT BOUNDARY
- PROPOSED BUFFER ZONE
- APPROXIMATE CELL BOUNDARY (SUBTITLE D CELL)/ASSUMED CELL BOUNDARY (ALL OTHER CELLS BASED ON 2015 LOWI)
- TOPOGRAPHIC CONTOUR
- FENCE
- DIRT ROAD
- PAVED ROAD
- PARTIAL FILL (SEE NOTES 1, 2, 3 AND 4)
- INTERIOR TRENCH (50)
- INTERIOR TRENCH TIME PERMITTING (10)
- PERIMETER TRENCH (25)
- DATA GAP PERIMETER TRENCH (9)
- CONCRETE PILE (11)
- LIMITS OF WASTE 2021

MAY 2021 FIELD INVESTIGATION RESULTS & TOP OF WASTE ELEVATIONS

ID	NORTHING	EASTING	TOP OF WASTE ELEVATION
IT01W	[redacted]		3932.8
IT02W			3931.8
IT03W			3934.3
IT04W			3933.7
IT05W			3932.5
IT06W			3928.3
IT07W			3932.9
IT08W			3929.6
IT09W			3929.7
IT10W			3943.1
IT11W			3937.5
IT12W			3931.0
IT13W			3934.0
IT14W			3932.9
IT15W			3933.3
IT16W			3928.5
IT17W			3934.4
IT18W			3931.0
IT19W			3931.3
IT20W			3928.2

ID	NORTHING	EASTING	TOP OF WASTE ELEVATION
IT01W	[redacted]		3932.8
IT02W			3931.8
IT03W			3934.3
IT04W			3933.7
IT05W			3932.5
IT06W			3928.3
IT07W			3932.9
IT08W			3929.6
IT09W			3929.7
IT10W			3943.1
IT11W			3937.5
IT12W			3931.0
IT13W			3934.0
IT14W			3932.9
IT15W			3933.3
IT16W			3928.5
IT17W			3934.4
IT18W			3931.0
IT19W			3931.3
IT20W			3928.2

ID	NORTHING	EASTING	TOP OF WASTE ELEVATION
IT01W		[redacted]	3932.8
IT02W			3931.8
IT03W			3934.3
IT04W			3933.7
IT05W			3932.5
IT06W			3928.3
IT07W			3932.9
IT08W			3929.6
IT09W			3929.7
IT10W			3943.1
IT11W			3937.5
IT12W			3931.0
IT13W			3934.0
IT14W			3932.9
IT15W			3933.3
IT16W			3928.5
IT17W			3934.4
IT18W			3931.0
IT19W			3931.3
IT20W			3928.2

ABBREVIATION LEGEND

IT = INTERNAL TRENCH
TT = PERIMETER TRENCH
S = GROUND SURFACE AT START OF PERIMETER TRENCH
F = GROUND SURFACE AT END OF PERIMETER TRENCH
W1 = WASTE BELOW GRADE AT START OF PERIMETER TRENCH
W2 = LIMIT OF WASTE BELOW GRADE WITHIN PERIMETER TRENCH
N = NO WASTE ENCOUNTERED
CP = CONCRETE PILE

0 150' 300'
GRAPHIC SCALE

FORT BLISS LANDFILL
FORT BLISS, TEXAS
FINAL LIMITS OF WASTE INVESTIGATION REPORT

2021 FIELD INVESTIGATION RESULTS & TOP OF WASTE ELEVATIONS

[redacted]

FIGURE
2

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