

## CJ Interim Completion Report – Addendum M

### Appendix A. Construction Verification Data

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**NOTE:** Appendices A1 and A5 through A7 are not included as they are not relevant to the period covered in this Addendum.

**Appendix A2.**  
**RRM**

**Standard Proctor Test Results Summary**  
**Lift Approval Summaries**  
**Lift Approval Package**  
**Top of Waste Buyoff Surveys**



## Appendix A2. RRM Standard Proctor Test Results Summary

Proctor ID #	Date sampled	Date Approved	Maximum Dry Density (lb/ft <sup>3</sup> )	Optimum Moisture Content %	Proctor Description
RRM # 521 (Set # 172)	10/04/2017	10/16/2017	109.3	11.1	Sand stockpile. Red and brown sand mixed w/sweet sugar sand. Approx. 1% clay.
DB2-20200422	4/22/2020	6/8/2020	112.5	15.2	Sandy, lean clay (CL)
DB5-20200422	4/22/2020	6/8/2020	110.0	16.2	Sandy, lean clay (CL)
DB6-20200422	4/22/2020	6/8/2020	110.3	17.4	Sandy, lean clay (CL)
NWL-20200422	4/22/2020	6/2/2020	103.9	15.8	Silty sand (SM)
DB5-20210408	4/8/2021	5/5/2021	108.5	16.8	Sandy, lean clay (CL)
DB4-20210707	7/7/2021	7/26/2021	108	17.5	Sandy, lean clay (CL)
DB6-20210707	7/7/2021	7/26/2021	105.7	18.6	Sandy, lean clay (CL)

## Appendix A2. RRM Lift Approval Summaries

October 2022										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
10/05/22	UW1O20220929-00	N/A	6854	6,854	100.0	1.9	N/A	N/A	N/A	N/A
10/11/22	UW1O20221005-00	N/A	7480	14,334	99.9	1.9	N/A	N/A	N/A	N/A
10/17/22	UW1O20221011-00	N/A	7285	21,619	100.0	1.8	N/A	N/A	N/A	N/A
10/18/22	UW2M5N220926-00	N/A	3694	25,313	99.9	1.9	N/A	N/A	N/A	N/A
10/18/22	UW2H16221018-00	N/A	1013	26,326	99.3	1.4	N/A	N/A	N/A	N/A
10/19/22	UW1O20221017-00	1	4043	30,369	99.6	1.0	NLW-20200422	N/A	N/A	N/A
10/20/22	UW2M5N221018-00	N/A	3778	34,147	99.9	1.9	N/A	N/A	N/A	N/A
10/24/22	UW2H16221020-00	N/A	804	34,951	100.0	2.0	N/A	N/A	N/A	N/A
10/27/22	UW2M5N221020-00	N/A	1315	36,266	100.0	1.9	N/A	N/A	N/A	N/A
10/27/22	UW2M1N221026-00	N/A	4434	40,700	N/A	1.9	N/A	N/A	N/A	N/A
10/31/22	UW2L6N221027-00	1	2826	43,526	100.0	2.0	NLW-20200422	N/A	N/A	N/A
<p style="text-align: center;"> <b>Average CBCS Screen Passing Pixels (%) = 99.9</b>  <b>Total Quantity Approved (yd<sup>3</sup>) = 43,526</b>  <b>Total # of Nuclear Density Gauge Tests = 0</b>  <b>Total # of Moisture Tests = 2</b>  <b>Quantity per Moisture Test (yd<sup>3</sup>) = 0</b>  <b>Total Average Thickness (ft) = 1.8</b> </p>										

## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shot example from October 2022. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.

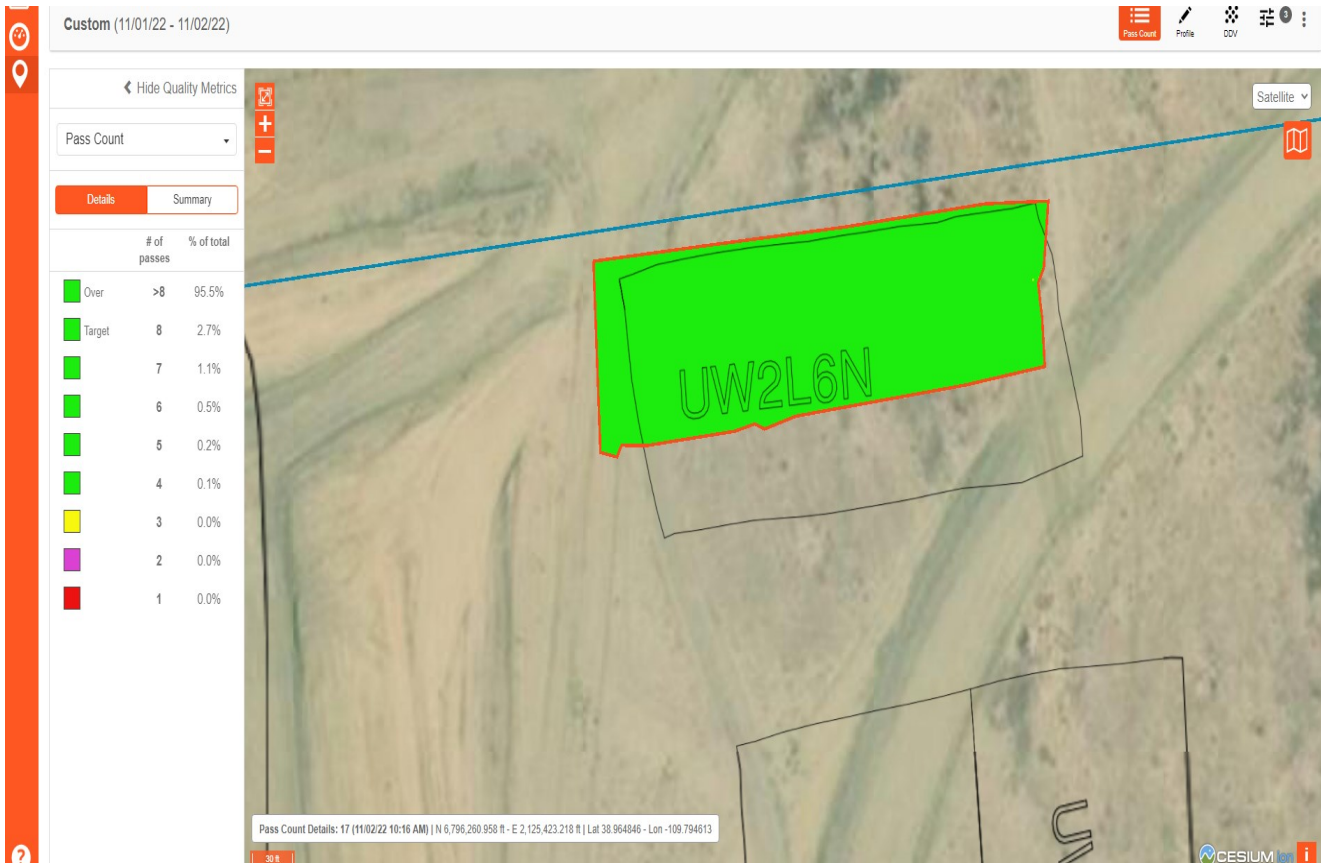


## Appendix A2. RRM Lift Approval Summaries (continued)

November 2022										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
11/01/22	UW2L6N221031-00	N/A	2640	2,640	100.0	1.9	N/A	N/A	N/A	N/A
11/02/22	UW2L6N221101-00	N/A	1832	4,472	100.0	1.3	N/A	N/A	N/A	N/A
11/07/22	UW2M1N221031-00	N/A	4073	8,545	100.0	1.7	N/A	N/A	N/A	N/A
11/08/22	UW2P2N221103-00	N/A	3,428	11,973	N/A	1.6	N/A	N/A	N/A	N/A
11/08/22	UW2L6N221108-00	N/A	1128	13,101	99.5	1.5	N/A	N/A	N/A	N/A
11/09/22	UW2L6N221108-01	N/A	1349	14,450	99.9	1.7	N/A	N/A	N/A	N/A
11/14/22	UW2G15221108-00	N/A	1192	15,642	100.0	1.8	N/A	N/A	N/A	N/A
11/14/22	UW2L6N221114-00	N/A	1378	17,020	99.6	1.8	N/A	N/A	N/A	N/A
11/15/22	UW2P2N221108-00	N/A	3943	20,963	100.0	1.9	N/A	N/A	N/A	N/A
11/15/22	UW2L6N221114-01	N/A	1560	22,523	99.7	2.0	N/A	N/A	N/A	N/A
11/16/22	UW2G15221114-00	N/A	1184	23,707	99.3	1.8	N/A	N/A	N/A	N/A
11/17/22	UW2G15221117-00	0	1276	24,983	100.0	1.8	N/A	N/A	N/A	N/A
11/17/22	UW2M1N221114-00	1	4540	29,523	99.8	1.9	NLW-20200422	N/A	N/A	N/A
11/17/22	UW2G15221117-01	N/A	1272	30,795	100.0	1.8	N/A	N/A	N/A	N/A
11/22/22	UW2G15221121-00	N/A	1261	32,056	99.0	1.8	N/A	N/A	N/A	N/A
11/23/22	UW2G15221122-00	N/A	1256	33,312	98.9	1.8	N/A	N/A	N/A	N/A
11/23/22	UW2G15221123-00	N/A	1232	34,544	98.8	1.8	N/A	N/A	N/A	N/A
11/28/22	UW2P2N221117-00	N/A	4051	38,595	100.0	1.8	N/A	N/A	N/A	N/A
11/28/22	UW2G15221128-00	N/A	1195	39,790	100.0	1.7	N/A	N/A	N/A	N/A
11/29/22	UW2G15221128-01	N/A	1254	41,044	99.7	1.8	N/A	N/A	N/A	N/A
11/29/22	UW2G15221129-00	N/A	1277	42,321	99.1	1.8	N/A	N/A	N/A	N/A
11/30/22	UW2G15221130-00	1	1272	43,593	96.9	1.8	DB6-20200422	N/A	N/A	N/A
<p style="text-align: center;"> <b>Average CBCS Screen Passing Pixels (%) = 99.5</b>  <b>Total Quantity Approved (yd<sup>3</sup>) = 43,593</b>  <b>Total # of Nuclear Density Gauge Tests = 0</b>  <b>Total # of Moisture Tests = 2</b>  <b>Quantity per Moisture Test (yd<sup>3</sup>) = N/A</b>  <b>Total Average Thickness (ft) = 1.8</b> </p>										

## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shot example from November 2022. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.

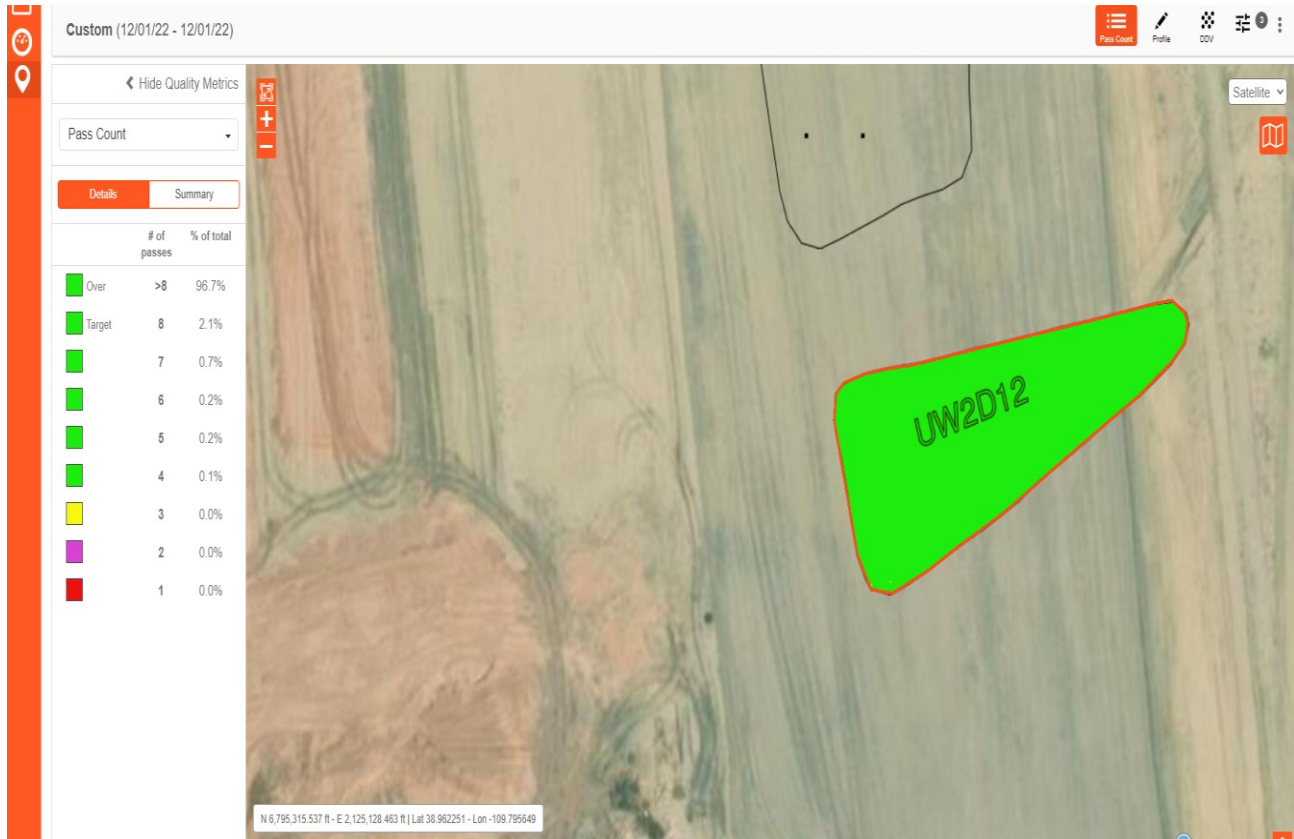


## Appendix A2. RRM Lift Approval Summaries (*continued*)

December 2022										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
12/01/22	UW2D12221201-00	N/A	1968	1,968	100.0	1.8	N/A	N/A	N/A	N/A
12/05/22	UW2M1N221128-00	N/A	4387	6,355	99.9	1.8	N/A	N/A	N/A	N/A
12/06/22	UW2D12221205-00	N/A	1981	8,336	100.0	1.8	N/A	N/A	N/A	N/A
12/06/22	UW2D12221206-00	N/A	2029	10,365	100.0	1.8	N/A	N/A	N/A	N/A
12/08/22	UW2D12221206-01	N/A	1467	11,832	99.9	1.3	N/A	N/A	N/A	N/A
12/08/22	UW2P2N221205-00	1	3947	15,779	99.9	1.8	NWL-20200422	N/A	N/A	N/A
12/13/22	UW2D12221208-00	N/A	849	16,628	98.7	0.8	N/A	N/A	N/A	N/A
12/14/22	UW2D12221213-00	N/A	1820	18,448	100.0	1.8	N/A	N/A	N/A	N/A
12/19/22	UW2D12221214-00	N/A	1921	20,369	98.3	1.9	N/A	N/A	N/A	N/A
12/19/22	UW2L3N221208-00	N/A	4262	24,631	100.0	1.9	N/A	N/A	N/A	N/A
12/21/22	UW2D12221219-00	N/A	1738	26,369	99.7	1.7	N/A	N/A	N/A	N/A
12/21/22	UW2O3N221215-00	1	4338	30,707	100.0	1.8	NWL-20200422	N/A	N/A	N/A
12/22/22	UW2L3N221220-00	N/A	4219	34,926	100.0	1.8	N/A	N/A	N/A	N/A
12/27/22	UW2O3N221222-00	1	3964	38,890	99.8	1.8	NWL-20200422	N/A	N/A	N/A
<p style="text-align: center;"> <b>Average CBCS Screen Passing Pixels (%) = 99.7</b>  <b>Total Quantity Approved (yd<sup>3</sup>) = 38,890</b>  <b>Total # of Nuclear Density Gauge Tests = 0</b>  <b>Total # of Moisture Tests = 3</b>  <b>Quantity per Moisture Test (yd<sup>3</sup>) = N/A</b>  <b>Total Average Thickness (ft) = 1.7</b> </p>										

## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shot example from December 2022. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.



## Appendix A2. RRM Lift Approval Summaries (*continued*)

January 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
01/24/23	UW2N08230123-00	N/A	2534	2,534	N/A	1.4	N/A	N/A	N/A	N/A
01/26/23	UW2N08230124-00	N/A	3011	5,545	97.9	1.8	N/A	N/A	N/A	N/A
01/30/23	UW2N08230126-00	N/A	3044	8,589	100.0	1.8	N/A	N/A	N/A	N/A
01/31/23	UW2N08230130-00	N/A	3353	11,942	100.0	2.0	N/A	N/A	N/A	N/A
01/31/23	UW2N08230131-00	N/A	3475	15,417	99.8	2.0	N/A	N/A	N/A	N/A
<p style="text-align: center;"> Average CBCS Screen Passing Pixels (%) = 99.4  Total Quantity Approved (yd<sup>3</sup>) = 15,417  Total # of Nuclear Density Gauge Tests = 0  Total # of Moisture Tests = 0  Quantity per Moisture Test (yd<sup>3</sup>) = N/A  Total Average Thickness (ft) = 1.8 </p>										



## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shot example from January 2023. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.



## Appendix A2. RRM Lift Approval Summaries (*continued*)

February 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
02/01/23	UW2L3N221227-00	N/A	4,769	4,769	100.0	2.0	N/A	N/A	N/A	N/A
02/02/23	UW2M06230201-00	N/A	3446	8,215	100.0	2.0	N/A	N/A	N/A	N/A
02/06/23	UW2M06230202-00	N/A	3137	11,352	100.0	1.9	N/A	N/A	N/A	N/A
02/07/23	UW2O4N230201-00	N/A	4,725	16,077	100.0	1.9	N/A	N/A	N/A	N/A
02/08/23	UW2M06230206-00	1	3315	19,392	100.0	2.0	NWL-20200422	N/A	N/A	N/A
02/13/23	UW2L3N230208-00	N/A	4289	23,681	100.0	1.9	N/A	N/A	N/A	N/A
02/13/23	UW2O4N230208-00	N/A	4923	28,604	99.6	2.0	N/A	N/A	N/A	N/A
02/15/23	UW2M06230213-00	N/A	3274	31,878	99.9	1.9	N/A	N/A	N/A	N/A
02/15/23	UW2L3N230213-00	N/A	4364	36,242	100.0	2.0	N/A	N/A	N/A	N/A
02/16/23	UW2O4N230214-00	N/A	4742	40,984	100.0	1.9	N/A	N/A	N/A	N/A
02/22/23	UW2L3N230215-00	1	4368	45,352	99.9	2.0	NWL-20200422	N/A	N/A	N/A
02/22/23	UW2M06230215-00	N/A	3366	48,718	99.9	2.0	N/A	N/A	N/A	N/A
02/23/23	UW2O4N230221-00	1	4871	53,589	99.7	2.0	NWL-20200422	N/A	N/A	N/A
02/28/23	UW2L04230223-00	N/A	3786	57,375	100.0	2.0	N/A	N/A	N/A	N/A
02/28/23	UW2K4N230223-00	N/A	4472	61,847	100.0	2.0	N/A	N/A	N/A	N/A
<p style="text-align: center;"> Average CBCS Screen Passing Pixels (%) = 99.9  Total Quantity Approved (yd<sup>3</sup>) = 61,847  Total # of Nuclear Density Gauge Tests = 0  Total # of Moisture Tests = 3  Quantity per Moisture Test (yd<sup>3</sup>) = 0  Total Average Thickness (ft) = 2.0 </p>										

## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shot example from February 2023. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.



## Appendix A2. RRM Lift Approval Summaries (*continued*)

March 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
03/07/23	UW2N5N230227-00	2	4043	4,043	100.0	1.8	NWL-20200422	N/A	N/A	N/A
03/09/23	UW2L04230307-00	0	3889	7,932	99.9	2.0	N/A	N/A	N/A	N/A
03/09/23	UW2K4N230307-00	0	4581	12,513	100.0	2.0	N/A	N/A	N/A	N/A
03/13/23	UW2N5N230309-00	1	4241	16,754	100.0	1.9	NWL-20200422	N/A	N/A	N/A
03/21/23	UW2L04230313-00	1	3707	20,461	100.0	1.9	NWL-20200422	N/A	N/A	N/A
03/28/23	UW2K4N230313-00	1	4518	24,979	99.4	2.0	NWL-20200422	N/A	N/A	N/A
03/28/23	UW2N5N230327-00	0	3898	28,877	100.0	1.8	N/A	N/A	N/A	N/A
03/30/23	UW2L04230328-00	1	3902	32,779	99.9	2.0	NWL-20200422	N/A	N/A	N/A
03/30/23	UW2K4N230328-00	1	4391	37,170	99.8	1.9	NWL-20200422	N/A	N/A	N/A
<p style="text-align: center;"> Average CBCS Screen Passing Pixels (%) = 99.9  Total Quantity Approved (yd<sup>3</sup>) = 37,170  Total # of Nuclear Density Gauge Tests = 0  Total # of Moisture Tests = 7  Quantity per Moisture Test (yd<sup>3</sup>) = 5,310  Total Average Thickness (ft) = 1.9 </p>										

## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shot example from March 2023. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.



## Appendix A2. RRM Lift Approval Summaries (*continued*)

April 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
04/03/23	UW2N5N230330-00	N/A	4253	4,253	100.0	1.9	N/A	N/A	N/A	N/A
04/05/23	UW2L04230403-00	N/A	3847	8,100	100.0	2.0	N/A	N/A	N/A	N/A
04/05/23	UW2K4N230403-00	N/A	4285	12,385	99.9	1.9	N/A	N/A	N/A	N/A
04/06/23	UW2N5N230405-00	N/A	4322	16,707	99.9	2.0	N/A	N/A	N/A	N/A
04/10/23	UW2L04230406-00	N/A	3547	20,254	99.3	1.9	N/A	N/A	N/A	N/A
04/10/23	UW2K4N230406-00	N/A	3,711	23,965	98.9	1.6	N/A	N/A	N/A	N/A
04/12/23	UW2L04230411-00	N/A	3648	27,613	99.9	1.9	N/A	N/A	N/A	N/A
04/12/23	UW2K4N230411-00	N/A	3864	31,477	99.6	1.7	N/A	N/A	N/A	N/A
04/12/23	UW2N5N230410-00	N/A	3536	35,013	99.7	1.6	N/A	N/A	N/A	N/A
04/17/23	UW2K4N230412-00	N/A	2114	37,127	99.5	1.4	N/A	N/A	N/A	N/A
04/17/23	UW2N5N230413-00	N/A	2729	39,856	99.5	1.9	N/A	N/A	N/A	N/A
04/18/23	UW2J02230412-00	N/A	4494	44,350	99.9	1.9	N/A	N/A	N/A	N/A
04/19/23	UW2N5N230418-00	N/A	2724	47,074	99.9	1.8	N/A	N/A	N/A	N/A
04/20/23	UW2K4N230418-00	N/A	2991	50,065	100.0	1.9	N/A	N/A	N/A	N/A
04/24/23	UW2J02230419-00	N/A	4109	54,174	100.0	1.8	N/A	N/A	N/A	N/A
04/25/23	UW2J02230424-00	N/A	4025	58,199	100.0	1.7	N/A	N/A	N/A	N/A
04/26/23	UW2F26230426-00	N/A	4092	62,291	0.0	1.7	N/A	N/A	N/A	N/A
04/27/23	UW2N5N230425-00	N/A	2959	65,250	99.8	2.0	N/A	N/A	N/A	N/A
<p style="text-align: center;"> <b>Average CBCS Screen Passing Pixels (%) = 99.7</b>  <b>Total Quantity Approved (yd<sup>3</sup>) = 65,250</b>  <b>Total # of Nuclear Density Gauge Tests = 0</b>  <b>Total # of Moisture Tests = 0</b>  <b>Quantity per Moisture Test (yd<sup>3</sup>) = 0</b>  <b>Total Average Thickness (ft) = 1.8</b> </p>										



## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shots example from April 2023. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.



## Appendix A2. RRM Lift Approval Summaries (*continued*)

May 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd³)	Cumulative Quantity Approved (yd³)	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
05/02/23	UW2K4N230425-00	N/A	2865	2,865	99.8	1.8	N/A	N/A	N/A	N/A
05/03/23	UW2J02230501-00	N/A	4140	7,005	100.0	1.8	N/A	N/A	N/A	N/A
05/03/23	UW2N5N230502-00	N/A	2919	9,924	100.0	2.0	N/A	N/A	N/A	N/A
05/04/23	UW2K4N230503-00	N/A	3070	12,994	100.0	2.0	N/A	N/A	N/A	N/A
05/08/23	UW2J02230504-00	N/A	4514	17,508	100.0	1.9	N/A	N/A	N/A	N/A
05/09/23	UW2F26230426-01	N/A	4110	21,618	100.0	1.7	N/A	N/A	N/A	N/A
05/10/23	UW2J02230509-00	N/A	4261	25,879	98.9	1.8	N/A	N/A	N/A	N/A
05/16/23	UW2J02230510-00	N/A	4296	30,175	97.3	1.9	N/A	N/A	N/A	N/A
05/16/23	UW2F26230510-00	N/A	4635	34,810	99.6	2.0	N/A	N/A	N/A	N/A
05/17/23	UW2F26230516-00	N/A	4546	39,356	99.8	1.9	N/A	N/A	N/A	N/A
05/18/23	UW2F26230517-00	N/A	4696	44,052	99.5	2.0	N/A	N/A	N/A	N/A
05/23/23	UW2F26230518-00	N/A	4734	48,786	99.9	2.0	N/A	N/A	N/A	N/A
05/24/23	UW2Q07230523-00	N/A	2455	51,241	N/A	1.6	N/A	N/A	N/A	N/A
05/24/23	UW2G26230522-00	N/A	5448	56,689	96.1	1.9	N/A	N/A	N/A	N/A
05/25/23	UW2G26230523-00	N/A	5332	62,021	99.6	1.9	N/A	N/A	N/A	N/A
05/30/23	UW2Q07230523-01	N/A	2765	64,786	99.9	1.8	N/A	N/A	N/A	N/A
05/30/23	UW2G26230524-00	N/A	5664	70,450	99.9	2.0	N/A	N/A	N/A	N/A
05/31/23	UW2Q07230530-00	N/A	2743	73,193	100.0	1.8	N/A	N/A	N/A	N/A
Average CBCS Screen Passing Pixels (%) = 99.4										
Total Quantity Approved (yd³) = 73,193										
Total # of Nuclear Density Gauge Tests = 0										
Total # of Moisture Tests = 0										
Quantity per Moisture Test (yd³) = #DIV/0!										
Total Average Thickness (ft) = 1.9										



## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shot example from May 2023. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.

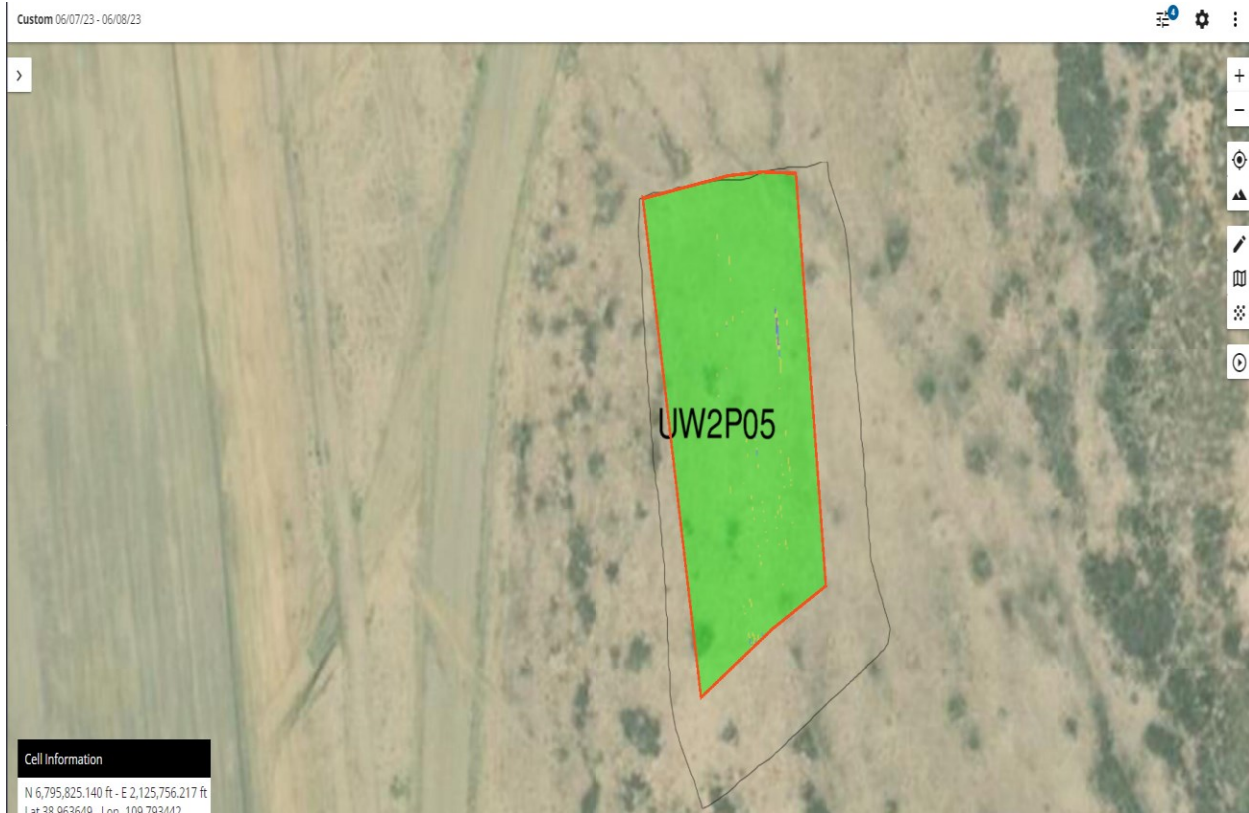


## Appendix A2. RRM Lift Approval Summaries (*continued*)

June 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
06/01/23	UW2G26230531-00	0	5062	5,062	99.9	1.8	N/A	0	0	0
06/05/23	UW2S6N230601-00	0	1390	6,452	N/A	1.9	N/A	0	0	0
06/05/23	UW2Q07230601-00	0	2899	9,351	100.0	1.9	N/A	0	0	0
06/06/23	UW2Q07230605-00	0	2903	12,254	100.0	1.9	N/A	0	0	0
06/06/23	UW2G26230601-00	0	2671	14,925	99.6	0.9	N/A	0	0	0
06/08/23	UW2P05230607-00	0	3944	18,869	100.0	1.9	N/A	0	0	0
06/08/23	UW2Q07230606-00	0	2733	21,602	100.0	1.8	N/A	0	0	0
06/08/23	UW2S4N230605-00	0	1901	23,503	N/A	1.9	N/A	0	0	0
06/12/23	UW2R6N230608-00	0	3725	27,228	99.0	1.9	N/A	0	0	0
06/13/23	UW2P05230608-00	0	4052	31,280	99.9	1.9	N/A	0	0	0
06/13/23	UW2R6N230612-00	0	3,848	35,128	100.0	1.9	N/A	0	0	0
06/14/23	UW2P05230613-00	3	4,131	39,259	99.9	1.9	DB4-20210707	3	0	95.2
06/15/23	UW2R6N230614-00	3	3680	42,939	99.9	1.9	DB4-20210707 DB6-20210707	3	0	93.2
06/19/23	UW2P05230615-00	0	4194	47,133	100.0	1.9	N/A	0	0	0
06/20/23	UW2R6N230619-00	0	3746	50,879	100.0	1.9	N/A	0	0	0
06/21/23	UW2P05230619-00	3	4223	55,102	100.0	1.9	DB2-20200422 RRM 521	3	0	94.6
06/22/23	UW2R6N230620-00	0	3,744	58,846	99.9	1.9	N/A	0	0	0
06/22/23	UW2P05230621-00	0	4,321	63,167	100.0	2.0	N/A	0	0	0
06/26/23	UW2R6N230622-00	0	3,820	66,987	100.0	2.0	N/A	0	0	0
06/27/23	UW2P05230626-00	0	2,243	69,230	99.3	1.0	N/A	0	0	0
06/27/23	UW2R6N230627-00	0	3,841	73,071	99.9	2.0	N/A	0	0	0
06/28/23	UW2P05230627-00	0	4,017	77,088	99.9	1.8	N/A	0	0	0
06/29/23	UW2Q7N230628-00	0	3,556	80,644	99.9	2.0	N/A	0	0	0
06/29/23	UW2N02230629-00	0	3,761	84,405	99.9	1.9	N/A	0	0	0
<p>Average CBCS Screen Passing Pixels (%) = 99.9</p> <p>Total Quantity Approved (yd<sup>3</sup>) = 84,405</p> <p>Total # of Nuclear Density Gauge Tests = 9</p> <p>Total # of Moisture Tests = 9</p> <p>Quantity per Moisture Test (yd<sup>3</sup>) = 9,378</p> <p>Total Average Thickness (ft) = 1.8</p>										

## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shot example from June 2023. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.

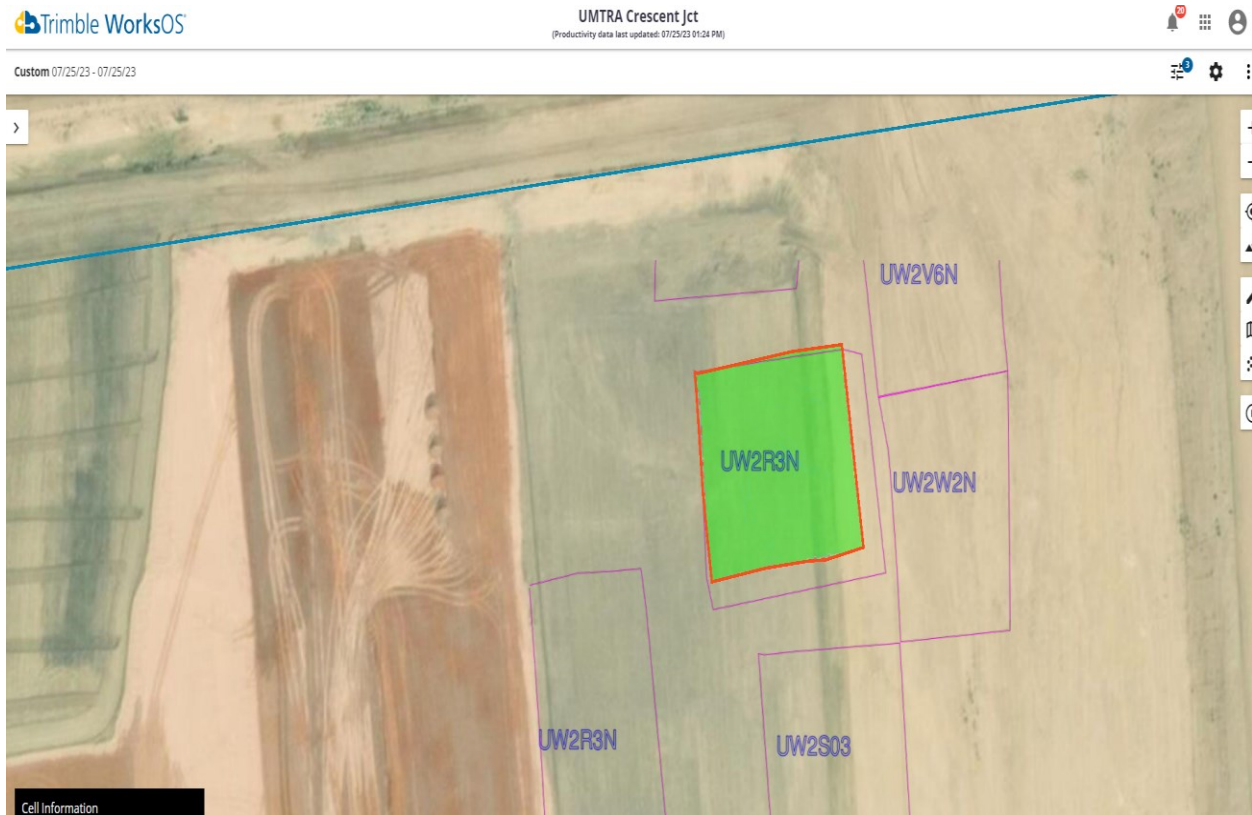


## Appendix A2. RRM Lift Approval Summaries (*continued*)

July 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
07/03/23	UW2Q7N230629-00	0	2907	2,907	100.0	1.6	N/A	0	0	0
07/03/23	UW2Q7N230703-00	0	1666	4,573	99.3	0.9	N/A	0	0	0
07/03/23	UW2N02230703-00	0	3722	8,295	99.8	1.8	N/A	0	0	0
07/04/23	UW2Q7N230703-01	3	3243	11,538	99.4	1.8	DB4-20210707	3	0	95
07/05/23	UW2S1N230615-00	0	2526	14,064	N/A	1.9	N/A	0	0	0
07/05/23	UW2N02230704-00	0	3895	17,959	99.8	1.9	N/A	0	0	0
07/05/23	UW2S1N230705-00	0	2,369	20,328	100.0	1.8	N/A	0	0	0
07/10/23	UW2Q7N230706-00	0	1813	22,141	99.7	1.9	N/A	0	0	0
07/11/23	UW2M01230706-00	0	4,168	26,309	99.4	1.8	N/A	0	0	0
07/12/23	UW2Q7N230711-00	3	1,744	28,053	99.9	1.8	DB5-20200422	3	0	93.1
07/12/23	UW2M01230711-00	0	4,364	32,417	98.2	1.9	N/A	0	0	0
07/13/23	UW2S1N230711-00	0	2,556	34,973	100.0	1.9	N/A	0	0	0
07/13/23	UW2B21230713-00	0	1,701	36,674	N/A	1.8	N/A	0	0	0
07/18/23	UW2S1N230717-00	3	2,184	38,858	N/A	1.8	DB5-20200422	3	0	94
07/18/23	UW2B21230718-00	3	1,404	40,262	N/A	1.7	DB5-20200422	3	0	94.1
07/18/23	UW2M01230713-00	0	4,349	44,611	99.6	1.9	N/A	0	0	0
07/19/23	UW2S1N230718-00	0	2,112	46,723	99.8	1.8	N/A	0	0	0
07/20/23	UW2M01230719-00	0	1,420	48,143	99.7	1.3	N/A	0	0	0
07/24/23	UW2S1N230719-00	0	2,214	50,357	99.8	1.9	N/A	0	0	0
07/24/23	UW2M01230720-00	0	3,712	54,069	99.6	1.8	N/A	0	0	0
07/25/23	UW2B21230720-00	0	1,220	55,289	98.7	1.6	N/A	0	0	0
07/25/23	UW2R3N230724-00	0	3,815	59,104	99.2	2.0	N/A	0	0	0
07/26/23	UW2A21230725-00	0	1,227	60,331	99.7	1.7	N/A	0	0	0
07/27/23	UW2M01230725-00	0	3,754	64,085	99.4	1.8	N/A	0	0	0
07/31/23	UW2R3N230725-00	0	3,722	67,807	100.0	1.9	N/A	0	0	0
07/31/23	UW2M01230726-00	0	3,970	71,777	99.8	2.0	N/A	0	0	0
<p style="text-align: center;">Average CBCS Screen Passing Pixels (%) = 99.6  Total Quantity Approved (yd<sup>3</sup>) = 71,777  Total # of Nuclear Density Gauge Tests = 12  Total # of Moisture Tests = 12  Quantity per Moisture Test (yd<sup>3</sup>) = 5,981  Total Average Thickness (ft) = 1.8</p>										

## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shot example from July 2023. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.



## Appendix A2. RRM Lift Approval Summaries (*continued*)

August 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
08/02/23	UW2Q7N230731-00	0	1618	1,618	99.9	2.0	N/A	0	0	0
08/02/23	UW2A21230801-00	0	1177	2,795	99.9	1.8	N/A	0	0	0
08/02/23	UW2R3N230801-00	0	3298	6,093	99.9	1.9	N/A	0	0	0
08/03/23	UW2M01230802-00	6	3,819	9,912	99.9	1.9	RRM-521	6	0	93.6
08/07/23	UW2R3N230803-00	0	2,912	12,824	99.3	1.9	N/A	0	0	0
08/07/23	UW2A21230803-00	0	981	13,805	99.2	1.7	N/A	0	0	0
08/07/23	UW2R3N230807-00	0	2,640	16,445	99.9	1.9	N/A	0	0	0
08/08/23	UW2A21230807-00	0	943	17,388	99.8	1.8	N/A	0	0	0
08/08/23	UW2R3N230808-00	0	2,343	19,731	99.9	1.9	N/A	0	0	0
08/09/23	UW2R3N230808-01	0	2,194	21,925	100.0	1.9	N/A	0	0	0
08/09/23	UW2R3N230809-00	0	1,257	23,182	100.0	1.2	N/A	0	0	0
08/09/23	UW2A21230809-00	0	900	24,082	100.0	1.9	N/A	0	0	0
08/10/23	UW2R3N230809-01	1	1,893	25,975	99.6	1.9	DB5-20210408	0	0	0
08/14/23	UW2S03230808-00	1	4,973	30,948	N/A	1.9	RRM-521	0	0	0
08/15/23	UW2S03230814-00	0	4,698	35,646	99.8	1.8	N/A	0	0	0
08/17/23	UW2R3N230816-00	3	1,820	37,466	N/A	1.8	DB5-20210408	3	0	93.5
08/21/23	UW2R3N230817-00	0	1,768	39,234	100.0	1.9	N/A	0	0	0
08/21/23	UW2S03230815-00	0	4,418	43,652	99.8	1.9	N/A	0	0	0
08/23/23	UW2S03230821-00	0	3,885	47,537	99.8	1.8	N/A	0	0	0
08/24/23	UW2Q4N230823-00	0	1,922	49,459	100.0	1.9	N/A	0	0	0
08/29/23	UW2S02230824-00	1	6,198	55,657	99.9	1.9	DB5-20210408	0	0	0
08/30/23	UW2V6N230728-00	1	2836	58,493	N/A	2.0	RRM-521	0	0	0
08/31/23	UW2S02230829-00	0	5750	64,243	99.9	2.0	N/A	0	0	0
<p style="text-align: center;">Average CBCS Screen Passing Pixels (%) = 99.8  Total Quantity Approved (yd<sup>3</sup>) = 64,243  Total # of Nuclear Density Gauge Tests = 9  Total # of Moisture Tests = 13  Quantity per Moisture Test (yd<sup>3</sup>) = 4,942  Total Average Thickness (ft) = 1.9</p>										



## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shot example from August 2023. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.



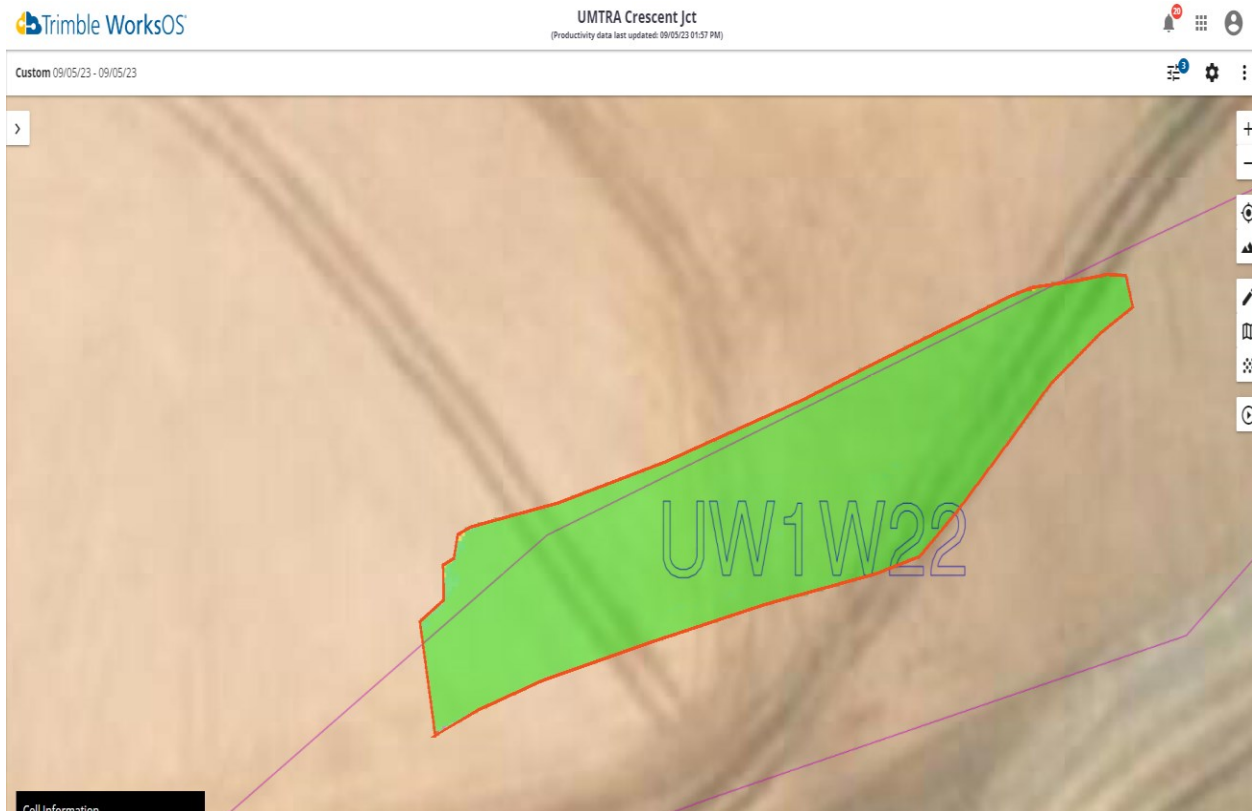
## Appendix A2. RRM Lift Approval Summaries (*continued*)

September 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
09/05/23	UW1W22230831-00	0	1834	1,834	100.0	1.4	N/A	0	0	0
09/05/23	UW1W22230905-00	0	1665	3,499	99.7	1.4	N/A	0	0	0
09/07/23	UW2W2N230728-00	1	2872	6,371	N/A	2.0	RRM 521	0	0	0
09/07/23	UW2S02230905-00	0	5110	11,481	99.6	1.7	N/A	0	0	0
09/07/23	UW2V6N230830-00	0	2476	13,957	100.0	1.8	N/A	0	0	0
09/07/23	UW1Y20230907-00	0	852	14,809	100.0	1.7	N/A	0	0	0
09/07/23	UW2W2N230907-00	0	2526	17,335	99.9	1.8	N/A	0	0	0
09/13/23	UW2R1230911-00	0	5318	22,653	100.0	1.7	N/A	0	0	0
09/13/02	UW2W3230913-00	1	2487	25,140	N/A	2.0	DB5-20210408	0	0	0
09/18/23	UW2R1230913-00	0	5765	30,905	99.9	1.8	N/A	0	0	0
09/19/23	UW2W3230914-00	0	2094	32,999	99.8	1.9	N/A	0	0	0
09/19/23	UW2V7N230918-00	0	2457	35,456	99.9	1.8	N/A	0	0	0
09/20/23	UW2W2N230919-00	0	2735	38,191	99.9	1.9	N/A	0	0	0
09/20/23	UW2W3230919-00	0	2129	40,320	99.8	1.9	N/A	0	0	0
09/25/23	UW2R1230920-00	7	4742	45,062	99.8	1.9	DB5-20210408	6	1	95.5
09/26/23	UW2V7N230925-00	0	2568	47,630	100.0	1.9	N/A	0	0	0
09/27/23	UW2W2N230926-00	0	3068	50,698	99.9	1.9	N/A	0	0	0
09/27/23	UW2W3230927-00	0	2085	52,783	99.7	1.9	N/A	0	0	0
<p style="text-align: center;">Average CBCS Screen Passing Pixels (%) = 99.9  Total Quantity Approved (yd<sup>3</sup>) = 52,783  Total # of Nuclear Density Gauge Tests = 6  Total # of Moisture Tests = 9  Quantity per Moisture Test (yd<sup>3</sup>) = 5,865  Total Average Thickness (ft) = 1.8</p>										



## Appendix A2. RRM Lift Approval Summaries (*continued*)

CBCS screen shot example from September 2023. There are compaction screen shots for each lift approved on record. The number of passing pixels reported refers to the percentage of the lift which has green pixels. A green pixel verifies that the minimum of six-wheel passes with the compactor has been recorded.



## Appendix A2. RRM Lift Approval Package

### LIFT APPROVAL FORM

PROJECT: <u>Moab UMTRA</u>		OTHER: _____	
NW CORNER		DATE: <u>9/20/2023</u>	

P 1 NE Corner			
EW:	216	X	0.440 = 95
NS:	413	X	0.900 = 372
P 2			
EW:	216	X	0.640 = 138
NS:	413	X	0.800 = 330
P 3			
EW:		X	=
NS:		X	=
P 4			
EW:		X	=
NS:		X	=
P 5			
EW:		X	=
NS:		X	=
Page 2 attached: Y N			

IDENTIFY LOTS ABOVE

LIFT ID: <u>UW2R1230920-00</u>	NW CORNER: <u>6795943 N 2125572 E</u>
Uncompacted Thickness: <u>1.9</u>	Compacted Thickness: <u>N/A</u>
Debris Insp. By: <u>N/A</u>	Date: <u>N/A</u> Time: <u>N/A</u>
NW CORNER of debris placement: <u>N/A</u>	EW Dimension: <u>216'</u> NS Dimension: <u>413'</u>
Lift Area (ft²): <u>69,138</u>	Lift Volume (yd³): <u>4,742</u>

Comments: QC visually confirmed that the lift area was scarified and moisture conditioned prior to placement. QC visually observed the material being placed to have proper moisture for compaction. QC verified material compaction using the CBCS. QC conducted visual assessments throughout the shift. This lift was compacted with the 825H. All debris pipe and ducts that are 6" or greater in diameter shall be crushed, or if crushing is impractical, shall be cut in half longitudinally or filled. Debris shall be spread and /or oriented in a manner that results in a minimum of voids and contain no free liquids. QC performed a moisture density test using DB5-20210408 sandy lean clay. MC of 16.8, two holes with 3 testing spots 6", 12" and 18". All 6 passing. One sand cone was performed in P1, PS. Passing.

Attached Forms: Grid Slope ☒ Compaction Macro ☒ Print Screen ☒ Moisture/ Density ☒

KEYING IN NOTES: ☒ N ☒ E ☒ S ☒ W Satisfactory MOISTURE/ DENSITY TESTS ID # (S): P1, P2

LIFT APPROVED BY: Tammy Hooker DATE: 9/25/2023 TIME: 1450

QA/QC APPROVAL: [Signature] DATE: 9/26/2023

Density Testing  
DOE-EM/GJRAC1783  
Rev. 1

QC-F-001  
File index No. 43.8.2  
Page 1 of 2

## Appendix A2. RRM Lift Approval Package (continued)

[illegible]

## Appendix A2. RRM Lift Approval Package (*continued*)

### D

% =8	99.8%
Elevation Avg	4969.0
Total =8	7332
Total Lines	7344

<h1>Pass</h1>	Minimum Number of Machine Passes
	8

Lift ID: UW2R1230920-00

Northing	Easting	Elevation	# of Passes	Passes =8	Count	
6795559	2125597	4963.8	20	1	1	Lift Height
6795559	2125600	4964.3	13	1	1	1' 0"
6795562	2125597	4963.9	16	1	1	Thick Lift Threshold
6795562	2125600	4964.2	14	1	1	
6795562	2125604	4964.0	18	1	1	2' 0"
6795562	2125607	4963.9	10	1	1	Last Lift Elevation
6795565	2125594	4964.0	15	1	1	
6795565	2125597	4964.0	15	1	1	N/A
6795565	2125600	4964.0	13	1	1	
6795565	2125604	4964.1	18	1	1	
6795565	2125607	4964.1	12	1	1	
6795565	2125610	4964.1	15	1	1	
6795565	2125614	4964.0	12	1	1	
6795569	2125594	4964.0	13	1	1	
6795569	2125597	4964.1	15	1	1	
6795569	2125600	4964.0	15	1	1	
6795569	2125604	4964.1	17	1	1	
6795569	2125607	4964.1	12	1	1	
6795569	2125610	4964.2	12	1	1	
6795569	2125614	4964.2	11	1	1	
6795569	2125617	4964.2	15	1	1	
6795572	2125594	4964.1	11	1	1	
6795572	2125597	4964.1	16	1	1	
6795572	2125600	4964.1	17	1	1	
6795572	2125604	4964.2	17	1	1	
6795572	2125607	4964.2	10	1	1	
6795572	2125610	4964.1	12	1	1	
6795572	2125614	4964.1	12	1	1	
6795572	2125617	4964.4	11	1	1	
6795572	2125620	4964.2	15	1	1	
6795572	2125623	4964.1	14	1	1	
6795575	2125594	4964.2	11	1	1	
6795575	2125597	4964.2	14	1	1	
6795575	2125600	4964.1	21	1	1	
6795575	2125604	4964.3	16	1	1	
6795575	2125607	4964.2	10	1	1	
6795575	2125610	4964.1	13	1	1	
6795575	2125614	4964.1	12	1	1	
6795575	2125617	4964.3	12	1	1	
6795575	2125620	4964.4	15	1	1	
6795575	2125623	4964.2	11	1	1	
6795575	2125627	4964.2	13	1	1	
6795575	2125630	4964.1	15	1	1	
6795578	2125594	4964.2	11	1	1	

Page 3 of 7



Page 4 of 4  
# 7  
E.C./S.E/b



## Appendix A2. RRM Lift Approval Package (continued)

### FIELD DENSITY TEST

<b>PROJECT:</b> Moab UMTRA		<b>Standard Count:</b>		<b>Date:</b> 9/25/2023	
<b>Lift ID:</b> UW2R1230920-00		MS= 492 502 498			
<b>Make/Model:</b> Troxler 3430		DS= 2079 2694 2704		<b>Gauge Calibration Date:</b> 2/9/2023	
<b>Task:</b> RRM		<b>Sand-Cone and Plate No.</b> N/A		<b>Sand-Cone Calibration Date:</b> N/A	

Test No.	Depth (inches)	Test Location	Test NUC	Type Sand	MDD (pcf)	OMC (%)	WD (pcf)	DD (pcf)	MC (%)	Compaction (%)	Pass Fail	Soil Type	Proctor ID.	Date of Test
P1	6	See Map on Pg. 1	X		108.5	16.8	121.2	104.6	15.9	96.4	P	CL	DB5-20210408	9/25/2023
	12	See Map on Pg. 1	X		108.5	16.8	120.2	104.2	15.3	96.0	P	CL	DB5-20210408	9/25/2023
	18	See Map on Pg. 1	X		108.5	16.8	119.8	104.5	14.6	96.3	P	CL	DB5-20210408	9/25/2023
P2	6	See Map on Pg. 1	x		108.5	16.8	118.9	103.1	15.3	95.0	P	CL	DB5-20210408	9/25/2023
	12	See Map on Pg. 1	x		108.5	16.8	117.8	102.4	15.0	94.4	P	CL	DB5-20210408	9/25/2023
	18	See Map on Pg. 1	x		108.5	16.8	119.7	102.9	16.3	94.8	P	CL	DB5-20210408	9/25/2023
PS	6	See Map on Pg. 1		x	108.5	16.8	121.2	104.6	14.9	96	P	CL	DB5-20210408	9/25/2023

Legend: \* indicates moisture and density correction for RRM only      \*\* indicates a retest

**Moisture Content: P1@-6"**

A. Container No. A-1

B. Container Mass (g): 214.2

C. Mass of Container & Wet Soil (g) 568.5

D. Mass of Container & Dry Soil (g) 520

E. Moisture Content (%) 15.86

**Moisture Content: P2@-6"**

A. Container No. P-1

B. Container Mass: 289.9

C. Mass of Container & Wet Soil 687.1

D. Mass of Container & Dry Soil 634.5

E. Moisture Content 15.26

ASTM D698

Testing By: Tammy Hooker

Print / Signature

Date: 9/26/2023

QA/QC Rep: R. J. Kathy Turvy

Print / Signature

QC-F-002  
Revision 1

File index No. 43.8.2  
Page 5 of 2

## Appendix A2. RRM Lift Approval Package (*continued*)

Project: Moab UMTRA

Report Date: 9/25/2023

Lift ID: UW2R1230920-00-00  
DB5-20210408

Sample ID: P1-12		Resulting % M.C.
Item #		
1)	Container ID: AA	
2)	Mass of container: 214.8	
3)	Mass of container & wet soil: 549.5	
4)	Mass of container & dry soil: 506.8	
		14.62

Sample ID: *P2-12			Resulting % M.C.
Item #			
1)	Container ID:	Dog	
2)	Mass of container:	287.0	
3)	Mass of container & wet soil:	710.0	
4)	Mass of container & dry soil:	654.8	15.01

Sample ID: *P1-18		Resulting % M.C.
Item #		
1)	Container ID: toy	
2)	Mass of container: 216.5	
3)	Mass of container & wet soil: 530.8	
4)	Mass of container & dry soil: 484	17.50

Sample ID: *P2-18		Resulting % M.C.
Item #		
1)	Container ID: TY	
2)	Mass of container: 289.7	
3)	Mass of container & wet soil: 691.4	
4)	Mass of container & dry soil: 635.0	
		16.33

Sample ID: PS		Resulting % M.C.
Item #		
1)	Container ID: AA	
2)	Mass of container: 214.7	
3)	Mass of container & wet soil: 580.1	
4)	Mass of container & dry soil: 532.6	
		14.9

		Sample ID:		Resulting % M.C.
Item #				
1)	Container ID	N		
2)	Mass of container	A		
3)	Mass of container & wet soil			
4)	Mass of container & dry soil			
				#DIV/0!

$$\% \text{ M.C.} = \frac{\text{Item (3)} - \text{Item (4)}}{\text{Item (4)} - \text{Item (2)}} \times 100$$

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7/26/23

## Appendix A2. RRM Lift Approval Package (continued)

SAND CONE CALCULATIONS				
Sand Cone Mass	Mass( g)	Mass (lb)		
	Before	6690.7	14.8	
After	3612.6	8.0		
		TOTAL SAND USED (lb)		6.8
Soil Collected Mass	Mass (g)	Mass (lb)		
	Mass of Bag	9.1	5.1	
Mass of Wet Soil + Bag	2325.7			
		TOTAL WET SOIL (lb)		5.1
VOLUME OF SOIL REMOVED				
Sand Used	Mass (lbs)			
	6.8			
Sand Used to Fill Cone & Plate	4.3			
(See Calibration on Board)		VOLME OF SOIL REMOVED (cf)		0.03
BULK DENSITY OF SAND(pcf)	96.3			
(See Calibration on Board)				
MOISTURE CONTENT				
Container Mass	214.7			
Container + Wet Soil Mass	580.1			
Container + Dry Soil Mass	532.6	Moisture Content %		14.9
WET DENSITY				
	121.2 (PCF)			
DRY DENSITY				
	104.6 (PCF)			
PERCENT of PROCTOR (PCF)				
Calculated Dry Density	104.6			
Maximum Dry Density	108.5	Percent of Proctor %		96.4

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## Appendix A2. Top of Waste Buyoff Survey

Environmental Management - Grand Junction Office



### Top of Waste Buyoff Form

**Client:** Department of Energy  
**Project:** Moab UMTRA Project  
**Date:** 11-02-2022

In signing this document, the signatory agrees that the Top of Waste is complete and meets both the project specifications and RAIP requirements.

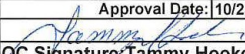

Excavation Area	Lift Area
TOP OF WASTE	UW1O20221020-00

Approver Name/Title	Signature	Sign Date
Mike McCullough/ CJ Operations/Site Mgr.		11/02/2022
Tammy Hooker/ QA/QC Representative		11/02/2022
Robert Anderson/ QA/QC Representative		11/02/2022
Kathy Turvy/ QA/AC Manager		11/02/2022
Comments		

## Appendix A2. Top of Waste Buyoff Survey (continued)

Top of Waste Buyoff Survey						
Area Buyoff ID:			UW1O20221020-00		Date: 10/25/2022	
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Difference in feet	Difference in inches
11705_stk	6795106.960	2124499.984	4984.034	4983.937	0.10	1.2
11741_stk	6795109.969	2124550.047	4983.784	4983.655	0.13	1.6
11777_stk	6795109.995	2124599.999	4983.382	4983.373	0.01	0.1
11814_stk	6795110.043	2124650.020	4983.201	4983.091	0.11	1.3
11926_stk	6795159.983	2124799.977	4983.495	4983.469	0.03	0.4
11889_stk	6795159.993	2124750.032	4983.758	4983.751	0.01	0.1
11852_stk	6795159.990	2124700.004	4984.081	4984.033	0.05	0.6
11815_stk	6795159.938	2124649.995	4984.424	4984.316	0.11	1.3
11669_stk	6795110.020	2124449.963	4984.222	4984.219	0.00	0.0
11632_stk	6795109.991	2124399.966	4984.612	4984.502	0.11	1.3
11594_stk	6795059.966	2124350.033	4983.690	4983.559	0.13	1.6
11631_stk	6795060.030	2124400.009	4983.355	4983.277	0.08	1.0
11668_stk	6795060.054	2124450.017	4983.007	4982.994	0.01	0.1
11704_stk	6795060.050	2124500.030	4982.751	4982.712	0.04	0.5
11557_stk	6795060.032	2124300.014	4983.913	4983.841	0.07	0.8
11520_stk	6795059.993	2124250.036	4984.141	4984.123	0.02	0.2
11483_stk	6795059.975	2124199.959	4984.455	4984.405	0.05	0.6
11372_stk	6794959.995	2124049.960	4982.919	4982.802	0.12	1.4
11408_stk	6794960.018	2124099.994	4982.534	4982.520	0.01	0.1
11444_stk	6794959.979	2124150.014	4982.269	4982.238	0.03	0.4
11481_stk	6794960.010	2124199.983	4981.961	4981.956	0.01	0.1
11518_stk	6794960.020	2124250.039	4981.725	4981.673	0.05	0.6
11555_stk	6794960.002	2124300.033	4981.456	4981.391	0.07	0.8
11592_stk	6794960.033	2124349.991	4981.198	4981.109	0.09	1.1
11593_stk	6795010.025	2124349.979	4982.367	4982.334	0.03	0.4
11630_stk	6795010.028	2124399.965	4982.100	4982.052	0.05	0.6
11556_stk	6795010.024	2124300.047	4982.655	4982.616	0.04	0.5
11519_stk	6795010.011	2124250.030	4982.999	4982.898	0.10	1.2
11482_stk	6795010.024	2124199.958	4983.198	4983.181	0.02	0.2
11445_stk	6795010.023	2124150.019	4983.471	4983.463	0.01	0.1
11409_stk	6795009.997	2124099.976	4983.770	4983.745	0.03	0.4
11371_stk	6794910.009	2124050.019	4981.583	4981.577	0.01	0.1
11407_stk	6794909.994	2124100.046	4981.349	4981.295	0.05	0.6
11443_stk	6794910.038	2124150.011	4981.023	4981.013	0.01	0.1
11480_stk	6794909.981	2124199.966	4980.799	4980.731	0.07	0.8
11517_stk	6794909.999	2124250.046	4980.483	4980.449	0.03	0.4
11479_stk	6794860.017	2124199.996	4979.560	4979.506	0.05	0.6
11442_stk	6794859.961	2124150.012	4979.862	4979.788	0.07	0.8
11406_stk	6794860.009	2124099.979	4980.125	4980.070	0.06	0.7
11370_stk	6794860.026	2124050.030	4980.385	4980.352	0.03	0.4
11478_stk	6794810.009	2124200.019	4978.308	4978.281	0.03	0.4
11441_stk	6794809.988	2124150.005	4978.656	4978.563	0.09	1.1
11405_stk	6794810.031	2124099.980	4978.854	4978.845	0.01	0.1
11369_stk	6794809.982	2124049.979	4979.203	4979.127	0.08	1.0
11368_stk	6794759.947	2124050.009	4977.910	4977.902	0.01	0.1
11404_stk	6794760.011	2124099.998	4977.673	4977.620	0.05	0.6
11440_stk	6794759.977	2124149.974	4977.397	4977.338	0.06	0.7
11439_stk	6794710.017	2124149.972	4976.249	4976.113	0.14	1.7
11403_stk	6794709.989	2124099.994	4976.406	4976.395	0.01	0.1
11367_stk	6794710.004	2124049.991	4976.737	4976.677	0.06	0.7
11366_stk	6794660.011	2124049.966	4975.509	4975.453	0.06	0.7
11402_stk	6794659.970	2124099.956	4975.184	4975.170	0.01	0.1
11438_stk	6794659.989	2124149.993	4974.946	4974.888	0.06	0.7
11437_stk	6794609.986	2124149.965	4973.719	4973.663	0.06	0.7
11401_stk	6794610.037	2124100.001	4974.028	4973.945	0.08	1.0
11365_stk	6794609.997	2124050.018	4974.315	4974.228	0.09	1.1
11364_stk	6794559.980	2124049.970	4973.091	4973.003	0.09	1.1
11400_stk	6794560.027	2124099.978	4972.755	4972.721	0.03	0.4
11436_stk	6794560.004	2124149.986	4972.507	4972.438	0.07	0.8
11435_stk	6794509.997	2124150.030	4971.286	4971.213	0.07	0.8
11399_stk	6794509.989	2124099.994	4971.573	4971.496	0.08	1.0

## Appendix A2. Top of Waste Buyoff Survey (continued)

11363_stk	6794510.034	2124050.012	4971.853	4971.778	0.07	0.8
11362_stk	6794460.002	2124049.967	4970.681	4970.553	0.13	1.6
11398_stk	6794459.984	2124100.001	4970.303	4970.271	0.03	0.4
11434_stk	6794459.997	2124149.971	4970.071	4969.988	0.08	1.0
11433_stk	6794409.964	2124149.983	4968.845	4968.763	0.08	1.0
11470_stk	6794410.039	2124200.035	4968.496	4968.481	0.02	0.2
11397_stk	6794410.002	2124099.971	4969.109	4969.045	0.06	0.7
11361_stk	6794410.013	2124050.047	4969.359	4969.328	0.03	0.4
11396_stk	6794360.030	2124099.970	4967.905	4967.820	0.09	1.1
11432_stk	6794360.002	2124150.021	4967.579	4967.537	0.04	0.5
11469_stk	6794359.952	2124199.998	4967.258	4967.255	0.00	0.0
Comments:	QC performed a visual inspection of the final surface with satisfactory results. All observations of grade tolerance indicated the grade was within the specification requirement of Design grade +0.17 FT (no minus tolerance allowed).					
Approval Date: 10/25/2022			Total Square Feet: 166,273			
QC Signature: Tammy Hooker / 			Reviewed By: Robert Anderson / 			



## Appendix A2. Top of Waste Buyoff Survey (continued)



## Appendix A2. Top of Waste Buyoff Survey (continued)

### Top of Waste Buyoff Form





**Client:** Department of Energy  
**Project:** Moab UMTRA Project  
**Date:** 11-17-2022

In signing this document, the signatory agrees that the Top of Waste is complete and meets both the project specifications and RAIP requirements.

Excavation Area	Lift Area
TOP OF WASTE	UW2L6N221114-00

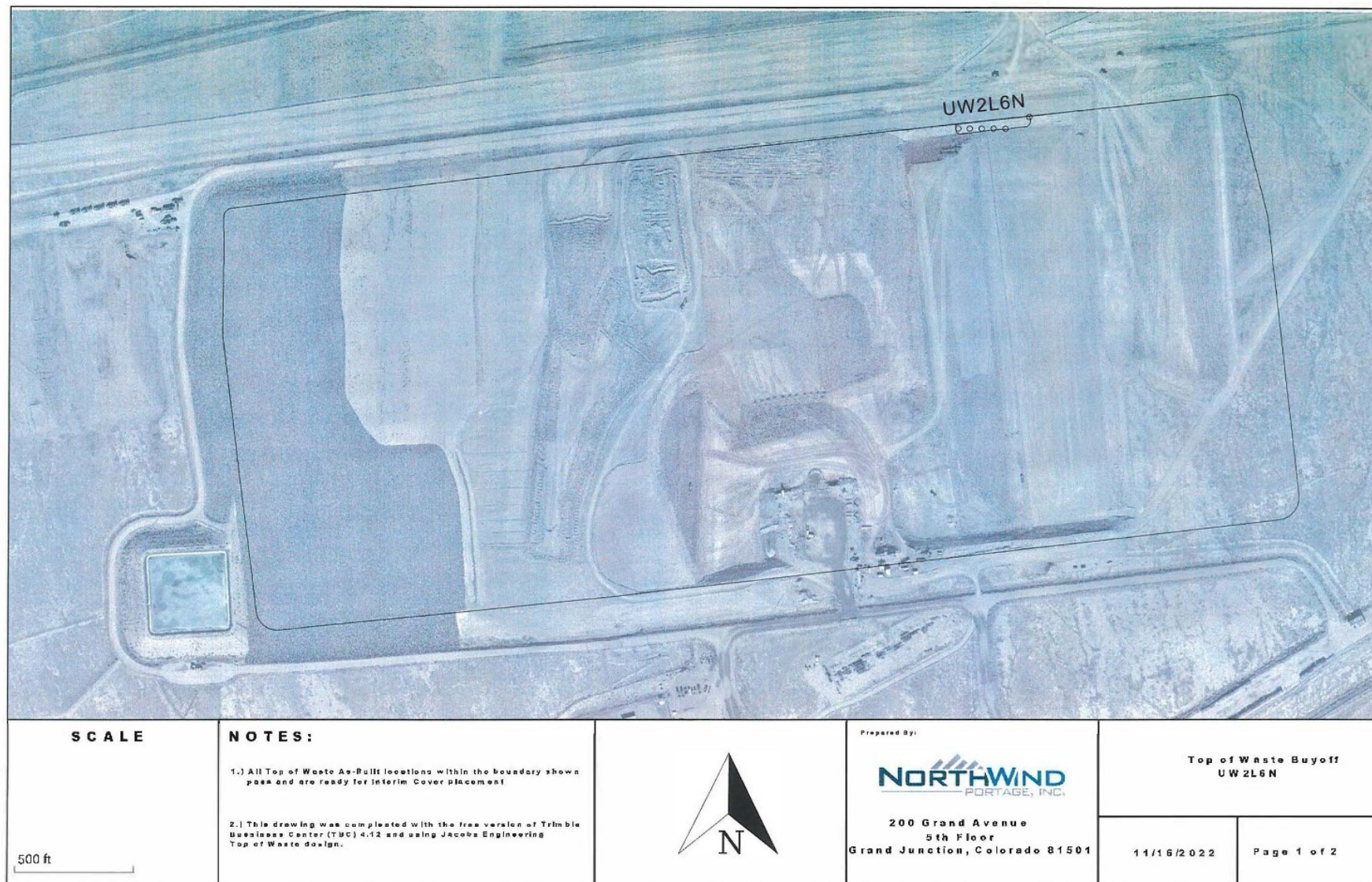
Approver Name/Title	Signature	Sign Date
Mike McCullough/ CJ Operations/Site Mgr.		11-17-22
Tammy Hooker/ QA/QC Representative		11/17/2022
Robert Anderson/ QA/QC Representative		11/17/2022
Kathy Turvy/ QA/QC Manager		11/17/2022
Comments		

## Appendix A2. Top of Waste Buyoff Survey (continued)

Top of Waste Buyoff Survey						
Area Buyoff ID:			UW2L6N221114-00		Date:	11/16/2022
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Difference in feet	Difference in inches
12240_stk	6796260.001	2125200.001	4985.551	4985.466	0.09	1.1
12277_stk	6796259.977	2125249.978	4985.465	4985.435	0.03	0.4
12314_stk	6796259.984	2125299.955	4985.425	4985.405	0.02	0.2
12350_stk	6796260.008	2125349.945	4985.426	4985.375	0.05	0.6
12386_stk	6796260.010	2125399.995	4985.379	4985.345	0.03	0.4
12459_stk	6796309.984	2125499.995	4984.285	4984.272	0.01	0.1
Comments:	QC performed a visual inspection of the final surface with satisfactory results. All observations of grade tolerance indicated the grade was within the specification requirement of Design grade +0.17 FT (no minus tolerance allowed).					
Approval Date: 11/16/2022			Total Square Feet: 13,638			
QC Signature: Tammy Hooker  Reviewed By: Robert Anderson 						



## Appendix A2. Top of Waste Buyoff Survey (continued)





## Appendix A2. Top of Waste Buyoff Survey (continued)

Environmental Management - Grand Junction Office



### Top of Waste Buyoff Form

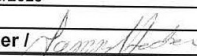
**Client:** Department of Energy  
**Project:** Moab UMTRA Project  
**Date:** 02/13/2023

In signing this document, the signatory agrees that the Top of Waste is complete and meets both the project specifications and RAIP requirements.

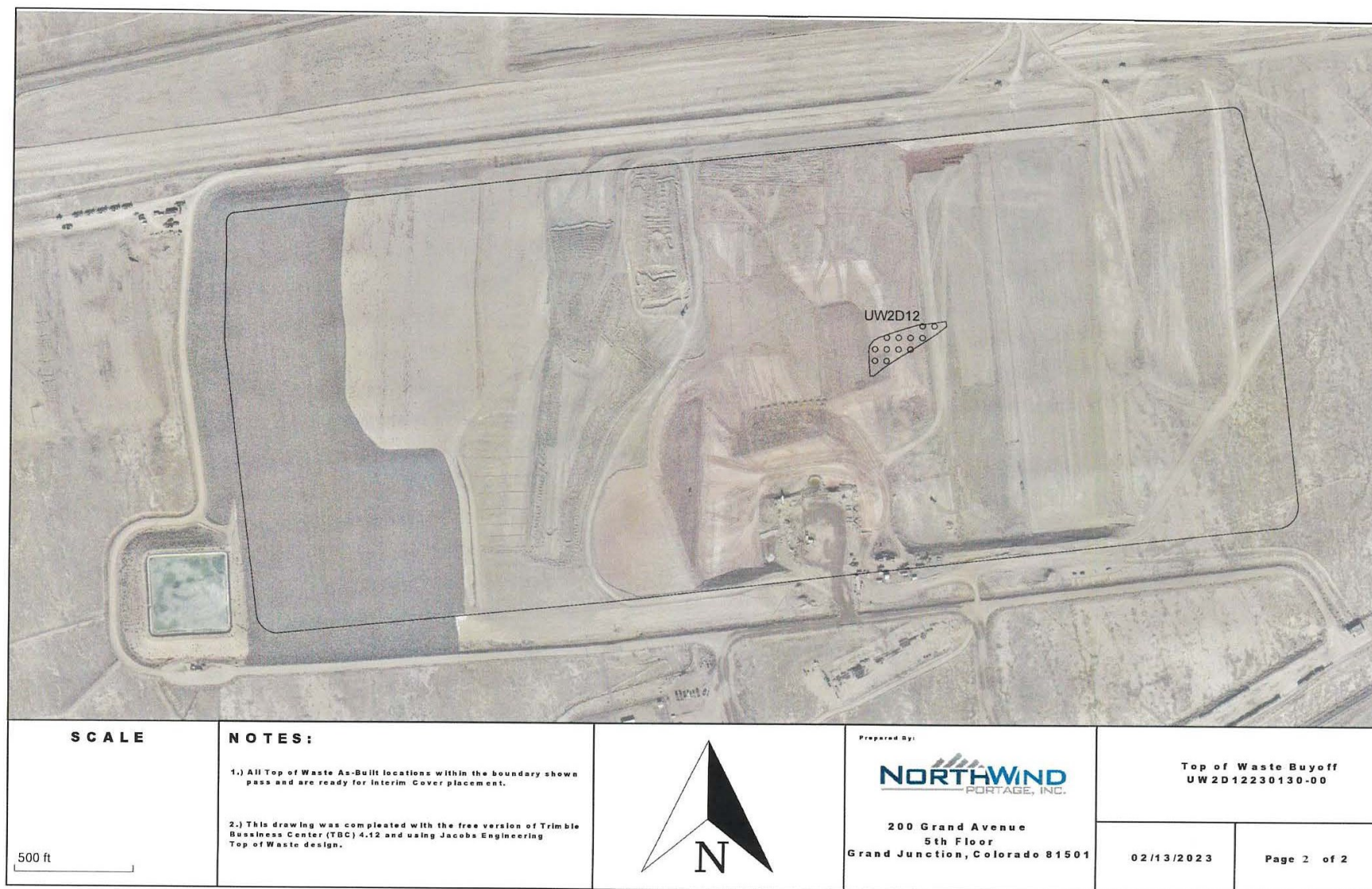
Excavation Area	Lift Area
TOP OF WASTE	UW2D12230130-00

Approver Name/Title	Signature	Sign Date
Don Janz/ CJ Operations/Site Mgr.		2/13/23
Tammy Hooker/ QA/QC Representative		2/13/2023
Robert Anderson/ QA/QC Representative		2/13/2023
Kathy Turvy/ QA/AC Manager		2/14/2023
Comments		

## Appendix A2. Top of Waste Buyoff Survey (continued)

Top of Waste Buyoff Survey						
Area Buyoff ID:			UW2D12230130-00		Date: 1/30/2023	
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Difference in feet	Difference in inches
12150 stk	6795460.012	2125100.011	4989.204	4989.126	0.08	1.0
12113 stk	6795460.008	2125050.006	4989.475	4989.409	0.07	0.8
12076 stk	6795410.025	2124999.992	4988.520	4988.465	0.06	0.7
12040 stk	6795410.011	2124950.000	4988.811	4988.747	0.06	0.7
12004 stk	6795410.004	2124900.008	4989.081	4989.029	0.05	0.6
11967 stk	6795359.992	2124849.977	4988.100	4988.087	0.01	0.1
11966 stk	6795309.995	2124850.017	4986.915	4986.862	0.05	0.6
12002 stk	6795309.951	2124899.977	4986.641	4986.579	0.06	0.7
12003 stk	6795360.028	2124899.981	4987.836	4987.804	0.03	0.4
12039 stk	6795360.024	2124950.006	4987.523	4987.522	0.00	0.0
12075 stk	6795360.025	2124999.985	4987.277	4987.240	0.04	0.5
12112 stk	6795410.014	2125050.014	4988.232	4988.183	0.05	0.6
Comments:	QC performed a visual inspection of the final surface with satisfactory results. All observations of grade tolerance indicated the grade was within the specification requirement of Design grade +0.17 FT (no minus tolerance allowed).					
Approval Date: 1/30/2023			Total Square Feet: 32,100			
QC Signature: Tammy Hooker / 			Reviewed By: Robert Anderson /			

## Appendix A2. Top of Waste Buyoff Survey (*continued*)



**Appendix A3.**  
**Interim Cover**

**Standard Proctor Test Results Summary**  
**Lift Approval Summaries**  
**Lift Approval Package**  
**Buyoff Surveys**

### Appendix A3. Interim Cover Standard Proctor Test Results Summary

2023

Proctor ID	Date sampled	Date Approved	Max Dry Density	Optimum Moisture	Proctor Description
Interim Cover #3 2021	2/4/2021	2/16/2021	120.4 & 126.3	11.8 & 10.0	Clay, silty, sandy with shale pieces (CL)
Interim Cover #5 2021	2/4/2021	2/16/2021	121.9 & 126.6	11.3 & 126.6*	Clay, silty, sandy with shale pieces (CL)

*\*Oversized (Rock) Correction*

## Appendix A3. Interim Cover Lift Approval Summaries

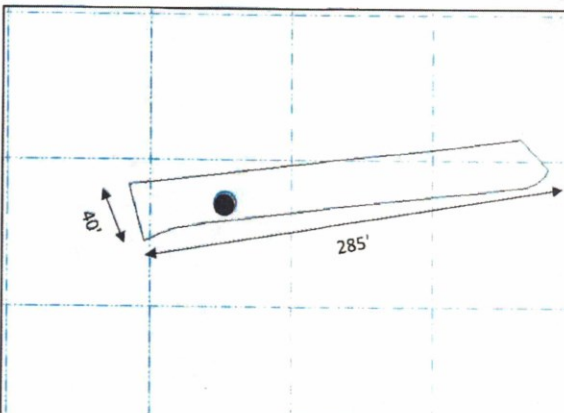
November 2022 Interim Cover										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd³)	Cumulative Quantity Approved (yd³)	CAES Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
11/07/22	UI2D5N221005-00	6	13313	13313	N/A	1.0	IC2021#5	6	0	95.8
11/17/22	UI1O20221103-00	3	5526	18839	N/A	1.0	IC2021#5	3	0	93.5
11/21/22	UI2L6N221117-00	1	340	19179	N/A	1.0	IC2021#3	1	0	90.2
Average CBCS Screen Passing Pixels (%) = 0.0										
Total Quantity Approved (yd³) = 19,179										
Total # of Nuclear Density Gauge Tests = 10										
Total # of Moisture Tests = 10										
Quantity per Moisture Test (yd³) = N/A										
Total Average Thickness (ft) = 1.0										



## Appendix A3. Interim Cover Lift Approval Package

### LIFT APPROVAL FORM

PROJECT: <u>Moab UMTRA</u>		OTHER: _____	
NW CORNER		DATE: <u>11/17/2022</u>	



P 1	From SW Corner
EW: 285	X 0.300 = 86
NS: 40	X 0.340 = 14
P 2	
EW: _____	X _____ = _____
NS: _____	X _____ = _____
P 3	
EW: _____	X <u>N</u> = _____
NS: _____	X _____ = _____
P 4	
EW: _____	X _____ = _____
NS: _____	X _____ = _____
P 5	
EW: _____	X _____ = _____
NS: _____	X _____ = _____
Page 2 attached: Y N	

IDENTIFY LOTS ABOVE

LIFT ID: <u>UI2L6N221117-00</u>	NW CORNER: <u>6796284 N 2125187 E</u>
Uncompacted Thickness: <u>1.0</u>	Compacted Thickness: <u>N/A</u>
NW CORNER of debris placement: _____	Debris Insp. By: <u>N/A</u>
Lift Area (ft²): <u>9,224</u>	Lift Volume (yd³): <u>340</u>

Comments: This lift was completed of interim cover clean material. The material was moisture conditioned on the lift area prior to compaction. QC did not identify any soil particle size greater than 2" as required by the current specifications for interim cover material. This lift area met the minimum requirements for compaction and was compacted with a fully loaded water truck.

---

Attached Forms: Grid Slope X    Compaction Macro N/A    Print Screen N/A    Moisture/ Density X

KEYING IN NOTES: N E S W N/A    MOISTURE/ DENSITY TESTS ID # (S): P1

LIFT APPROVED BY: Robert Anderson / *[Signature]*    DATE: 11/30/2022    TIME: 1245

*[Signature]* / 11-30-22  
 QA/QC APPROVAL    DATE

Density Testing  
 DOE-EM/GJRAC1783  
 Rev. 1

QC-F-001  
 File index No. 43.8.2  
 Page 1 of 2

### Appendix A3. Interim Cover Lift Approval Package (continued)

[illegible]

## Appendix A3. Interim Cover Lift Approval Package (continued)

### FIELD DENSITY TEST

<b>PROJECT:</b> <u>Moab UMTRA</u>			<b>Standard Count:</b>			<b>Date:</b> <u>11/21/2022</u>		
<b>Lift ID:</b> <u>UI2L6N221117-00</u>			<b>MS=</b> 499					
<b>Make/Model:</b> <u>Troxler 3430</u>			<b>DS=</b> 2091			<b>Gauge Calibration Date:</b> <u>12/2/2021</u>		
<b>Task RRM</b>			<b>Sand-Cone and Plate No.</b> <u>N/A</u>			<b>Sand-Cone Calibration Date:</b> <u>N/A</u>		

Test No.	Depth (inches)	Test Location	Test NUC	Type Sand	MDD (pcf)	OMC (%)	WD (pcf)	DD (pcf)	MC (%)	Compaction (%)	Pass Fail	Soil Type	Proctor ID.	Date of Test
p1	6	See Map on Pg. 1	X		126.3	10	122.8	114.0	7.8	90.2	P	CL	IC2021#3	11/21/2022
										#DIV/0!				
										#DIV/0!				

Legend: \* indicates moisture and density correction for rock correction density or \*\* indicates a retest

**Moisture Content:**

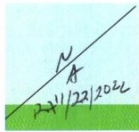
A. Container No.

B. Container Mass (g):

C. Mass of Container & Wet Soil (g)

D. Mass of Container & Dry Soil (g)

E. Moisture Content (%)



**Moisture Content:**


A. Container No.

B. Container Mass:


C. Mass of Container & Wet Soil

D. Mass of Container & Dry Soil


E. Moisture Content



**ASTM D698**

Testing By: Tammy Hooker  Date: 11/21/2022

Print / Signature

QA/QC Rep: R. Anderson 

Print / Signature

## Appendix A3. Interim Cover Buyoff Surveys

Environmental Management - Grand Junction Office



### INTERIM COVER Buyoff Form

**Client:** Department of Energy  
**Project:** Moab UMTRA Project  
**Date:** 11/08/2022

In signing this document, the signatory agrees that the interim cover is complete and meets both the project specifications and RAIP requirements.

Excavation Area	Lift Area
	UI2D5N221005-00

Approver Name/Title	Signature	Sign Date
Mike McCullough/ CJ Operations/Site Mgr.		11-08-2022
Robert Anderson/ QA/QC Representative		11/8/2022
Kathy Turvy/ QA/QC Manager		11/8/2022
Tammy Hooker / QA/QC Representative		11/8/2022
Comments		



## Appendix A3. Interim Cover Buyoff Surveys (*continued*)

Area Buyoff ID:			UI2D5N20221005-00		Date: 11/7/2022	
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Difference in feet	Difference in inches
21978_stk	6795910.012	2124850.010	4993.880	4993.762	0.12	1.4
21979_stk	6795959.990	2124850.037	4992.850	4992.752	0.10	1.2
21980_stk	6796010.038	2124849.956	4991.797	4991.739	0.06	0.7
21981_stk	6796060.026	2124849.998	4990.814	4990.727	0.09	1.0
21977_stk	6795859.982	2124850.012	4994.835	4994.773	0.06	0.7
21940_stk	6795859.978	2124800.039	4994.841	4994.803	0.04	0.5
21976_stk	6795810.043	2124850.013	4995.906	4995.781	0.13	1.5
21975_stk	6795759.969	2124850.008	4996.846	4996.789	0.06	0.7
21974_stk	6795710.010	2124850.010	4997.789	4997.666	0.12	1.5
21973_stk	6795660.027	2124849.986	4996.551	4996.441	0.11	1.3
21972_stk	6795609.972	2124850.020	4995.308	4995.215	0.09	1.1
21971_stk	6795560.012	2124849.995	4994.058	4993.989	0.07	0.8
21970_stk	6795509.966	2124850.013	4992.821	4992.763	0.06	0.7
21935_stk	6795610.033	2124800.000	4995.610	4995.497	0.11	1.4
21936_stk	6795660.014	2124800.021	4996.773	4996.723	0.05	0.6
21937_stk	6795709.983	2124800.020	4997.938	4997.829	0.11	1.3
21938_stk	6795759.993	2124799.974	4996.931	4996.819	0.11	1.3
21939_stk	6795810.043	2124800.007	4995.925	4995.812	0.11	1.4
22010_stk	6795710.041	2124900.040	4997.520	4997.384	0.14	1.6
22009_stk	6795660.014	2124899.998	4996.321	4996.159	0.16	1.9
22008_stk	6795610.024	2124899.987	4995.081	4994.933	0.15	1.8
22007_stk	6795560.012	2124899.969	4993.801	4993.707	0.09	1.1
22006_stk	6795509.990	2124899.967	4992.587	4992.481	0.11	1.3
22011_stk	6795760.007	2124900.013	4996.906	4996.758	0.15	1.8
22012_stk	6795809.988	2124899.982	4995.853	4995.750	0.10	1.2
22013_stk	6795860.054	2124899.997	4994.778	4994.742	0.04	0.4
22014_stk	6795910.039	2124899.985	4993.797	4993.731	0.07	0.8
22015_stk	6795960.001	2124899.993	4992.812	4992.721	0.09	1.1
22016_stk	6796010.044	2124899.977	4991.791	4991.709	0.08	1.0
22017_stk	6796060.019	2124900.044	4990.808	4990.697	0.11	1.3
22018_stk	6796109.997	2124900.038	4989.753	4989.685	0.07	0.8
22019_stk	6796160.022	2124899.984	4988.682	4988.672	0.01	0.1
22020_stk	6796210.047	2124900.036	4987.769	4987.660	0.11	1.3
22051_stk	6795960.002	2124949.989	4992.780	4992.690	0.09	1.1
22052_stk	6796010.027	2124950.004	4991.753	4991.678	0.07	0.9
22053_stk	6796060.014	2124950.029	4990.748	4990.667	0.08	1.0
22054_stk	6796110.017	2124950.020	4989.745	4989.654	0.09	1.1
22055_stk	6796160.053	2124950.002	4988.707	4988.642	0.07	0.8
22056_stk	6796210.015	2124950.005	4987.779	4987.629	0.15	1.8
22092_stk	6796210.047	2125000.021	4987.736	4987.599	0.14	1.6
22091_stk	6796160.006	2124999.972	4988.704	4988.612	0.09	1.1
22090_stk	6796110.027	2124999.946	4989.757	4989.624	0.13	1.6
22089_stk	6796060.026	2124999.986	4990.766	4990.636	0.13	1.6
22088_stk	6796010.046	2124999.970	4991.755	4991.648	0.11	1.3
22087_stk	6795960.002	2124999.999	4992.786	4992.659	0.13	1.5
22086_stk	6795910.011	2125000.005	4993.794	4993.670	0.12	1.5
22050_stk	6795909.980	2124949.982	4993.793	4993.700	0.09	1.1
22049_stk	6795859.966	2124950.017	4994.781	4994.711	0.07	0.8
22085_stk	6795859.947	2125000.011	4994.822	4994.680	0.14	1.7
22084_stk	6795809.998	2124999.990	4995.827	4995.688	0.14	1.7
22048_stk	6795810.016	2124949.987	4995.843	4995.719	0.12	1.5
22047_stk	6795759.958	2124950.030	4996.789	4996.727	0.06	0.7
22046_stk	6795710.014	2124950.012	4997.177	4997.102	0.07	0.9
22045_stk	6795659.961	2124950.017	4995.990	4995.877	0.11	1.4
22044_stk	6795609.958	2124950.001	4994.657	4994.651	0.01	0.1
22043_stk	6795560.002	2124949.974	4993.528	4993.425	0.10	1.2
22042_stk	6795509.949	2124949.983	4992.318	4992.199	0.12	1.4
22083_stk	6795759.969	2124999.991	4996.801	4996.696	0.11	1.3
22119_stk	6795759.983	2125050.032	4996.770	4996.665	0.11	1.3
22118_stk	6795709.963	2125050.033	4996.610	4996.538	0.07	0.9
22082_stk	6795710.037	2125000.018	4996.862	4996.820	0.04	0.5
22081_stk	6795660.018	2125000.029	4995.732	4995.595	0.14	1.6
22080_stk	6795610.041	2125000.036	4994.459	4994.369	0.09	1.1
22079_stk	6795559.969	2125000.036	4993.253	4993.143	0.11	1.3
22078_stk	6795510.045	2125000.027	4992.050	4991.917	0.13	1.6
22120_stk	6795809.983	2125050.038	4995.710	4995.655	0.06	0.7
22121_stk	6795860.030	2125050.022	4994.768	4994.646	0.12	1.5





### Appendix A3. Interim Cover Buyoff Surveys (continued)

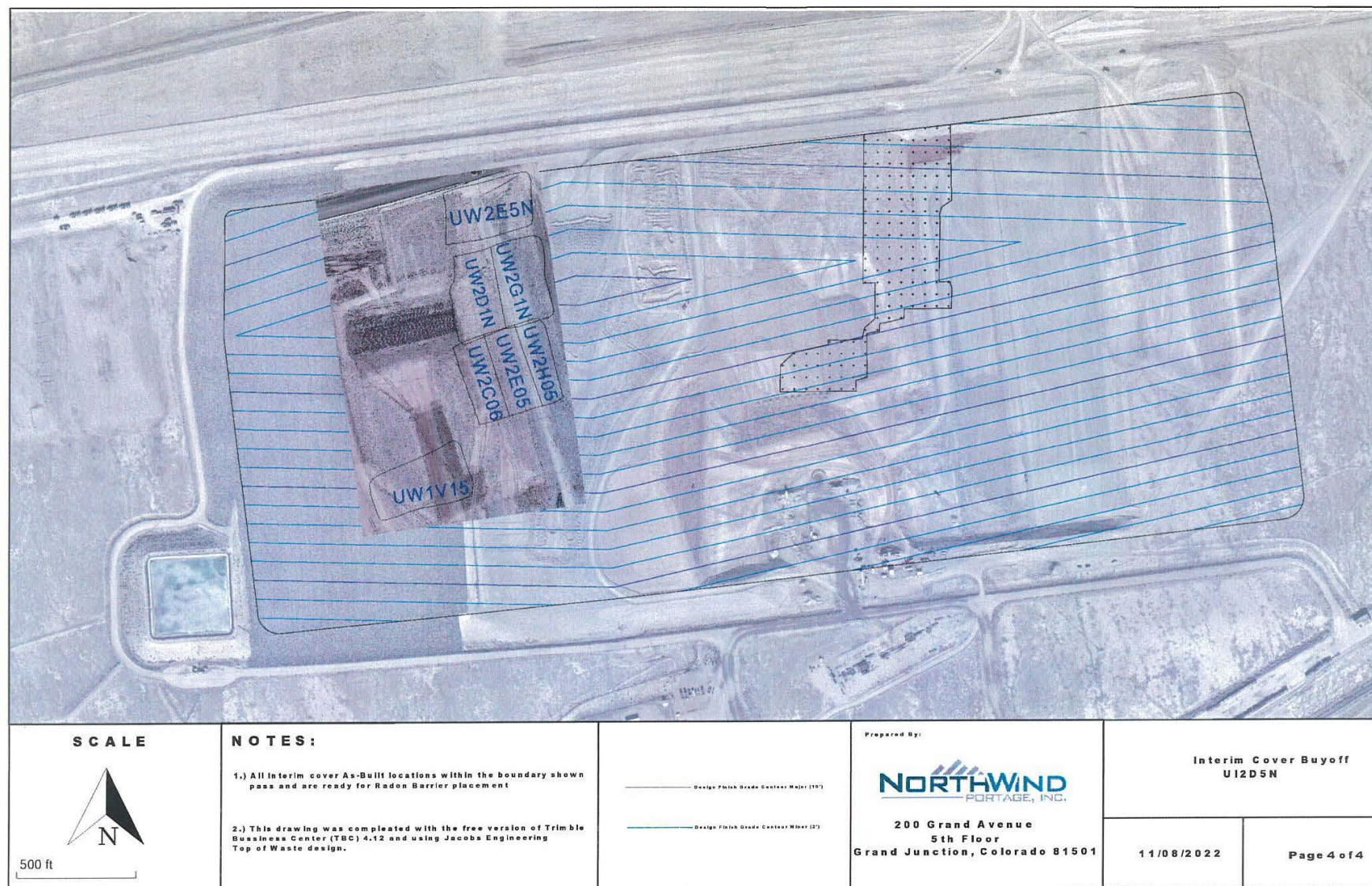
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22123 stk	6795959.995	2125050.023	4992.762	4992.628	0.13	1.6
22124 stk	6796009.979	2125050.022	4991.703	4991.618	0.09	1.0
22125 stk	6796060.008	2125049.967	4990.700	4990.606	0.09	1.1
22126 stk	6796109.993	2125050.000	4989.645	4989.594	0.05	0.6
22127 stk	6796160.018	2125049.994	4988.703	4988.581	0.12	1.5
22128 stk	6796209.995	2125050.001	4987.696	4987.569	0.13	1.5
22129 stk	6796260.044	2125050.007	4986.642	4986.556	0.09	1.0
22166 stk	6796259.999	2125100.029	4986.637	4986.526	0.11	1.3
22156 stk	6795760.012	2125099.991	4996.712	4996.634	0.08	0.9
22157 stk	6795810.009	2125100.009	4995.633	4995.624	0.01	0.1
22158 stk	6795860.044	2125099.980	4994.734	4994.615	0.12	1.4
22159 stk	6795910.029	2125100.011	4993.729	4993.607	0.12	1.5
22160 stk	6795960.015	2125100.026	4992.709	4992.597	0.11	1.3
22161 stk	6796009.966	2125100.031	4991.689	4991.587	0.10	1.2
22162 stk	6796059.962	2125100.009	4990.680	4990.576	0.10	1.2
22163 stk	6796110.009	2125099.995	4989.587	4989.564	0.02	0.3
22164 stk	6796160.048	2125099.993	4988.561	4988.551	0.01	0.1
22165 stk	6796209.993	2125099.993	4987.592	4987.539	0.05	0.6
22203 stk	6796260.023	2125150.021	4986.543	4986.496	0.05	0.6
22202 stk	6796210.020	2125149.965	4987.630	4987.508	0.12	1.5
22201 stk	6796160.016	2125150.053	4988.649	4988.521	0.13	1.5
22200 stk	6796110.002	2125149.987	4989.670	4989.533	0.14	1.6
22199 stk	6796059.960	2125150.000	4990.687	4990.545	0.14	1.7
22198 stk	6796009.991	2125150.027	4991.606	4991.556	0.05	0.6
22155 stk	6795709.998	2125099.995	4996.350	4996.256	0.09	1.1
22154 stk	6795659.959	2125100.027	4995.175	4995.031	0.14	1.7
22153 stk	6795609.976	2125099.963	4993.932	4993.805	0.13	1.5
22152 stk	6795560.048	2125100.009	4992.690	4992.579	0.11	1.3
22151 stk	6795509.982	2125099.973	4991.377	4991.353	0.02	0.3
22115 stk	6795560.013	2125050.021	4992.883	4992.861	0.02	0.3
22116 stk	6795610.013	2125049.980	4994.209	4994.087	0.12	1.5
22117 stk	6795660.017	2125050.003	4995.372	4995.313	0.06	0.7
22197 stk	6795960.036	2125150.000	4992.581	4992.567	0.01	0.2
22114 stk	6795509.975	2125050.032	4991.764	4991.635	0.13	1.5
22188 stk	6795509.987	2125149.978	4991.178	4991.070	0.11	1.3
21969 stk	6795459.964	2124850.008	4991.605	4991.537	0.07	0.8
22005 stk	6795460.004	2124899.947	4991.365	4991.255	0.11	1.3
22041 stk	6795459.954	2124950.033	4991.055	4990.973	0.08	1.0
21968 stk	6795410.017	2124849.989	4990.450	4990.311	0.14	1.7
21930 stk	6795360.035	2124800.002	4989.456	4989.369	0.09	1.0
21856 stk	6795360.046	2124700.026	4990.035	4989.933	0.10	1.2
21893 stk	6795360.017	2124749.960	4989.777	4989.651	0.13	1.5
21941 stk	6795910.030	2124800.010	4993.851	4993.793	0.06	0.7
21943 stk	6796009.969	2124800.044	4991.917	4991.770	0.15	1.8
21942 stk	6795960.003	2124800.045	4992.867	4992.782	0.09	1.0
21982 stk	6796109.975	2124849.981	4989.870	4989.715	0.15	1.9
22189 stk	6795560.006	2125150.043	4992.359	4992.297	0.06	0.7
22190 stk	6795609.942	2125149.977	4993.613	4993.523	0.09	1.1
21944 stk	6796060.002	2124799.970	4990.799	4990.757	0.04	0.5
21945 stk	6796110.043	2124800.027	4989.830	4989.745	0.09	1.0
21946 stk	6796159.982	2124800.011	4988.781	4988.733	0.05	0.6
21947 stk	6796210.043	2124800.040	4987.768	4987.720	0.05	0.6
21983 stk	6796160.041	2124849.980	4988.831	4988.702	0.13	1.5
21984 stk	6796210.029	2124849.992	4987.720	4987.690	0.03	0.4
21929 stk	6795309.998	2124800.048	4988.232	4988.144	0.09	1.1
21928 stk	6795259.981	2124799.974	4987.061	4986.919	0.14	1.7
21927 stk	6795209.944	2124799.985	4985.831	4985.694	0.14	1.6
21891 stk	6795260.018	2124749.985	4987.298	4987.201	0.10	1.2
21892 stk	6795309.970	2124749.991	4988.548	4988.426	0.12	1.5
21855 stk	6795310.005	2124699.968	4988.793	4988.708	0.09	1.0
21854 stk	6795260.007	2124699.976	4987.629	4987.483	0.15	1.8
21853 stk	6795209.990	2124700.015	4986.324	4986.258	0.07	0.8
21890 stk	6795209.991	2124750.039	4986.068	4985.976	0.09	1.1
21818 stk	6795309.960	2124650.022	4989.062	4988.990	0.07	0.9
21817 stk	6795260.006	2124650.025	4987.844	4987.765	0.08	0.9
21816 stk	6795209.992	2124649.979	4986.674	4986.541	0.13	1.6
21779 stk	6795209.987	2124599.975	4986.911	4986.823	0.09	1.1
21780 stk	6795259.999	2124599.986	4988.183	4988.048	0.14	1.6
21781 stk	6795309.993	2124600.026	4989.358	4989.273	0.09	1.0



### Appendix A3. Interim Cover Buyoff Surveys (continued)

21745_stk	6795310.006	2124550.018	4989.665	4989.555	0.11	1.3
21744_stk	6795259.930	2124549.996	4988.472	4988.330	0.14	1.7
21743_stk	6795209.973	2124549.972	4987.205	4987.105	0.10	1.2
21707_stk	6795210.014	2124499.989	4987.458	4987.387	0.07	0.9
21708_stk	6795259.977	2124500.002	4988.659	4988.612	0.05	0.6
21709_stk	6795310.020	2124499.999	4989.929	4989.837	0.09	1.1
21672_stk	6795260.008	2124449.995	4988.919	4988.894	0.02	0.3
21671_stk	6795210.037	2124449.997	4987.761	4987.669	0.09	1.1
21670_stk	6795159.989	2124450.043	4986.467	4986.444	0.02	0.3
21706_stk	6795160.017	2124499.978	4986.271	4986.162	0.11	1.3
21742_stk	6795159.971	2124550.033	4985.917	4985.880	0.04	0.4
21778_stk	6795159.973	2124600.009	4985.701	4985.598	0.10	1.2
21815_stk	6795160.039	2124649.999	4985.408	4985.316	0.09	1.1
21852_stk	6795159.982	2124699.983	4985.153	4985.033	0.12	1.4
21889_stk	6795160.033	2124750.021	4984.840	4984.751	0.09	1.1
21931_stk	6795410.011	2124799.984	4990.692	4990.594	0.10	1.2
21819_stk	6795359.977	2124650.013	4990.348	4990.215	0.13	1.6
Comments: QC performed a visual inspection of the final surface with satisfactory results. All observations of grade tolerance indicated the grade was within the specification requirement of Design grade +0.17 FT (no minus tolerance allowed).						
Approval Date: 11/7/2022			Total Square Feet: 359,446			
QC Signature: Tammy Hooker  Reviewed By: Robert Anderson/ 						

## Appendix A3. Interim Cover Buyoff Surveys (*continued*)





## Appendix A3. Interim Cover Buyoff Surveys (continued)



### Interim Cover Buyoff Form

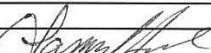
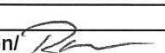
**Client:** Department of Energy  
**Project:** Moab UMTRA Project  
**Date:** 11-17-2022

In signing this document, the signatory agrees that the Interim Cover is complete and meets both the project specifications and RAIP requirements.

Excavation Area	Lift Area
Interim Cover	UI1O20221103-00

Approver Name/Title	Signature	Sign Date
Mike McCullough/ CJ Operations/Site Mgr.		11-17-22
Tammy Hooker/ QA/QC Representative		11/17/2022
Robert Anderson/ QA/QC Representative		11/17/2022
Kathy Turvy/ QA/QC Manager		11/17/2022
Comments		

### Appendix A3. Interim Cover Buyoff Surveys (continued)

Area Buyoff ID:			UI1020221103-00		Date: 11/17/2022	
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Difference in feet	Difference in inches
21632 stk	6795110.013	2124400.026	4985.643	4985.502	0.14	1.7
21631 stk	6795060.012	2124400.000	4984.413	4984.277	0.14	1.6
21556 stk	6795010.030	2124299.999	4983.768	4983.616	0.15	1.8
21594 stk	6795059.946	2124349.973	4984.729	4984.559	0.17	2.0
21443 stk	6794910.049	2124150.001	4982.063	4982.013	0.05	0.6
21480 stk	6794910.019	2124199.934	4981.898	4981.731	0.17	2.0
21557 stk	6795059.956	2124299.995	4984.990	4984.841	0.15	1.8
21520 stk	6795059.970	2124250.028	4985.276	4985.123	0.15	1.8
21483 stk	6795060.031	2124199.998	4985.479	4985.405	0.07	0.9
21519 stk	6795010.033	2124250.028	4984.061	4983.898	0.16	2.0
21444 stk	6794959.980	2124150.011	4983.375	4983.238	0.14	1.6
21445 stk	6795010.001	2124150.054	4984.581	4984.463	0.12	1.4
21482 stk	6795009.992	2124199.988	4984.321	4984.181	0.14	1.7
21481 stk	6794959.934	2124200.006	4983.123	4982.956	0.17	2.0
21518 stk	6794960.056	2124249.970	4982.841	4982.673	0.17	2.0
21407 stk	6794909.986	2124100.030	4982.455	4982.295	0.16	1.9
21408 stk	6794959.989	2124100.010	4983.671	4983.520	0.15	1.8
21406 stk	6794859.947	2124099.986	4981.230	4981.070	0.16	1.9
21442 stk	6794860.016	2124149.947	4980.913	4980.788	0.13	1.5
21479 stk	6794860.014	2124200.022	4980.567	4980.506	0.06	0.7
21405 stk	6794810.020	2124099.979	4979.993	4979.845	0.15	1.8
21441 stk	6794810.002	2124149.974	4979.707	4979.563	0.14	1.7
21404 stk	6794759.971	2124100.017	4978.784	4978.620	0.16	2.0
21367 stk	6794709.959	2124049.959	4977.813	4977.677	0.14	1.6
21368 stk	6794759.975	2124050.015	4979.044	4978.902	0.14	1.7
21369 stk	6794809.990	2124050.035	4980.284	4980.127	0.16	1.9
21370 stk	6794860.017	2124049.966	4981.476	4981.352	0.12	1.5
21371 stk	6794910.005	2124050.020	4982.651	4982.577	0.07	0.9
21372 stk	6794960.015	2124049.948	4983.878	4983.802	0.08	0.9
21409 stk	6795009.998	2124100.009	4984.844	4984.745	0.10	1.2
21366 stk	6794660.014	2124050.000	4976.480	4976.453	0.03	0.3
21402 stk	6794659.978	2124100.017	4976.261	4976.170	0.09	1.1
21403 stk	6794710.020	2124100.023	4977.556	4977.395	0.16	1.9
21439 stk	6794710.016	2124149.971	4977.206	4977.113	0.09	1.1
21440 stk	6794759.968	2124149.968	4978.478	4978.338	0.14	1.7
21401 stk	6794610.023	2124099.973	4975.100	4974.945	0.16	1.9
21365 stk	6794609.957	2124050.019	4975.380	4975.228	0.15	1.8
21400 stk	6794559.966	2124099.991	4973.871	4973.721	0.15	1.8
21399 stk	6794509.996	2124099.984	4972.657	4972.496	0.16	1.9
21363 stk	6794510.030	2124049.975	4972.842	4972.778	0.06	0.8
21364 stk	6794560.030	2124050.028	4974.119	4974.003	0.12	1.4
21398 stk	6794459.966	2124100.025	4971.393	4971.271	0.12	1.5
21397 stk	6794410.019	2124100.013	4970.068	4970.045	0.02	0.3
21362 stk	6794460.003	2124049.950	4971.632	4971.553	0.08	0.9
21361 stk	6794410.006	2124049.980	4970.363	4970.328	0.03	0.4
21360 stk	6794360.045	2124050.007	4969.138	4969.102	0.04	0.4
21396 stk	6794360.040	2124099.995	4968.834	4968.820	0.01	0.2
21433 stk	6794410.002	2124149.967	4969.802	4969.763	0.04	0.5
21669 stk	6795110.027	2124450.019	4985.386	4985.219	0.17	2.0
21705 stk	6795109.986	2124499.994	4985.104	4984.937	0.17	2.0
21741 stk	6795109.961	2124550.016	4984.824	4984.655	0.17	2.0
21777 stk	6795110.003	2124600.042	4984.527	4984.373	0.15	1.8
21434 stk	6794460.006	2124150.036	4971.000	4970.988	0.01	0.1
21435 stk	6794510.027	2124150.013	4972.233	4972.213	0.02	0.2
21432 stk	6794359.960	2124150.034	4968.548	4968.537	0.01	0.1
Comments:	QC performed a visual inspection of the final surface with satisfactory results. All observations of grade tolerance indicated the grade was within the specification requirement of Design grade +0.17 FT (no minus tolerance allowed).					
Approval Date: 11/17/2022			Total Square Feet: 142,507			
QC Signature: Tammy Hooker  Reviewed By: Robert Anderson 						



## Appendix A3. Interim Cover Buyoff Surveys (*continued*)



## Appendix A3. Interim Cover Buyoff Surveys (continued)



### Interim Cover Buyoff Form

**Client:** Department of Energy  
**Project:** Moab UMTRA Project  
**Date:** 11-21-2022

In signing this document, the signatory agrees that the Interim Cover is complete and meets both the project specifications and RAIP requirements.

Excavation Area	Lift Area
	UI2L6N221117-00

Approver Name/Title	Signature	Sign Date
Mike McCullough/ CJ Operations/Site Mgr.		11-22-2022
Tammy Hooker/ QA/QC Representative		11/22/2022
Robert Anderson/ QA/QC Representative		11/22/2022
Kathy Turvy/ QA/AC Manager		11/22/2022
Comments		



### Appendix A3. Interim Cover Buyoff Surveys (*continued*)

Area Buyoff ID:			UI26LN221117-00-00		Date:	11/21/2022
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Difference in feet	Difference in inches
22240_stk	6796260.011	2125200.034	4986.504	4986.466	0.04	0.5
22277_stk	6796259.982	2125250.015	4986.502	4986.435	0.07	0.8
Comments:	QC performed a visual inspection of the final surface with satisfactory results. All observations of grade tolerance indicated the grade was within the specification requirement of Design grade +0.17 FT (no minus tolerance allowed).					
Approval Date: 11/21/2022			Total Square Feet: 9,224			
QC Signature: Tammy Hooker			Reviewed By: Robert Anderson/			

## Appendix A3. Interim Cover Buyoff Surveys (*continued*)



## Appendix A3. Interim Cover Buyoff Surveys (*continued*)

### Interim Cover Buyoff Form



**Client:** Department of Energy  
**Project:** Moab UMTRA Project  
**Date:** 04-24-2023

In signing this document, the signatory agrees that the Interim Cover is complete and meets both the project specifications and RAIP requirements.

	Lift Area's
Data Gap Areas	UIU19, UIW31, UIO13, UIQ14 and UI1J2N Pre 2021

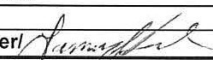
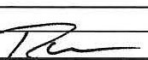
Approver Name/Title	Signature	Sign Date
Don Janz/ CJ Operations/Site Mgr.		4/24/23
Tammy Hooker/ QA/QC Representative		4/24/23
Robert Anderson/ QA/QC Representative		4/24/2023
Kathy Turvy/ QA/AC Manager		4/25/2023
Comments		



## Appendix A3. Interim Cover Buyoff Surveys (*continued*)

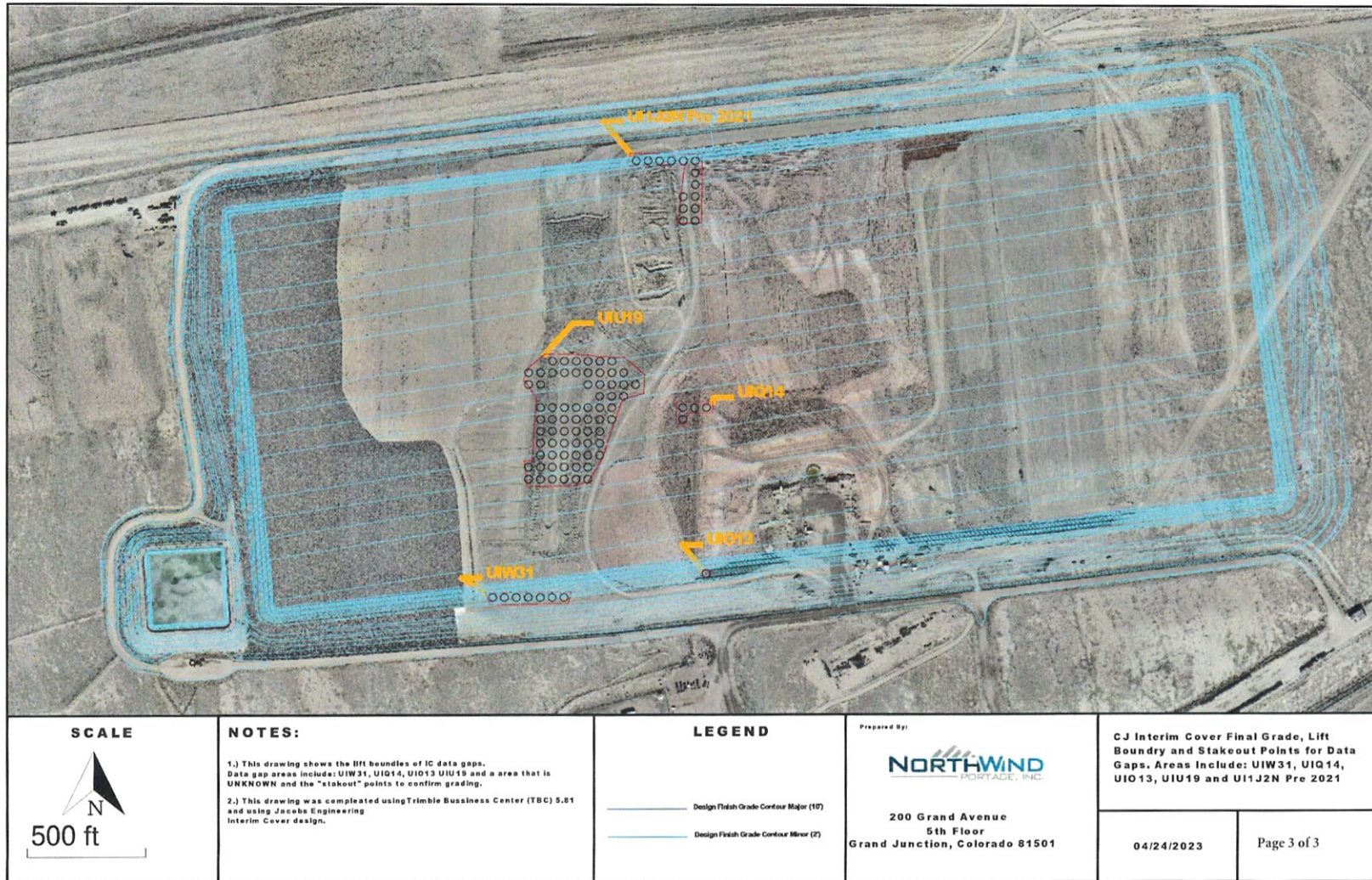
Data Gap Buyoff ID's:			UIW31, UIO13, UIQ14, UIU19 & UI1J2N Pre 2021		Date: 4/20/2023	
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Difference in feet	Difference in inches
20975_stk	6795259.993	2123500.004	4993.545	4993.471	0.07	0.9
21012_stk	6795260.053	2123549.986	4993.591	4993.499	0.09	1.1
20974_stk	6795209.984	2123500.019	4992.266	4992.207	0.06	0.7
20937_stk	6795210.018	2123449.932	4992.204	4992.179	0.02	0.3
20936_stk	6795160.039	2123449.944	4990.969	4990.915	0.05	0.6
20934_stk	6795059.995	2123449.998	4988.474	4988.388	0.09	1.0
20933_stk	6795010.013	2123450.032	4987.177	4987.124	0.05	0.6
20932_stk	6794960.064	2123450.006	4985.942	4985.860	0.08	1.0
20931_stk	6794910.043	2123450.063	4984.669	4984.596	0.07	0.9
20930_stk	6794860.014	2123449.980	4983.358	4983.333	0.03	0.3
20929_stk	6794810.031	2123450.025	4982.098	4982.069	0.03	0.3
20892_stk	6794809.989	2123400.043	4982.130	4982.040	0.09	1.1
20967_stk	6794859.994	2123499.972	4983.453	4983.361	0.09	1.1
20968_stk	6794909.972	2123499.943	4984.627	4984.625	0.00	0.0
20969_stk	6794960.045	2123500.020	4985.931	4985.888	0.04	0.5
20970_stk	6795010.042	2123499.968	4987.248	4987.152	0.10	1.2
20971_stk	6795059.999	2123500.076	4988.506	4988.416	0.09	1.1
21011_stk	6795209.955	2123550.009	4992.236	4992.235	0.00	0.0
21048_stk	6795260.024	2123599.976	4993.603	4993.528	0.07	0.9
21047_stk	6795210.033	2123599.942	4992.304	4992.264	0.04	0.5
21083_stk	6795210.028	2123650.022	4992.258	4992.184	0.07	0.9
21084_stk	6795259.943	2123650.021	4993.502	4993.409	0.09	1.1
21120_stk	6795259.982	2123700.050	4993.184	4993.127	0.06	0.7
21082_stk	6795160.006	2123649.979	4990.980	4990.959	0.02	0.3
21080_stk	6795059.979	2123650.048	4988.529	4988.501	0.03	0.3
21044_stk	6795060.064	2123600.024	4988.530	4988.472	0.06	0.7
21008_stk	6795060.015	2123550.025	4988.538	4988.444	0.09	1.1
21007_stk	6795009.940	2123549.999	4987.254	4987.180	0.07	0.9
21043_stk	6795010.018	2123599.953	4987.231	4987.209	0.02	0.3
21079_stk	6795010.070	2123649.982	4987.269	4987.237	0.03	0.4
21078_stk	6794959.963	2123650.009	4986.018	4985.973	0.05	0.5
21042_stk	6794960.006	2123599.977	4986.039	4985.945	0.09	1.1
21041_stk	6794909.955	2123600.017	4984.687	4984.681	0.01	0.1
21040_stk	6794860.017	2123600.005	4983.501	4983.417	0.08	1.0
20966_stk	6794809.969	2123500.015	4982.129	4982.097	0.03	0.4
21004_stk	6794860.054	2123550.044	4983.444	4983.389	0.06	0.7
21005_stk	6794910.048	2123549.971	4984.704	4984.653	0.05	0.6
21006_stk	6794960.002	2123550.029	4985.920	4985.917	0.00	0.0
21003_stk	6794810.021	2123550.003	4982.178	4982.125	0.05	0.6
21077_stk	6794909.997	2123650.002	4984.739	4984.709	0.03	0.4
21116_stk	6795060.005	2123700.046	4988.261	4988.227	0.03	0.4
21117_stk	6795109.961	2123699.953	4989.524	4989.452	0.07	0.9
21154_stk	6795109.969	2123749.986	4989.201	4989.170	0.03	0.4
21155_stk	6795159.978	2123749.979	4990.444	4990.395	0.05	0.6
21118_stk	6795160.030	2123700.024	4990.732	4990.677	0.06	0.7
21119_stk	6795210.030	2123700.004	4991.943	4991.902	0.04	0.5
21156_stk	6795209.996	2123749.942	4991.715	4991.620	0.10	1.1
21157_stk	6795259.969	2123749.996	4992.863	4992.845	0.02	0.2
21193_stk	6795210.029	2123800.021	4991.349	4991.338	0.01	0.1
21192_stk	6795160.031	2123800.047	4990.179	4990.113	0.07	0.8
21374_stk	6795059.958	2124050.057	4986.345	4986.252	0.09	1.1
21373_stk	6795010.034	2124049.988	4985.092	4985.027	0.06	0.8
21410_stk	6795059.948	2124100.035	4986.034	4985.970	0.06	0.8
21446_stk	6795060.068	2124150.001	4985.723	4985.688	0.03	0.4
21432_stk	6794359.960	2124150.034	4968.548	4968.537	0.01	0.1
21392_stk	6795960.018	2124050.013	4993.403	4993.236	0.17	2.0
21428_stk	6795959.976	2124099.999	4993.217	4993.206	0.01	0.1
21429_stk	6796009.954	2124100.029	4992.268	4992.194	0.07	0.9
21430_stk	6796059.961	2124099.964	4991.210	4991.181	0.03	0.3
21431_stk	6796110.014	2124100.029	4990.234	4990.169	0.07	0.8
21395_stk	6796109.947	2124049.994	4990.213	4990.199	0.01	0.2
21359_stk	6796110.014	2123999.950	4990.289	4990.229	0.06	0.7
21322_stk	6796110.023	2123949.962	4990.268	4990.259	0.01	0.1

### Appendix A3. Interim Cover Buyoff Surveys (*continued*)

21285_stk	6796110.041	2123900.052	4990.377	4990.290	0.09	1.0
21248_stk	6796110.026	2123849.971	4990.386	4990.320	0.07	0.8
21391_stk	6795910.024	2124050.034	4994.372	4994.249	0.12	1.5
21427_stk	6795910.036	2124099.978	4994.247	4994.218	0.03	0.3
21426_stk	6795860.020	2124100.037	4995.268	4995.231	0.04	0.4
21390_stk	6795859.996	2124050.012	4995.336	4995.261	0.07	0.9
20899_stk	6795160.031	2123400.000	4990.938	4990.887	0.05	0.6
20900_stk	6795210.006	2123400.021	4992.226	4992.151	0.07	0.9
Comments:	QC performed a visual inspection of the final surface with satisfactory results. All observations of grade tolerance indicated the grade was within the specification requirement of Design grade +0.17 FT (no minus tolerance allowed).					
Approval Date: 4/24/2023			Total Square Feet: 198,151			
QC Signature: Tammy Hooker/ 			Reviewed By: Robert Anderson/ 			



## Appendix A3. Interim Cover Buyoff Surveys (*continued*)



**Appendix A4.  
Radon Barrier**

**Standard Proctor Test Results Summary  
Lift Approval Summaries  
Lift Approval Package  
Buyoff Surveys**

## Appendix A4. Radon Barrier Standard Proctor Test Results Summary

Proctor ID	Date sampled	Date Approved	Max Dry Density	Optimum Moisture	Proctor Description	Liquid Limit	Plastic Limit	Plasticity Index	Classification
Radon Barrier #3 (2023)	1/16/2023	1/23/2023	120.1/123.0	12.5%/11.5%	Weathered shale	32.2%	16.7%	15.5	CL
Radon Barrier #4 (2023)	1/16/2023	1/23/2023	122.0/125.7	12.5%/11.3	Weathered shale	34.3%	17.2%	17.1	CL
Radon Barrier #5 (2023)	1/26/2023	2/1/2023	119.3	12.2%	Weathered shale	35.70%	17.4%	18.3%	CL
Radon Barrier #6 (2023)	1/26/2023	2/1/2023	116.8/119.5	13.0%/12.1%	Weathered shale	34.7%	16.9%	17.8%	CL
Radon Barrier #7 (2023)	1/31/2023	2/15/2023	119.1/121.0	12.8%/12.0%	Weathered shale	34.3%	16.8%	17.5%	CL
Radon Barrier #8 (2023)	2/6/2023	2/13/2023	120.0/127.3	12.6%/10.3%	Weathered shale	33.8%	16.9%	16.9%	CL
Radon Barrier #9 (2023)	2/6/2023	2/13/2023	120.5/129.5	12.1%/9.4%	Weathered shale	34.4%	17.2%	17.2%	CL
Radon Barrier #10 (2023)	2/8/2023	2/13/2023	121.8/130.0	11.8%/9.0%	Weathered shale	34.5%	17.7%	16.8%	CL
Radon Barrier #11 (2023)	2/9/2023	2/15/2023	121.0/126.1	12.0%/10.0%	Weathered shale	34.2%	16.9%	17.3%	CL
Radon Barrier #12 (2023)	2/16/2023	2/20/2023	120.0/123.5	12.2%/11.1%	Weathered shale	35.0%	17.4%	17.6%	CL
Radon Barrier #13 (2023)	2/16/2023	3/1/2023	118.7/122.6	12.6%/11.6%	Weathered shale	30.9%	14.1%	16.8%	CL
Radon Barrier #14 (2023)	2/21/2023	3/1/2023	117.6/120.0	13.5%/12.7%	Weathered shale	32.8%	16.0%	16.8%	CL
Radon Barrier #15 (2023)	2/22/2023	3/1/2023	118.5/121.8	13.0%/11.9%	Weathered shale	33.2%	16.7%	16.5%	CL
Radon Barrier #16 (2023)	3/2/2023	3/8/2023	119.3/121.0	12.1%/11.6%	Weathered shale	34.2%	17.0%	17.2%	CL
Radon Barrier #17 (2023)	3/2/2023	3/16/2023	120.5/122.6	12.0%/11.5%	Weathered shale	34.9%	16.9%	18.0%	CL
Radon Barrier #18 (2023)	3/2/2023	3/16/2023	122.0/128.1	12.8%/10.7%	Weathered shale	33.4%	16.2%	17.2%	CL
Radon Barrier #19 (2023)	3/2/2023	3/16/2023	120.4/124.7	12.7%/11.3%	Weathered shale	35.3%	17.1%	18.2%	CL
Radon Barrier #21 (2023)	3/2/2023	3/8/2023	120.5	12.5%	Severly weathered shale	30.7%	15.8%	14.9%	CL
Radon Barrier #23 (2023)	3/2/2023	3/16/2023	120.3/123.2	11.6%/10.7%	Weathered shale	32.8%	16.8%	16.0%	CL
Radon Barrier #25 (2023)	3/2/2023	3/16/2023	119.5	12.6%	Severly weathered shale	30.4%	15.4%	15.0%	CL
Radon Barrier #26 (2023)	3/30/2023	4/25/2023	121.1	12.3%	Severly weathered shale	30.1%	14.8%	15.3%	CL
Radon Barrier #29 (2023)	3/30/2023	4/25/2023	118.9	13.0%	Severly weathered shale	34.9%	18.2%	16.7%	CL

## Appendix A4. Radon Barrier Standard Proctor Test Results Summary (continued)

Proctor ID	Date sampled	Date Approved	Max Dry Density	Optimum Moisture	Proctor Description	Liquid Limit	Plastic Limit	Plasticity Index	Classification
Radon Barrier #30 (2023)	4/6/2023	4/25/2023	121.6	12.1%	Severly weathered shale	32.1%	18.0%	14.1%	CL
Radon Barrier #31 (2023)	4/6/2023	4/25/2023	119.9	12.0%	Severly weathered shale	31.2%	16.9%	14.3%	CL
Radon Barrier #32 (2023)	4/6/2023	4/25/2023	119.6/122.2	12.7%/11.8%	Weathered shale	34.0%	18.7%	15.3%	CL
Radon Barrier #33 (2023)	4/13/2023	4/25/2023	119.1	13.0%	Weathered shale	32.5%	16.9%	15.6%	CL
Radon Barrier #34 (2023)	4/13/2023	4/25/2023	118.4	13.0%	Weathered shale	30.9%	16.0%	14.9%	CL
Radon Barrier #35 (2023)	4/17/2023	4/25/2023	120.3	12.5%	Weathered shale	29.9%	15.1%	14.8%	CL
Radon Barrier #38 (2023)	4/19/2023	4/25/2023	120.2	12.3%	Weathered shale	33.8	17.7	16.1	CL
Radon Barrier #39 (2023)	4/20/2023	5/10/2023	119.5	12.8%	Severly weathered shale	31.0	16.6	14.4	CL
Radon Barrier #40 (2023)	4/27/2023	5/10/2023	120.4/122.2	12.4%/11.7%	Weathered Shale	33.0	16.7	16.3	CL
Radon Barrier #41 (2023)	4/27/2023	5/10/2023	118.8	12.6%	Severly weathered shale	36.3	17.0	19.3	CL
Radon Barrier RBS#1 (2023)	5/1/2023	5/10/2023	121.2/124.3	12.6%/11.5%	Weathered Shale	36.7	19.0	17.7	CL
Radon Barrier RBS#2 (2023)	5/1/2023	5/10/2023	120.9/123.0	12.8%/12.0%	Weathered Shale	37.5	19.3	18.2	CL



## Appendix A4. Radon Barrier Lift Approval Summary

March 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
03/08/23	UR1N4N230131-00	22	43,469	43,469	N/A	0.9	Radon Barrier# 1,2,35,6,8,9 & 10	22	N/A	97.5
03/15/23	UR1N4N230208-00	28	43,469	86,938	N/A	0.9	Radon Barrier# 2,3,4,5,6,8,9,10 & 12	28	N/A	97.5
<p style="text-align: center;"> Average CBCS Screen Passing Pixels (%) = N/A  Total Quantity Approved (yd<sup>3</sup>) = 86,938  Total # of Nuclear Density Gauge Tests = 50  Total # of Moisture Tests = 50  Quantity per Moisture Test (yd<sup>3</sup>) = 1,739  Total Average Thickness (ft) = 0.9 </p>										

## Appendix A4. Radon Barrier Lift Approval Summary (*continued*)

April 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
04/10/23	UR1N4N230216-00	26	48299	48,299	N/A	1.0	Radon Barrier 2023 #3, #5, #7, #10, #11, #12, #14, #17, #18 and #19	24	2	98
<p style="text-align: center;"> Average CBCS Screen Passing Pixels (%) = N/A  Total Quantity Approved (yd<sup>3</sup>) = 48,299  Total # of Nuclear Density Gauge Tests = 24  Total # of Moisture Tests = 26  Quantity per Moisture Test (yd<sup>3</sup>) = 1,858  Total Average Thickness (ft) = 1.0 </p>										

## Appendix A4. Radon Barrier Lift Approval Summary (*continued*)

May 2023 Radon Barrier										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd³)	Cumulative Quantity Approved (yd³)	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
05/03/23	UR1E3N230214-00	24	48299	48,299	N/A	1.0	2023 #3,4,5,9,10,11,16&33	23	1	96.6
05/10/23	UR1E3N230202-00	33	48299	96,598	N/A	1.0	Radon Barrier #3, 4, 5, 6, 7, 8, 9, 10, 11, 17, 19 & 23	31	2	97.2
05/11/23	UR1E3N230306-00	28	48299	144,897	N/A	1.0	Radon Barrier #3, 4, 5, 7, 8, 9, 10, 11, 14, 23 & 33	26	2	96.8
05/15/23	UR1N4N230329-00	28	48299	193,196	N/A	1.0	023 # 5,10,11, 12,	26	2	97.1
05/15/23	UR1E3N230314-00	27	48299	241,495	N/A	1.0	023 # 3,4,5,6,10,1	27	0	96.5
Average CBCS Screen Passing Pixels (%) = N/A										
Total Quantity Approved (yd³) = 0										
Total # of Nuclear Density Gauge Tests = 133										
Total # of Moisture Tests = 140										
Quantity per Moisture Test (yd³) = 0										
Total Average Thickness (ft) = 1.0										

# Appendix A4. Radon Barrier Lift Approval Package

## LIFT APPROVAL FORM

PROJECT: <u>Moab UMTRA</u>		OTHER: _____	
NW CORNER		DATE: <u>2/16/2023</u>	

See attached for lift map

P 1			
EW:	<input checked="" type="checkbox"/>	=	
NS:	<input checked="" type="checkbox"/>	=	
P 2			
EW:	<input checked="" type="checkbox"/>	=	
NS:	<input checked="" type="checkbox"/>	=	
P 3			
EW:	<input checked="" type="checkbox"/>	=	
NS:	<input checked="" type="checkbox"/>	=	
P 4			
EW:	<input checked="" type="checkbox"/>	=	
NS:	<input checked="" type="checkbox"/>	=	
P 5			
EW:	<input checked="" type="checkbox"/>	=	
NS:	<input checked="" type="checkbox"/>	=	
Page 2 attached: Y N			

IDENTIFY LOTS ABOVE

LIFT ID: <u>UR1N4N230216-00</u>	NW CORNER: <u>6796182 N 2124086 E</u>
Uncompacted Thickness: <u>1.0</u>	Compacted Thickness: <u>N/A</u>
Debris Insp. By: <u>N/A</u> Date: <u>N/A</u> Time: <u>N/A</u>	
NW CORNER of debris placement: <u>N/A</u>	EW Dimension: <u>N/A</u> NS Dimension: <u>N/A</u>
Lift Area (ft²): <u>1,304,075</u>	Lift Volume (yd³): <u>46,985</u>

**Comments:** This is the 3rd lift for this area of Radon Barrier. Prior to placing this lift AMES scarified this area by tracking across it with a CAT D10 Bulldozer. The Area was moisture conditioned prior to material placement. Material being placed is Shale of the Mancos formation that was taken from this years cell excavation and the Mancos Shale stockpile. The Mancos Shale was moisture conditioned using water wagon(s) and precipitation from rain and snow. The shale was broken down by moisture conditioning and heavy equipment traffic. A CAT 815 sheeps foot roller was primarily used to further break down the shale to a maximum particle size of less than 4-inches. Compaction was achieved by adequate moisture control (± 3% of laboratory optimum moisture content), the use of the sheeps foot compactor and heavy equipment traffic. Compaction was checked by using a Troxler moisture density gauge. Areas beneath the Troxler unit were dug by hand to see if a rock corrected Proctor should be used and to verify that any rock was smaller than 4-inches. Rock correction was determined by weighing the excavated material and hand sieving it across the 3/4- inch screen. If more than 5% by weight was retained then the proper rock correction was used to determine the corrected moisture / density values. Lift thickness was controlled using (see next page.)

Attached Forms: Grid Slope ☒ Compaction Macro ☒ Print Screen ☒ Moisture/ Density ☒

KEYING IN NOTES: N E S W N/A MOISTURE/ DENSITY TESTS ID # (S): P1 thru P26

LIFT APPROVED BY: Larry Oviatt DATE: 3/27/2023 TIME: 1700

Robert Anderson DATE: 4/11/2023

QA/QC APPROVAL

Density Testing  
DOE-EM/GJRAC1783  
Rev. 1

QC-F-001  
File index No. 43.8.2  
Page 1 of 16



## Appendix A4. Radon Barrier Lift Approval Package (*continued*)

### CONTINUATION SHEET

#### EXPLANATIONS:

Trimble GCS 900 / Earthworks machine controled CAT 14M grader and a CAT D6 dozer. The finished grade of the Radon Barrier model was offset verticilly 3 feet to establish the top of the lift area. Five check shots were manually taken to ensure the lift thickness is appropriate. Manual checkins between QC's rover and AMES GPS machine guided equipment are conducted to insure the GPS guidance remains accurate.

N

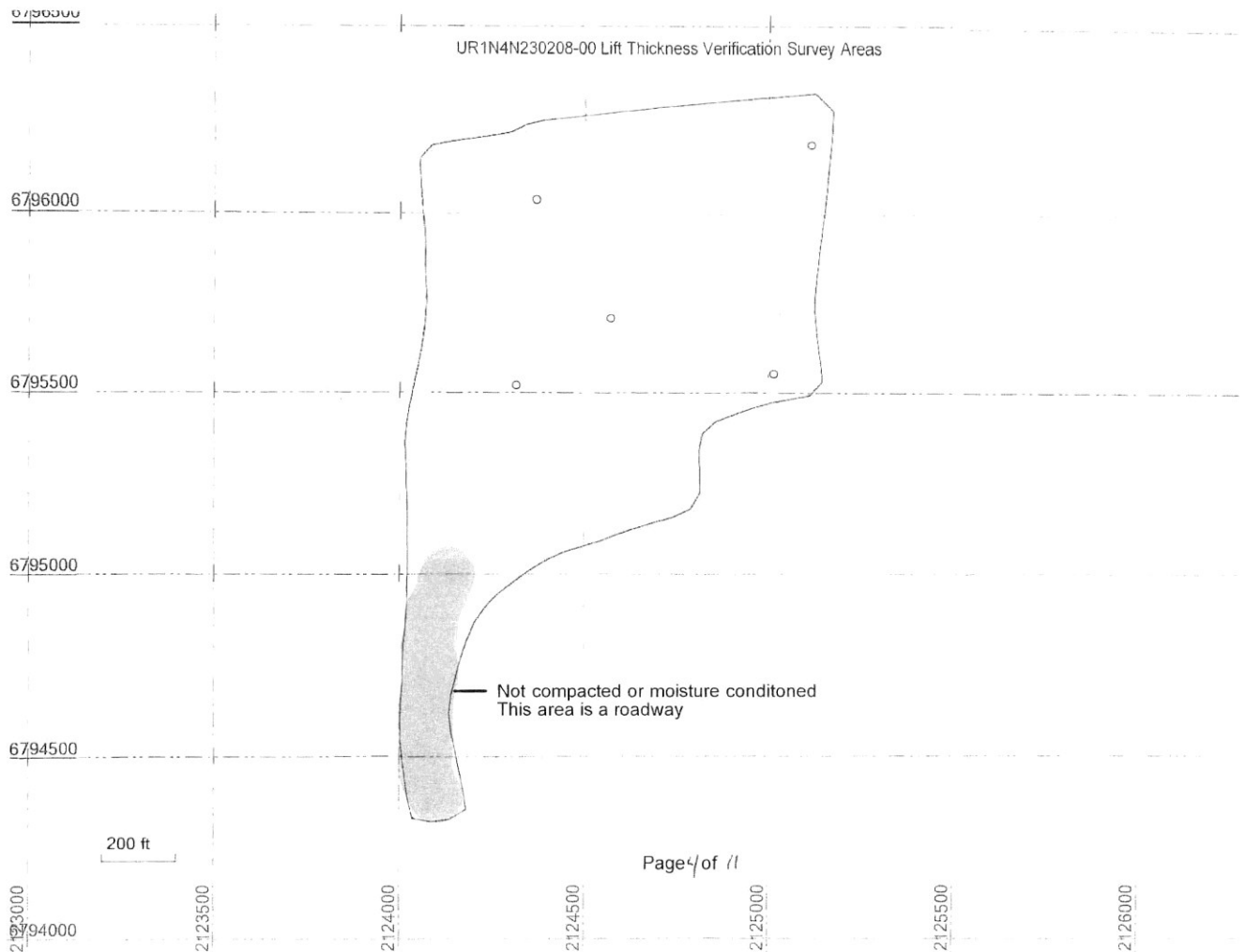
Density Testing  
DOE-EM/GJRAC1783  
Rev. 00

QC-F-001  
File Index No. \_\_\_\_\_  
Page 7 of 11

## Appendix A4. Radon Barrier Lift Approval Package (continued)

[illegible]

## Appendix A4. Radon Barrier Lift Approval Package (*continued*)



## Appendix A4. Radon Barrier Lift Approval Package (continued)

### FIELD DENSITY TEST

PROJECT: <u>Moab UMTRA</u>										Date: <u>2/16/2023</u>			
Lift ID <u>UR1N4N 230216-00 3rd Lift</u>													
Make/Model: <u>Troxler 3440 / 27359</u>										Gauge Calibration Date: <u>3/29/2022</u>			
Task: <u>Radon Barrier Cover</u>										Sand-Cone and Plate No. <u>N/A</u>		Sand-Cone Calibration Date: <u>N/A</u>	

Test No.	Depth (inches)	Test Location	Test NUC	Type Sand	MDD (pcf)	OMC (%)	WD (pcf)	DD (pcf)	MC (%)	Compaction (%)	Pass Fail	Soil Type	Proctor ID.	Date of Test
P1	8"	6795854.590 2124922.423	X		119.3	12.2	131.5	117.1	12.3	98	Pass	Shale	Radon Barrier2023 #5	2/16/2023
P2	8"	6795975.074 2124713.837	X		119.3	12.2	132.5	118.8	11.5	100	Pass	Shale	Radon Barrier2023 #5	2/16/2023
P3	8"	6795838.905 2125043.106	X		119.3	12.2	130.9	116.3	12.6	98	Pass	Shale	Radon Barrier2023 #5	2/16/2023
P4	8"	6795441.274 2124649.801	X		119.3	12.2	130.8	118.6	10.3	99	Pass	Shale	Radon Barrier2023 #5	2/16/2023
P5	8"	6796089.479 2124904.671	X		119.3	12.2	126.4	114.2	10.7	96	Pass	Shale	Radon Barrier2023 #5	2/16/2023
P6	8"	6795663.828 2124930.697	X		119.3	12.2	125.1	114.1	9.6	96	Pass	Shale	Radon Barrier2023 #5	2/16/2023
P7	8"	6795620.008 2125050.961	X		119.3	12.2	130.1	115.5	12.7	97	Pass	Shale	Radon Barrier2023 #5	2/16/2023
P8	8"	6796136.999 2125074.594	X		119.3	12.2	130.5	116.4	12.1	98	Pass	Shale	Radon Barrier2023 #5	2/16/2023

**Legend:**

\* indicates moisture and density correction for RRM only

\*\* indicates a retest

MDD- Maximum Dry Density

OMC- Optimum Moisture Content

WD- Wet Density

DD- Dry Density

MC- Moisture Content

**Standard Count:**

MS= 284

DS= 1,937

**Moisture Density Specifications:**

Specified Compaction Requirements **As Noted** % MDD

Specified Moisture Requirement **As Noted** % OMC

Proctor Testing Procedure ASTM

Notes: Moisture test taken @ test #P8

Proctor RB2023 #15

38°57'49.97"

109°47'52.47"

Testing By: Larry D Oviatt

Print Name / Signature

QA/QC Approval: Robert Anderson

Print Name / Signature

Date: 2/16/2023

Date: 4/11/2023



## Appendix A4. Radon Barrier Lift Approval Package (continued)

### FIELD DENSITY TEST

PROJECT: <b>Moab UMTRA</b>										Date: <u>2/21/2023</u>					
Lift ID <u>UR1N4N 230216-00 3rd Lift</u>															
Make/Model: <u>Troxler 3440 / 27359</u>										Gauge Calibration Date: <u>3/29/2022</u>					
Task: <u>Radon Barrier Cover</u>										Sand-Cone and Plate No. <u>N/A</u>		Sand-Cone Calibration Date: <u>N/A</u>			

Test No.	Depth (inches)	Test Location	Test NUC	Type Sand	MDD (pcf)	OMC (%)	WD (pcf)	DD (pcf)	MC (%)	Compaction (%)	Pass Fail	Soil Type	Proctor ID.	Date of Test
#P9	8"	6795316.829 2124507.414	X		119.3	12.2	127.1	114.1	11.3	96	Pass	Shale	Radon Barrier2023 #5	2/21/2023
#P10	8"	6795126.259 2124301.461	X		119.3	12.2	131.6	117.0	12.5	98	Pass	Shale	Radon Barrier2023 #5	2/21/2023
#P11	8"	675536.5659 2124407.212		X	126.1	10.0	134.1	122.3	9.6	97	Pass	Shale	Radon Barrier2023 #11 19%	2/21/2023
#P12	8"	6796105.14 2124354.225	X		123.0	11.5	134.9	118.8	13.5	97	Pass	Shale	Radon Barrier2023 #3 9%	2/21/2023
#P13	8"	6795622.607 2124297.871	X		123.5	11.1	130.8	119.3	9.6	97	Pass	Shale	Radon Barrier2023 #12 11%	2/21/2023
#P14	8"	6794954.781 2124159.95	X		119.3	12.2	126.2	113.8	10.9	95	Pass	Shale	Radon Barrier2023 #5	2/21/2023
#P15	8"	6795270.609 2124215.568	X		119.3	12.2	131.5	113.9	15.2	96	Pass	Shale	Radon Barrier2023 #5	2/21/2023
#P16	8"	6795893.106 2124469.831	X		119.3	12.2	124.8	114.0	9.4	96	Pass	Shale	Radon Barrier2023 #5	2/21/2023

**Legend:**

\* indicates moisture and density correction for RRM only

\*\* indicates a retest

MDD- Maximum Dry Density

OMC- Optimum Moisture Content

WD- Wet Density

DD- Dry Density

MC- Moisture Content

**Moisture Density Specifications:**

Specified Compaction Requirements      As Noted      % MDD

Specified Moisture Requirement              As Noted      % OMC

Proctor Testing Procedure ASTM

**Standard Count:**

MS= 284

DS= 1,937

Testing By: Larry D Oviatt      *Larry D Oviatt*

Print Name / Signature

QA/QC Approval: Robert Anderson      *Robert Anderson*

Print Name / Signature

Notes: Moisture test taken @ test #P11

Sand Cone test taken @ test #P11

Date: 2/21/2023

Date: 4/11/2023

## Appendix A4. Radon Barrier Lift Approval Package (continued)

JOHANSEN & TUTTLE ENGINEERING

Phone: 435-381-2523 · Fax: 435-381-2522

PROJECT	UMTRA	DATE	2/21/2022
JOB NUMBER	CRESCENT JUNCTION	SAMPLE NUMBER	Troxler test #P11 Radon Barrier Cover UR1N4N 230216-00 3rd LIFT

ASTM D1556 (DENSITY DETERMINATION)		
Testing Apparatus	1	Calibrated Vol. (ft <sup>3</sup> ) 0.1405
Bulk Density of sand	1.60 g/cm <sup>3</sup>	100.7 lbs/ft <sup>3</sup>
Mass of Sand to Fill Cone & Plate (M2)	1824.8	g
Proctor ID #	RB 2023 #11	
Max dry density	126.1	lbs/ft <sup>3</sup>
Opt. moisture	10.0	% Moisture
Mass of bottle & cone before filling cone, plate & hole	5138.1	g
Mass of bottle & cone after filling cone, plate & hole	2751.4	g
Mass of sand to fill cone, plate, & hole	2386.7	g
Mass of sand to fill hole	561.9	g
Mass of wet soil & container	1512.9	g
Mass of dry soil & container	1447.1	g
Weight of Water	65.8	
Mass of container	764.6	g
Weight of dry soil	682.5	g
Water Content	9.6	%
Weight of wet soil	748.3	g
Test Hole Volume	0.0123	
Wet Density	134.1	lbs/ft <sup>3</sup>
Dry Density	122.3	lbs/ft <sup>3</sup>
Percent Moisture	9.6	%
Percent Compaction	97.0	%
Proctor	126.1	lbs/ft <sup>3</sup>

TESTED BY: Larry D Oviatt *Larry D Oviatt*  
*LD* 2/21/2023

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## Appendix A4. Radon Barrier Lift Approval Package (continued)

### FIELD DENSITY TEST

PROJECT: <b>Moab UMTRA</b>										Date: <u>2/21/2023</u>					
Lift ID <u>UW1N4N 230131-00 3rd Lift</u>															
Make/Model: <u>Troxler 3440 / 27359</u>										Gauge Calibration Date: <u>3/29/2022</u>					
Task: <u>Radon Barrier Cover</u> Sand-Cone and Plate No. <u>N/A</u>										Sand-Cone Calibration Date: <u>N/A</u>					

Test No.	Depth (inches)	Test Location	Test NUC	Type Sand	MDD (pcf)	OMC (%)	WD (pcf)	DD (pcf)	MC (%)	Compaction (%)	Pass Fail	Soil Type	Proctor ID.	Date of Test
#17	8"	6796045.016 2124558.526	X		119.3	12.2	132.7	115.6	14.7	97	Pass	Shale	Radon Barrier2023 #5	2/21/2023
#18	8"	6795402.366 2124330.490	X		119.3	12.2	131.0	115.7	13.3	97	Pass	Shale	Radon BBarrier2023 #5	2/21/2023
#19	8"	6795756.796 2124585.332	X		121.0	12.0	128.7	116.5	10.5	96	Pass	Shale	Radon Barrier2023 #7 6%	2/21/2023

**Legend:**

\* indicates moisture and density correction for RRM only

\*\* indicates a retest

MDD- Maximum Dry Density

OMC- Optimum Moisture Content

WD- Wet Density

DD- Dry Density

MC- Moisture Content

**Moisture Density Specifications:**

Specified Compaction Requirements

Specified Moisture Requirement

Proctor Testing Procedure ASTM

**Standard Count:**

MS= 284

DS= 1.937

**Notes:**

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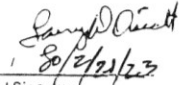
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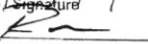
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Testing By: Larry D Oviatt

Print Name / Signature: 

QA/QC Approval: Robert Anderson

Print Name / Signature: 

Date: 2/21/2023

Date: 4/11/2023

## Appendix A4. Radon Barrier Lift Approval Package (continued)

### FIELD DENSITY TEST

PROJECT: <u>Moab UMTRA</u>										Date: <u>3/27/2023</u>			
Lift ID <u>UW1N4N 230216-00 3rd Lift</u>													
Make/Model: <u>Troxler 3440 / 27359</u>										Gauge Calibration Date: <u>3/29/2022</u>			
Task: <u>Radon Barrier Cover</u>										Sand-Cone and Plate No. <u>N/A</u>		Sand-Cone Calibration Date: <u>N/A</u>	

Test No.	Depth (inches)	Test Location	Test NUC	Type Sand	MDD (pcf)	OMC (%)	WD (pcf)	DD (pcf)	MC (%)	Compaction (%)	Pass Fail	Soil Type	Proctor ID.	Date of Test
#P22	8"	6795612.752 2124131.781	X		124.7	11.3	135.1	122.9	9.9	99	Pass	Shale	Radon Barrier2023 #19 13%	3/27/2023
#P20	8"	6795887.684 2124081.299		X	122.6	11.5	134.2	122.3	9.7	100	Pass	Shale	Radon Barrier2023 #17 7%	3/27/2023
#P21	8"	6796105.700 2124090.503	X		120.0	12.7	133.9	115.7	15.7	96	Pass	Shale	Radon Barrier2023 #14 7%	3/27/2023
#P24	8"	6796187.952 2124098.971	X		128.1	10.7	142.5	125.2	13.7	98	Pass	Shale	Radon Barrier2023 #18 19%	3/27/2023
#P25	8"	6796224.438 2124408.256	X		130.0	9.0	143.6	129.0	11.3	99	Pass	Shale	Radon Barrier2023 #10 28%	3/27/2023
#P23	8"	6796260.796 2124728.474	X		128.1	10.7	143.8	127.4	12.8	100	Pass	Shale	Radon Barrier2023 #18 19%	3/27/2023
#P27	8"	6796293.711 2125051.871	X		120.0	12.7	136.7	118.2	15.6	99	Pass	Shale	Radon Barrier2023 #14 7%	3/27/2023
#P26	8"	6796313.001 2125316.411	X		130.0	9.0	142.9	129.7	10.2	100	Pass	Shale	Radon Barrier2023 #10 28%	3/27/2023

**Legend:**

\* indicates moisture and density correction for RRM only

\*\* indicates a retest

MDD- Maximum Dry Density

OMC- Optimum Moisture Content

WD- Wet Density

DD- Dry Density

MC- Moisture Content

**Moisture Density Specifications:**

Specified Compaction Requirements

Specified Moisture Requirement

Proctor Testing Procedure ASTM

**Standard Count:**

MS= 284

DS= 1,937

Notes: Moisture test taken @ test #P20

Sand Cone test taken @ test #P20

Proctor RB2023 #26

38"57'49.43"

109"47'56.46"

Testing By: Larry D Oviatt

Print Name / Signature

QA/QC Approval: Robert Anderson

Print Name / Signature

Date: 3/27/2023

Date: 4/11/2023



## Appendix A4. Radon Barrier Lift Approval Package (continued)

JOHANSEN & TUTTLE ENGINEERING

Phone: 435-381-2523 · Fax: 435-381-2522

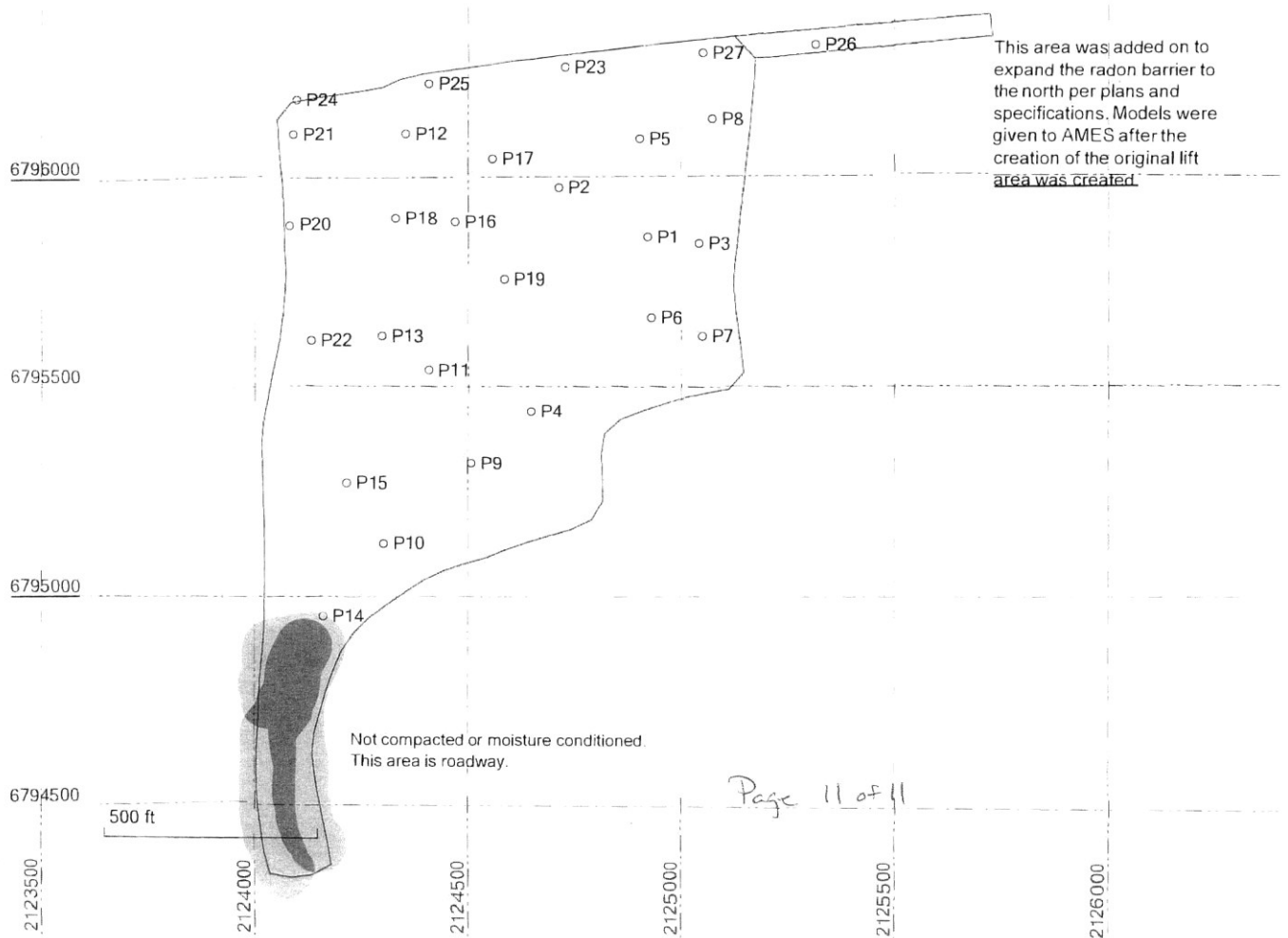
PROJECT	UMTRA	DATE	3/27/2022
JOB NUMBER	CRESCENT JUNCTION	SAMPLE NUMBER	Troxler test #P20 Radon Barrier Cover UR1N4N 230216-00 3rd LIFT

ASTM D1556 (DENSITY DETERMINATION)		
Testing Apparatus	I	Calibrated Vol. (ft <sup>3</sup> ) 0.1405
Bulk Density of sand	1.60 g/cm <sup>3</sup>	100.7 lbs/ft <sup>3</sup>
Mass of Sand to Fill Cone & Plate (M2)		1824.8 g
Proctor ID #	RB 2023 #17	
Max dry density	122.6	lbs/ft <sup>3</sup>
Opt. moisture	11.5	% Moisture
Mass of bottle & cone before filling cone, plate & hole		5195.5 g
Mass of bottle & cone after filling cone, plate & hole		2733.6 g
Mass of sand to fill cone, plate, & hole		2461.9 g
Mass of sand to fill hole		637.1 g
Mass of wet soil & container		1614.7 g
Mass of dry soil & container		1539.6 g
Weight of Water		75.1
Mass of container		765.7 g
Weight of dry soil		773.9 g
Water Content		9.7 %
Weight of wet soil		849.0 g
Test Hole Volume		0.0139
Wet Density		134.2 lbs/ft <sup>3</sup>
Dry Density		122.3 lbs/ft <sup>3</sup>
Percent Moisture		9.7 %
Percent Compaction		99.8 %
Proctor		122.6 lbs/ft <sup>3</sup>

TESTED BY: Larry D Oviatt *Larry D Oviatt*  
*4/11/2023*

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## Appendix A4. Radon Barrier Lift Approval Package (*continued*)



## Appendix A4. Radon Barrier Buyoff Survey

Environmental Management - Grand Junction Office



### Radon Barrier Buyoff Form

**Client:** Department of Energy  
**Project:** Moab UMTRA Project  
**Date:** 6/12/2023

In signing this document, the signatory agrees that the Radon Barrier is complete and meets both the project specifications and RAIP requirements.

Excavation Area	Lift Area
Manco Shale from new cell area on CJ site.	URBW1N230608-00

Approver Name/Title	Signature	Sign Date
Don Janz/ CJ Operations/Site Mgr.		6/13/23
Tammy Hooker/ QA/QC Representative		6/13/2023
Kathy Turvy/ QA/AC Manager		6/13/2023

#### Comments

QC performed a visual inspection of the final surface. The grading tolerance for the finish grade of the radon barrier is -0ft to +0.17ft (-0 in to +2 in) This was changed during ET cover design by the design authority, Steve Dwyer PE, PhD. The previously designed radon barrier was raised 0.17 FT to allow this methodology. Radon barrier was constructed of Mancos shale which was excavated and produced on site. Laboratory determination of water (Moisture) content of soil and rock by mass and /or ASTM 4643, 2216, Determination of water moisture content of soil by microwave oven heating. Particle-size analysis according to ASTM D 422, Radon barrier soil shall be compacted to 95% of its laboratory maximum dry density determined in accordance with ASTM D 698. The final lift shall be smooth rolled. Excavated and placed by Ames construction. Soil testing and proctors, laboratory tested by J & T.

OP-F-013  
Rev 0, August 2010

File Index No. 43.1.1  
Page 1 of 1



## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N230608-00				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
30675 stk	6794859.99	2123100.04	4987.36	4987.31	0.05	0.6
30676 stk	6794910.03	2123100.02	4988.60	4988.57	0.03	0.3
30677 stk	6794959.97	2123099.98	4989.93	4989.83	0.10	1.2
30704 stk	6794510.04	2123150.06	4978.52	4978.49	0.04	0.5
30705 stk	6794560.03	2123150.05	4979.89	4979.75	0.14	1.6
30706 stk	6794609.99	2123150.05	4981.16	4981.01	0.15	1.8
30707 stk	6794659.98	2123150.01	4982.28	4982.28	0.01	0.1
30708 stk	6794710.00	2123150.00	4983.58	4983.54	0.03	0.4
30709 stk	6794760.03	2123150.04	4984.93	4984.81	0.12	1.5
30710 stk	6794809.99	2123150.00	4986.10	4986.07	0.03	0.3
30711 stk	6794860.01	2123150.01	4987.36	4987.33	0.03	0.3
30712 stk	6794909.98	2123150.01	4988.65	4988.60	0.06	0.7
30713 stk	6794960.01	2123150.02	4989.92	4989.86	0.06	0.7
30714 stk	6795009.96	2123150.00	4991.29	4991.12	0.16	1.9
30715 stk	6795060.01	2123150.01	4992.46	4992.39	0.07	0.9
30735 stk	6794259.98	2123199.97	4972.27	4972.20	0.07	0.8
30736 stk	6794310.01	2123200.00	4973.50	4973.46	0.04	0.5
30737 stk	6794360.03	2123200.02	4974.89	4974.72	0.16	1.9
30738 stk	6794409.99	2123199.96	4976.03	4975.99	0.04	0.5
30739 stk	6794459.98	2123200.00	4977.30	4977.25	0.04	0.5
30740 stk	6794509.97	2123200.00	4978.57	4978.52	0.05	0.6
30741 stk	6794559.99	2123200.02	4979.85	4979.78	0.07	0.9
30742 stk	6794610.02	2123200.02	4981.09	4981.04	0.05	0.6
30743 stk	6794660.00	2123199.97	4982.34	4982.31	0.03	0.4
30744 stk	6794709.95	2123200.00	4983.59	4983.57	0.02	0.2
30745 stk	6794760.01	2123200.04	4984.97	4984.83	0.14	1.6
30746 stk	6794810.01	2123199.95	4986.23	4986.10	0.13	1.6
30747 stk	6794860.02	2123200.01	4987.43	4987.36	0.07	0.9
30748 stk	6794910.02	2123200.04	4988.70	4988.63	0.08	0.9
30749 stk	6794960.02	2123200.03	4989.91	4989.89	0.02	0.3
30750 stk	6795010.01	2123200.00	4991.26	4991.15	0.11	1.3
30751 stk	6795059.99	2123200.01	4992.52	4992.42	0.10	1.2
30752 stk	6795110.01	2123200.05	4993.78	4993.68	0.10	1.2
30753 stk	6795160.00	2123200.02	4994.97	4994.94	0.02	0.3
30754 stk	6795210.00	2123199.99	4996.29	4996.21	0.08	1.0
30755 stk	6795260.01	2123199.94	4997.60	4997.47	0.13	1.5
30756 stk	6795309.99	2123199.98	4998.82	4998.74	0.08	1.0
30757 stk	6795359.96	2123200.03	5000.07	5000.00	0.07	0.9
30758 stk	6795409.96	2123200.05	5001.35	5001.26	0.08	1.0
30759 stk	6795459.97	2123200.00	5002.62	5002.53	0.09	1.1
30760 stk	6795510.06	2123199.99	5003.85	5003.79	0.06	0.8
30761 stk	6795560.04	2123199.99	5003.40	5003.38	0.02	0.2
30762 stk	6795610.05	2123200.05	5002.46	5002.41	0.05	0.6
30763 stk	6795660.03	2123199.97	5001.46	5001.44	0.02	0.3
30764 stk	6795710.06	2123199.95	5000.53	5000.47	0.06	0.7
30765 stk	6795760.07	2123200.01	4999.59	4999.50	0.09	1.1
30766 stk	6795809.98	2123199.96	4998.69	4998.53	0.15	1.9
30767 stk	6795860.03	2123200.00	4997.63	4997.56	0.07	0.8
30768 stk	6795910.05	2123200.01	4996.67	4996.60	0.08	0.9
30769 stk	6795959.99	2123200.06	4995.71	4995.63	0.08	0.9
30770 stk	6796010.00	2123200.02	4994.75	4994.66	0.09	1.1
30771 stk	6794259.98	2123250.04	4972.25	4972.23	0.02	0.3
30772 stk	6794309.98	2123249.94	4973.61	4973.49	0.12	1.4
30773 stk	6794359.99	2123249.99	4974.82	4974.75	0.07	0.8
30774 stk	6794409.98	2123250.00	4976.08	4976.02	0.06	0.8
30775 stk	6794460.02	2123250.00	4977.35	4977.28	0.07	0.8
30776 stk	6794510.01	2123250.01	4978.69	4978.54	0.15	1.8
30777 stk	6794559.98	2123250.01	4979.83	4979.81	0.02	0.2
30778 stk	6794609.97	2123250.06	4981.13	4981.07	0.06	0.7
30779 stk	6794660.02	2123250.02	4982.39	4982.33	0.06	0.7
30780 stk	6794710.01	2123249.97	4983.68	4983.60	0.08	1.0
30781 stk	6794759.99	2123250.04	4984.89	4984.86	0.03	0.4
30782 stk	6794810.00	2123249.97	4986.15	4986.13	0.03	0.3
30783 stk	6794860.01	2123250.02	4987.48	4987.39	0.09	1.0
30784 stk	6794910.04	2123250.03	4988.71	4988.65	0.05	0.6

Radon Barrier  
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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
30675_stk	6794859.99	2123100.04	4987.36	4987.31	0.05	0.6
30676_stk	6794910.03	2123100.02	4988.60	4988.57	0.03	0.3
30677_stk	6794959.97	2123099.98	4989.93	4989.83	0.10	1.2
30704_stk	6794510.04	2123150.06	4978.52	4978.49	0.04	0.5
30705_stk	6794560.03	2123150.05	4979.89	4979.75	0.14	1.6
30706_stk	6794609.99	2123150.05	4981.16	4981.01	0.15	1.8
30707_stk	6794659.98	2123150.01	4982.28	4982.28	0.01	0.1
30708_stk	6794710.00	2123150.00	4983.58	4983.54	0.03	0.4
30709_stk	6794760.03	2123150.04	4984.93	4984.81	0.12	1.5
30710_stk	6794809.99	2123150.00	4986.10	4986.07	0.03	0.3
30711_stk	6794860.01	2123150.01	4987.36	4987.33	0.03	0.3
30712_stk	6794909.98	2123150.01	4988.65	4988.60	0.06	0.7
30713_stk	6794960.01	2123150.02	4989.92	4989.86	0.06	0.7
30714_stk	6795009.96	2123150.00	4991.29	4991.12	0.16	1.9
30715_stk	6795060.01	2123150.01	4992.46	4992.39	0.07	0.9
30735_stk	6794259.98	2123199.97	4972.27	4972.20	0.07	0.8
30736_stk	6794310.01	2123200.00	4973.50	4973.46	0.04	0.5
30737_stk	6794360.03	2123200.02	4974.89	4974.72	0.16	1.9
30738_stk	6794409.99	2123199.96	4976.03	4975.99	0.04	0.5
30739_stk	6794459.98	2123200.00	4977.30	4977.25	0.04	0.5
30740_stk	6794509.97	2123200.00	4978.57	4978.52	0.05	0.6
30741_stk	6794559.99	2123200.02	4979.85	4979.78	0.07	0.9
30742_stk	6794610.02	2123200.02	4981.09	4981.04	0.05	0.6
30743_stk	6794660.00	2123199.97	4982.34	4982.31	0.03	0.4
30744_stk	6794709.95	2123200.00	4983.59	4983.57	0.02	0.2
30745_stk	6794760.01	2123200.04	4984.97	4984.83	0.14	1.6
30746_stk	6794810.01	2123199.95	4986.23	4986.10	0.13	1.6
30747_stk	6794860.02	2123200.01	4987.43	4987.36	0.07	0.9
30748_stk	6794910.02	2123200.04	4988.70	4988.63	0.08	0.9
30749_stk	6794960.02	2123200.03	4989.91	4989.89	0.02	0.3
30750_stk	6795010.01	2123200.00	4991.26	4991.15	0.11	1.3
30751_stk	6795059.99	2123200.01	4992.52	4992.42	0.10	1.2
30752_stk	6795110.01	2123200.05	4993.78	4993.68	0.10	1.2
30753_stk	6795160.00	2123200.02	4994.97	4994.94	0.02	0.3
30754_stk	6795210.00	2123199.99	4996.29	4996.21	0.08	1.0
30755_stk	6795260.01	2123199.94	4997.60	4997.47	0.13	1.5
30756_stk	6795309.99	2123199.98	4998.82	4998.74	0.08	1.0
30757_stk	6795359.96	2123200.03	5000.07	5000.00	0.07	0.9
30758_stk	6795409.96	2123200.05	5001.35	5001.26	0.08	1.0
30759_stk	6795459.97	2123200.00	5002.52	5002.53	0.09	1.1
30760_stk	6795510.06	2123199.99	5003.85	5003.79	0.06	0.8
30761_stk	6795560.04	2123199.99	5003.40	5003.38	0.02	0.2
30762_stk	6795610.05	2123200.05	5002.46	5002.41	0.05	0.6
30763_stk	6795660.03	2123199.97	5001.46	5001.44	0.02	0.3
30764_stk	6795710.06	2123199.95	5000.53	5000.47	0.06	0.7
30765_stk	6795760.07	2123200.01	4999.59	4999.50	0.09	1.1
30766_stk	6795809.98	2123199.96	4998.69	4998.53	0.15	1.9
30767_stk	6795860.03	2123200.00	4997.63	4997.56	0.07	0.8
30768_stk	6795910.05	2123200.01	4996.67	4996.60	0.08	0.9
30769_stk	6795959.99	2123200.06	4995.71	4995.63	0.08	0.9
30770_stk	6796010.00	2123200.02	4994.75	4994.66	0.09	1.1
30771_stk	6794259.98	2123250.04	4972.25	4972.23	0.02	0.3
30772_stk	6794309.98	2123249.94	4973.61	4973.49	0.12	1.4
30773_stk	6794359.99	2123249.99	4974.82	4974.75	0.07	0.8
30774_stk	6794409.98	2123250.00	4976.08	4976.02	0.06	0.8
30775_stk	6794460.02	2123250.00	4977.35	4977.28	0.07	0.8
30776_stk	6794510.01	2123250.01	4978.69	4978.54	0.15	1.8
30777_stk	6794559.98	2123250.01	4979.83	4979.81	0.02	0.2
30778_stk	6794609.97	2123250.06	4981.13	4981.07	0.06	0.7
30779_stk	6794660.02	2123250.02	4982.39	4982.33	0.06	0.7
30780_stk	6794710.01	2123249.97	4983.68	4983.60	0.08	1.0
30781_stk	6794759.99	2123250.04	4984.89	4984.86	0.03	0.4
30782_stk	6794810.00	2123249.97	4986.15	4986.13	0.03	0.3
30783_stk	6794860.01	2123250.02	4987.48	4987.39	0.09	1.0
30784_stk	6794910.04	2123250.03	4988.71	4988.65	0.05	0.6
30785_stk	6794960.03	2123250.04	4990.00	4989.92	0.08	0.9

Radon Barrier  
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PORTAGE, INC.

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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
30786_stk	6795010.00	2123249.98	4991.28	4991.18	0.10	1.1
30787_stk	6795060.04	2123250.00	4992.54	4992.45	0.09	1.1
30788_stk	6795110.00	2123249.99	4993.83	4993.71	0.12	1.4
30789_stk	6795159.94	2123250.03	4995.07	4994.97	0.10	1.2
30790_stk	6795210.06	2123250.03	4996.34	4996.24	0.10	1.2
30791_stk	6795260.03	2123249.98	4997.64	4997.50	0.14	1.7
30792_stk	6795310.00	2123249.99	4998.89	4998.76	0.13	1.5
30793_stk	6795360.02	2123249.96	5000.14	5000.03	0.11	1.3
30794_stk	6795409.99	2123249.99	5001.32	5001.29	0.03	0.4
30795_stk	6795460.03	2123250.02	5002.58	5002.55	0.03	0.3
30796_stk	6795510.00	2123250.01	5003.87	5003.82	0.05	0.6
30797_stk	6795560.03	2123250.01	5003.82	5003.69	0.13	1.6
30798_stk	6795610.01	2123249.95	5002.73	5002.72	0.01	0.1
30799_stk	6795660.03	2123249.96	5001.88	5001.75	0.13	1.6
30800_stk	6795710.01	2123250.02	5000.84	5000.78	0.06	0.7
30801_stk	6795760.04	2123249.94	4999.86	4999.81	0.05	0.6
30802_stk	6795810.06	2123250.04	4998.87	4998.84	0.03	0.4
30803_stk	6795859.93	2123250.00	4997.99	4997.87	0.11	1.4
30804_stk	6795909.96	2123249.98	4996.94	4996.91	0.03	0.4
30805_stk	6795960.01	2123250.00	4995.95	4995.94	0.02	0.2
30806_stk	6796010.00	2123250.00	4995.12	4994.97	0.15	1.8
30807_stk	6794260.02	2123300.07	4972.36	4972.25	0.11	1.3
30808_stk	6794310.01	2123300.00	4973.61	4973.52	0.10	1.2
30809_stk	6794360.03	2123300.04	4974.88	4974.78	0.10	1.1
30810_stk	6794410.03	2123300.03	4976.14	4976.04	0.10	1.1
30811_stk	6794460.00	2123300.02	4977.46	4977.31	0.15	1.8
30812_stk	6794510.06	2123299.98	4978.61	4978.57	0.04	0.5
30813_stk	6794559.98	2123300.00	4979.88	4979.84	0.05	0.6
30814_stk	6794609.98	2123300.07	4981.16	4981.10	0.06	0.7
30815_stk	6794660.01	2123299.98	4982.44	4982.36	0.07	0.9
30816_stk	6794709.99	2123300.02	4983.68	4983.63	0.05	0.7
30817_stk	6794759.99	2123300.02	4985.00	4984.89	0.10	1.3
30818_stk	6794810.01	2123299.97	4986.21	4986.15	0.06	0.7
30819_stk	6794860.01	2123299.96	4987.51	4987.42	0.09	1.1
30820_stk	6794910.00	2123299.98	4988.82	4988.68	0.14	1.7
30821_stk	6794959.99	2123300.03	4990.04	4989.95	0.09	1.1
30822_stk	6795010.00	2123300.03	4991.33	4991.21	0.12	1.4
30823_stk	6795059.97	2123299.98	4992.53	4992.47	0.06	0.7
30824_stk	6795110.00	2123300.02	4993.89	4993.74	0.16	1.9
30825_stk	6795159.96	2123300.04	4995.13	4995.00	0.13	1.5
30826_stk	6795209.98	2123299.98	4996.36	4996.26	0.10	1.2
30827_stk	6795259.98	2123299.96	4997.60	4997.53	0.07	0.8
30828_stk	6795309.97	2123300.01	4998.84	4998.79	0.05	0.6
30829_stk	6795360.05	2123299.96	5000.15	5000.06	0.09	1.1
30830_stk	6795409.96	2123299.98	5001.41	5001.32	0.09	1.1
30831_stk	6795460.02	2123299.96	5002.67	5002.58	0.09	1.0
30832_stk	6795510.04	2123299.99	5003.86	5003.85	0.02	0.2
30833_stk	6795560.06	2123299.99	5004.02	5003.99	0.03	0.4
30834_stk	6795609.99	2123300.06	5003.05	5003.03	0.02	0.3
30835_stk	6795659.97	2123299.96	5002.15	5002.06	0.09	1.0
30836_stk	6795709.99	2123299.95	5001.12	5001.09	0.03	0.4
30837_stk	6795759.94	2123299.96	5000.14	5000.12	0.02	0.2
30838_stk	6795810.02	2123299.99	4999.31	4999.15	0.16	1.9
30839_stk	6795859.95	2123299.96	4998.28	4998.18	0.10	1.2
30840_stk	6795910.01	2123299.97	4997.30	4997.21	0.09	1.0
30841_stk	6795960.00	2123300.03	4996.26	4996.25	0.01	0.2
30842_stk	6796009.96	2123300.01	4995.34	4995.28	0.06	0.7
30843_stk	6796059.98	2123299.98	4994.37	4994.31	0.06	0.7
30844_stk	6794260.02	2123350.04	4972.41	4972.28	0.13	1.5
30845_stk	6794310.01	2123349.99	4973.57	4973.55	0.02	0.3
30846_stk	6794359.96	2123349.96	4974.92	4974.81	0.11	1.3
30847_stk	6794410.05	2123350.02	4976.10	4976.07	0.02	0.3
30848_stk	6794460.00	2123350.06	4977.42	4977.34	0.09	1.0
30849_stk	6794510.05	2123349.99	4978.76	4978.60	0.15	1.9
30850_stk	6794560.00	2123349.97	4980.03	4979.86	0.16	2.0
30851_stk	6794609.99	2123349.96	4981.19	4981.13	0.07	0.8

Radon Barrier  
Grade Verification Form

**NORTH-WIND**  
PORTAGE, INC.

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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
30852_stk	6794660.03	2123350.00	4982.43	4982.39	0.04	0.5
30853_stk	6794709.94	2123349.98	4983.74	4983.66	0.08	1.0
30854_stk	6794760.00	2123349.98	4984.93	4984.92	0.01	0.1
30855_stk	6794810.03	2123349.99	4986.23	4986.18	0.05	0.6
30856_stk	6794860.00	2123350.01	4987.46	4987.45	0.01	0.2
30857_stk	6794909.96	2123350.03	4988.79	4988.71	0.08	1.0
30858_stk	6794960.01	2123350.06	4990.05	4989.97	0.07	0.9
30859_stk	6795010.00	2123350.06	4991.38	4991.24	0.14	1.7
30860_stk	6795060.01	2123350.02	4992.56	4992.50	0.06	0.7
30861_stk	6795109.96	2123349.98	4993.89	4993.77	0.13	1.5
30862_stk	6795160.00	2123349.99	4995.06	4995.03	0.03	0.3
30863_stk	6795209.98	2123349.99	4996.36	4996.29	0.07	0.8
30864_stk	6795259.96	2123349.97	4997.68	4997.56	0.13	1.5
30865_stk	6795310.00	2123350.02	4998.84	4998.82	0.02	0.3
30866_stk	6795360.06	2123350.01	5000.17	5000.08	0.09	1.0
30867_stk	6795410.06	2123350.04	5001.38	5001.35	0.03	0.3
30868_stk	6795460.04	2123349.98	5002.70	5002.61	0.09	1.0
30869_stk	6795510.03	2123350.07	5003.92	5003.88	0.05	0.5
30870_stk	6795560.00	2123349.94	5004.36	5004.30	0.06	0.7
30871_stk	6795609.98	2123349.98	5003.40	5003.34	0.06	0.7
30872_stk	6795659.98	2123349.96	5002.51	5002.37	0.14	1.6
30873_stk	6795710.06	2123349.99	5001.49	5001.40	0.09	1.0
30874_stk	6795759.98	2123350.03	5000.51	5000.43	0.08	1.0
30875_stk	6795810.05	2123350.04	4999.49	4999.46	0.03	0.3
30876_stk	6795859.98	2123349.96	4998.57	4998.49	0.07	0.9
30877_stk	6795909.97	2123350.02	4997.80	4997.52	0.08	1.0
30878_stk	6795960.02	2123349.96	4996.62	4996.55	0.07	0.8
30879_stk	6796009.97	2123349.99	4995.68	4995.59	0.09	1.1
30880_stk	6796060.00	2123350.02	4994.67	4994.62	0.05	0.6
30881_stk	6794259.98	2123400.05	4972.44	4972.31	0.13	1.5
30882_stk	6794309.98	2123400.06	4973.71	4973.57	0.14	1.6
30883_stk	6794359.98	2123400.06	4974.86	4974.84	0.02	0.3
30884_stk	6794409.96	2123399.99	4976.16	4976.10	0.06	0.7
30885_stk	6794460.00	2123400.00	4977.50	4977.36	0.14	1.7
30886_stk	6794509.97	2123400.01	4978.75	4978.63	0.12	1.5
30887_stk	6794560.03	2123399.98	4979.95	4979.89	0.05	0.6
30888_stk	6794610.01	2123399.99	4981.18	4981.16	0.03	0.3
30889_stk	6794660.02	2123400.00	4982.47	4982.42	0.05	0.6
30890_stk	6794710.02	2123399.98	4983.73	4983.68	0.05	0.6
30891_stk	6794760.03	2123400.00	4985.02	4984.95	0.08	0.9
30892_stk	6794810.03	2123400.04	4986.29	4986.21	0.08	0.9
30893_stk	6794859.98	2123400.02	4987.59	4987.47	0.12	1.4
30894_stk	6794909.99	2123399.93	4988.75	4988.74	0.01	0.1
30895_stk	6794959.97	2123400.05	4990.12	4990.00	0.12	1.4
30896_stk	6795010.04	2123400.00	4991.39	4991.27	0.12	1.5
30897_stk	6795060.04	2123399.99	4992.61	4992.53	0.08	0.9
30898_stk	6795110.02	2123400.00	4993.83	4993.79	0.04	0.5
30899_stk	6795160.02	2123400.03	4995.10	4995.06	0.04	0.5
30900_stk	6795210.04	2123399.96	4996.41	4996.32	0.09	1.1
30901_stk	6795259.98	2123399.98	4997.68	4997.58	0.10	1.2
30902_stk	6795310.00	2123400.02	4998.94	4998.85	0.09	1.0
30903_stk	6795359.96	2123399.94	5000.16	5000.11	0.05	0.6
30904_stk	6795409.98	2123399.99	5001.46	5001.38	0.08	1.0
30905_stk	6795460.00	2123400.05	5002.66	5002.64	0.02	0.3
30906_stk	6795509.98	2123399.99	5003.93	5003.90	0.03	0.3
30907_stk	6795560.01	2123399.96	5004.67	5004.61	0.06	0.7
30908_stk	6795609.97	2123399.99	5003.73	5003.65	0.08	1.0
30909_stk	6795660.00	2123400.03	5002.77	5002.68	0.09	1.1
30910_stk	6795710.04	2123400.00	5001.84	5001.71	0.13	1.5
30911_stk	6795759.97	2123400.00	5000.87	5000.74	0.13	1.6
30912_stk	6795810.06	2123400.03	4999.83	4999.77	0.05	0.6
30913_stk	6795860.02	2123400.01	4998.84	4998.80	0.04	0.4
30914_stk	6795910.02	2123400.04	4997.96	4997.83	0.12	1.5
30915_stk	6795960.01	2123399.98	4996.93	4996.86	0.06	0.8
30916_stk	6796010.00	2123400.04	4995.95	4995.90	0.06	0.7
30917_stk	6796060.03	2123400.04	4995.00	4994.93	0.07	0.9

Radon Barrier  
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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
30918_stk	6794260.00	2123450.07	4972.42	4972.34	0.08	1.0
30919_stk	6794310.05	2123450.05	4973.68	4973.60	0.08	0.9
30920_stk	6794359.95	2123449.98	4974.92	4974.87	0.06	0.7
30921_stk	6794410.01	2123450.03	4976.22	4976.13	0.09	1.1
30922_stk	6794460.05	2123449.98	4977.43	4977.39	0.03	0.4
30923_stk	6794510.01	2123450.06	4978.75	4978.66	0.09	1.1
30924_stk	6794559.97	2123450.05	4980.00	4979.92	0.08	1.0
30925_stk	6794610.03	2123450.06	4981.34	4981.18	0.15	1.8
30926_stk	6794660.02	2123450.06	4982.60	4982.45	0.16	1.9
30927_stk	6794710.01	2123449.94	4983.72	4983.71	0.01	0.2
30928_stk	6794760.04	2123449.98	4985.07	4984.98	0.10	1.2
30929_stk	6794810.00	2123449.99	4986.28	4986.24	0.04	0.5
30930_stk	6794859.98	2123450.01	4987.62	4987.50	0.12	1.4
30931_stk	6794910.01	2123450.01	4988.86	4988.77	0.10	1.2
30932_stk	6794959.97	2123449.99	4990.13	4990.03	0.10	1.2
30933_stk	6795010.01	2123450.00	4991.39	4991.29	0.10	1.1
30934_stk	6795060.00	2123450.04	4992.57	4992.56	0.01	0.1
30935_stk	6795110.01	2123449.98	4993.88	4993.82	0.05	0.6
30936_stk	6795160.06	2123449.99	4995.14	4995.09	0.05	0.6
30937_stk	6795209.99	2123450.00	4996.35	4996.35	0.00	0.0
30938_stk	6795259.97	2123449.96	4997.66	4997.61	0.05	0.6
30939_stk	6795309.96	2123450.02	4998.97	4998.88	0.09	1.1
30940_stk	6795360.04	2123449.99	5000.23	5000.14	0.09	1.1
30941_stk	6795410.01	2123449.94	5001.43	5001.40	0.02	0.3
30942_stk	6795460.01	2123450.07	5002.73	5002.67	0.06	0.7
30943_stk	6795509.96	2123449.95	5004.01	5003.93	0.08	1.0
30944_stk	6795559.95	2123450.03	5004.98	5004.92	0.06	0.7
30945_stk	6795610.02	2123450.04	5003.96	5003.96	0.01	0.1
30946_stk	6795659.97	2123450.05	5003.02	5002.99	0.04	0.4
30947_stk	6795710.01	2123450.03	5002.13	5002.02	0.11	1.4
30948_stk	6795759.94	2123450.02	5001.05	5001.05	0.01	0.1
30949_stk	6795809.94	2123449.98	5000.09	5000.08	0.01	0.1
30950_stk	6795860.00	2123450.00	4999.14	4999.11	0.03	0.4
30951_stk	6795909.93	2123450.00	4998.22	4998.14	0.08	0.9
30952_stk	6795959.97	2123449.98	4997.24	4997.17	0.07	0.8
30953_stk	6796010.03	2123450.02	4996.22	4996.20	0.02	0.2
30954_stk	6796060.00	2123450.01	4995.26	4995.24	0.03	0.3
30955_stk	6794259.95	2123499.98	4972.48	4972.37	0.12	1.4
30956_stk	6794310.00	2123500.01	4973.69	4973.63	0.06	0.7
30957_stk	6794360.04	2123500.03	4974.92	4974.89	0.03	0.4
30958_stk	6794410.03	2123500.06	4976.21	4976.16	0.05	0.6
30959_stk	6794459.99	2123500.06	4977.57	4977.42	0.15	1.8
30960_stk	6794509.96	2123500.01	4978.75	4978.68	0.06	0.8
30961_stk	6794559.96	2123499.99	4980.10	4979.95	0.15	1.8
30962_stk	6794610.02	2123500.05	4981.29	4981.21	0.08	0.9
30963_stk	6794659.96	2123499.97	4982.61	4982.48	0.13	1.6
30964_stk	6794709.96	2123499.98	4983.81	4983.74	0.07	0.8
30965_stk	6794759.93	2123500.00	4985.04	4985.00	0.03	0.4
30966_stk	6794810.01	2123499.96	4986.33	4986.27	0.06	0.8
30967_stk	6794860.00	2123499.99	4987.61	4987.53	0.08	1.0
30968_stk	6794909.97	2123500.02	4988.81	4988.80	0.01	0.2
30969_stk	6794960.03	2123499.99	4990.15	4990.06	0.09	1.1
30970_stk	6795010.01	2123499.94	4991.37	4991.32	0.05	0.6
30971_stk	6795059.95	2123499.98	4992.62	4992.59	0.04	0.4
30972_stk	6795109.99	2123500.02	4993.95	4993.85	0.10	1.2
30973_stk	6795160.04	2123499.94	4995.15	4995.11	0.03	0.4
30974_stk	6795209.99	2123500.07	4996.40	4996.38	0.02	0.3
30975_stk	6795259.99	2123499.94	4997.65	4997.64	0.01	0.1
30976_stk	6795309.96	2123500.00	4998.92	4998.91	0.01	0.1
30977_stk	6795360.02	2123500.01	5000.20	5000.17	0.03	0.4
30978_stk	6795409.97	2123500.02	5001.46	5001.43	0.03	0.4
30979_stk	6795460.00	2123499.98	5002.72	5002.70	0.02	0.3
30980_stk	6795510.04	2123499.94	5003.96	5003.96	0.00	0.0
30981_stk	6795560.04	2123500.02	5005.24	5005.22	0.02	0.2
30982_stk	6795610.00	2123500.06	5004.29	5004.27	0.02	0.3
30983_stk	6795659.95	2123500.02	5003.36	5003.30	0.07	0.8

Radon Barrier  
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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
30984_stk	6795710.00	2123500.02	5002.41	5002.33	0.08	1.0
30985_stk	6795760.04	2123500.03	5001.38	5001.36	0.02	0.2
30986_stk	6795809.95	2123500.01	5000.46	5000.39	0.07	0.8
30987_stk	6795860.03	2123499.96	4999.50	4999.42	0.07	0.9
30988_stk	6795910.02	2123500.02	4998.47	4998.45	0.01	0.2
30989_stk	6795960.01	2123500.05	4997.58	4997.48	0.09	1.1
30990_stk	6796009.95	2123499.99	4996.56	4996.51	0.05	0.6
30991_stk	6796059.97	2123499.96	4995.59	4995.55	0.04	0.5
30992_stk	6794259.97	2123549.97	4972.46	4972.40	0.07	0.8
30993_stk	6794310.00	2123550.04	4973.67	4973.66	0.01	0.2
30994_stk	6794360.04	2123549.99	4974.94	4974.92	0.02	0.2
30995_stk	6794409.94	2123550.01	4976.27	4976.19	0.09	1.0
30996_stk	6794460.02	2123550.07	4977.53	4977.45	0.08	0.9
30997_stk	6794510.01	2123550.01	4978.76	4978.71	0.05	0.6
30998_stk	6794560.01	2123550.02	4980.09	4979.98	0.12	1.4
30999_stk	6794610.03	2123549.99	4981.38	4981.24	0.14	1.7
31000_stk	6794659.96	2123550.05	4982.51	4982.50	0.00	0.0
31001_stk	6794709.99	2123549.96	4983.83	4983.77	0.06	0.7
31002_stk	6794759.99	2123550.02	4985.10	4985.03	0.07	0.8
31003_stk	6794809.98	2123550.05	4986.34	4986.30	0.05	0.6
31004_stk	6794859.96	2123550.01	4987.58	4987.56	0.02	0.3
31005_stk	6794909.99	2123550.06	4988.87	4988.82	0.05	0.6
31006_stk	6794959.97	2123550.00	4990.15	4990.09	0.06	0.7
31007_stk	6795009.95	2123550.00	4991.38	4991.35	0.02	0.3
31008_stk	6795060.05	2123550.00	4992.63	4992.61	0.02	0.2
31009_stk	6795109.99	2123550.00	4993.89	4993.88	0.01	0.1
31010_stk	6795159.97	2123550.03	4995.19	4995.14	0.05	0.6
31011_stk	6795209.94	2123549.99	4996.45	4996.41	0.04	0.5
31012_stk	6795260.04	2123549.97	4997.70	4997.67	0.03	0.3
31013_stk	6795310.02	2123550.02	4998.96	4998.93	0.03	0.3
31014_stk	6795360.02	2123550.02	5000.21	5000.20	0.01	0.1
31015_stk	6795409.98	2123550.01	5001.59	5001.46	0.13	1.6
31016_stk	6795460.02	2123550.03	5002.79	5002.72	0.06	0.8
31017_stk	6795510.03	2123549.99	5004.09	5003.99	0.11	1.3
31018_stk	6795560.01	2123550.05	5005.29	5005.25	0.03	0.4
31019_stk	6795610.01	2123550.01	5004.59	5004.58	0.01	0.2
31020_stk	6795660.03	2123550.06	5003.67	5003.61	0.07	0.8
31021_stk	6795709.94	2123550.00	5002.72	5002.64	0.09	1.0
31022_stk	6795760.03	2123550.02	5001.80	5001.67	0.13	1.5
31023_stk	6795810.02	2123549.95	5000.75	5000.70	0.05	0.6
31024_stk	6795859.99	2123550.01	4999.74	4999.73	0.01	0.1
31025_stk	6795910.01	2123549.98	4998.79	4998.72	0.07	0.8
31026_stk	6795959.95	2123549.98	4997.74	4997.71	0.03	0.3
31027_stk	6796010.02	2123550.02	4996.76	4996.70	0.06	0.7
31028_stk	6796060.05	2123550.00	4995.72	4995.68	0.03	0.4
31029_stk	6794310.00	2123600.03	4973.82	4973.69	0.13	1.6
31030_stk	6794359.99	2123600.02	4975.09	4974.95	0.14	1.7
31031_stk	6794410.01	2123599.99	4976.29	4976.21	0.07	0.9
31032_stk	6794460.01	2123599.99	4977.63	4977.48	0.15	1.8
31033_stk	6794510.02	2123600.06	4978.87	4978.74	0.13	1.5
31034_stk	6794559.96	2123600.00	4980.15	4980.01	0.14	1.7
31035_stk	6794609.99	2123600.03	4981.43	4981.27	0.16	1.9
31036_stk	6794660.02	2123599.98	4982.70	4982.53	0.17	2.0
31037_stk	6794710.02	2123600.02	4983.88	4983.80	0.09	1.0
31038_stk	6794760.00	2123599.96	4985.22	4985.06	0.16	2.0
31039_stk	6794810.02	2123600.06	4986.33	4986.32	0.01	0.1
31040_stk	6794859.97	2123600.02	4987.64	4987.59	0.06	0.7
31041_stk	6794910.01	2123599.96	4988.88	4988.85	0.03	0.3
31042_stk	6794959.98	2123599.97	4990.17	4990.12	0.05	0.6
31043_stk	6795009.98	2123600.00	4991.42	4991.38	0.04	0.5
31044_stk	6795060.01	2123600.05	4992.70	4992.64	0.05	0.6
31045_stk	6795109.99	2123600.02	4993.99	4993.91	0.08	1.0
31046_stk	6795159.98	2123600.02	4995.22	4995.17	0.05	0.6
31047_stk	6795210.05	2123600.03	4996.51	4996.43	0.07	0.9
31048_stk	6795259.98	2123599.93	4997.74	4997.70	0.04	0.5
31049_stk	6795309.97	2123600.00	4998.97	4998.96	0.01	0.1

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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
31050_stk	6795359.94	2123600.01	5000.26	5000.23	0.04	0.4
31051_stk	6795410.01	2123600.01	5001.59	5001.49	0.10	1.2
31052_stk	6795460.02	2123599.97	5002.84	5002.75	0.09	1.1
31053_stk	6795510.03	2123600.03	5004.07	5003.99	0.09	1.0
31054_stk	6795560.02	2123599.99	5005.25	5005.21	0.04	0.4
31055_stk	6795610.02	2123599.96	5004.78	5004.77	0.01	0.1
31056_stk	6795660.01	2123600.04	5003.87	5003.75	0.12	1.4
31057_stk	6795709.99	2123599.97	5002.79	5002.74	0.05	0.6
31058_stk	6795759.96	2123600.01	5001.79	5001.73	0.06	0.8
31059_stk	6795809.99	2123599.99	5000.77	5000.72	0.06	0.7
31060_stk	6795859.96	2123599.96	4999.75	4999.70	0.05	0.6
31061_stk	6795910.00	2123599.99	4998.76	4998.69	0.07	0.8
31062_stk	6795960.01	2123600.02	4997.75	4997.68	0.07	0.8
31063_stk	6796010.05	2123600.01	4996.70	4996.67	0.03	0.4
31064_stk	6796060.04	2123600.03	4995.71	4995.65	0.06	0.7
31065_stk	6794309.98	2123649.99	4973.79	4973.71	0.07	0.9
31066_stk	6794360.03	2123650.06	4975.08	4974.98	0.10	1.2
31067_stk	6794409.99	2123649.99	4976.34	4976.24	0.10	1.2
31068_stk	6794459.98	2123650.03	4977.56	4977.51	0.05	0.6
31069_stk	6794509.98	2123650.01	4978.88	4978.77	0.11	1.3
31070_stk	6794559.99	2123649.99	4980.09	4980.03	0.06	0.7
31071_stk	6794610.01	2123649.96	4981.44	4981.30	0.15	1.8
31072_stk	6794660.05	2123650.02	4982.64	4982.56	0.08	0.9
31073_stk	6794709.95	2123650.03	4983.88	4983.82	0.06	0.7
31074_stk	6794759.96	2123649.99	4985.10	4985.09	0.01	0.2
31075_stk	6794810.02	2123649.99	4986.41	4986.35	0.06	0.7
31076_stk	6794860.03	2123650.07	4987.67	4987.62	0.05	0.6
31077_stk	6794909.99	2123649.99	4988.97	4988.88	0.09	1.0
31078_stk	6794960.03	2123650.02	4990.22	4990.14	0.08	0.9
31079_stk	6795009.98	2123650.01	4991.46	4991.41	0.06	0.7
31080_stk	6795059.99	2123650.00	4992.71	4992.67	0.04	0.4
31081_stk	6795110.01	2123650.05	4994.00	4993.90	0.09	1.1
31082_stk	6795160.00	2123649.99	4995.15	4995.13	0.02	0.3
31083_stk	6795210.01	2123649.97	4996.40	4996.35	0.05	0.5
31084_stk	6795260.05	2123650.00	4997.64	4997.58	0.06	0.8
31085_stk	6795310.02	2123650.00	4998.92	4998.80	0.11	1.4
31086_stk	6795360.01	2123650.03	5000.07	5000.03	0.04	0.5
31087_stk	6795410.01	2123650.03	5001.27	5001.25	0.01	0.1
31088_stk	6795459.98	2123650.04	5002.60	5002.48	0.12	1.4
31089_stk	6795509.94	2123649.96	5003.79	5003.70	0.09	1.1
31090_stk	6795559.97	2123650.03	5004.99	5004.93	0.06	0.7
31091_stk	6795610.03	2123650.04	5004.79	5004.74	0.05	0.6
31092_stk	6795660.00	2123650.05	5003.78	5003.72	0.06	0.6
31093_stk	6795710.03	2123650.00	5002.80	5002.71	0.09	1.1
31094_stk	6795759.98	2123650.03	5001.78	5001.70	0.08	1.0
31095_stk	6795810.02	2123650.00	5000.76	5000.69	0.07	0.9
31096_stk	6795859.99	2123649.97	4999.79	4999.67	0.12	1.5
31097_stk	6795910.03	2123650.03	4998.67	4998.66	0.01	0.1
31098_stk	6795960.05	2123649.97	4997.69	4997.65	0.04	0.5
31099_stk	6796009.96	2123649.98	4996.69	4996.64	0.05	0.6
31100_stk	6796059.98	2123650.02	4995.64	4995.62	0.01	0.1
31101_stk	6794309.97	2123699.95	4973.81	4973.74	0.06	0.8
31102_stk	6794360.07	2123699.95	4975.13	4975.01	0.12	1.5
31103_stk	6794410.03	2123700.03	4976.41	4976.27	0.14	1.7
31104_stk	6794460.02	2123700.02	4977.64	4977.53	0.11	1.3
31105_stk	6794509.97	2123700.03	4978.90	4978.80	0.10	1.2
31106_stk	6794560.02	2123699.95	4980.21	4980.06	0.15	1.8
31107_stk	6794609.98	2123699.97	4981.47	4981.33	0.15	1.8
31108_stk	6794660.00	2123700.02	4982.66	4982.59	0.07	0.8
31109_stk	6794710.06	2123700.00	4983.91	4983.82	0.09	1.1
31110_stk	6794760.00	2123700.03	4985.15	4985.05	0.10	1.2
31111_stk	6794810.00	2123700.05	4986.32	4986.27	0.04	0.5
31112_stk	6794859.98	2123700.02	4987.54	4987.50	0.05	0.6
31113_stk	6794909.99	2123700.04	4988.81	4988.72	0.09	1.0
31114_stk	6794960.00	2123699.95	4989.96	4989.95	0.01	0.1
31115_stk	6795010.02	2123699.96	4991.22	4991.17	0.05	0.5

Radon Barrier  
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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N			Date: 6/8/2023			
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
31116_stk	6795059.96	2123699.95	4992.43	4992.40	0.04	0.4
31117_stk	6795109.95	2123700.02	4993.66	4993.62	0.04	0.5
31118_stk	6795160.01	2123699.98	4994.90	4994.85	0.05	0.6
31119_stk	6795209.98	2123700.01	4996.08	4996.07	0.01	0.1
31120_stk	6795259.99	2123700.06	4997.40	4997.30	0.10	1.2
31121_stk	6795309.99	2123699.96	4998.57	4998.52	0.05	0.5
31122_stk	6795360.03	2123700.04	4999.76	4999.75	0.01	0.2
31123_stk	6795410.01	2123700.04	5001.04	5000.97	0.07	0.8
31124_stk	6795460.01	2123699.98	5002.26	5002.20	0.06	0.7
31125_stk	6795510.00	2123700.04	5003.44	5003.42	0.01	0.2
31126_stk	6795560.04	2123699.96	5004.72	5004.65	0.07	0.9
31127_stk	6795609.97	2123699.95	5004.72	5004.70	0.02	0.2
31128_stk	6795660.01	2123699.98	5003.75	5003.69	0.06	0.8
31129_stk	6795709.98	2123700.03	5002.70	5002.68	0.02	0.2
31130_stk	6795759.98	2123700.05	5001.69	5001.67	0.02	0.2
31131_stk	6795809.98	2123699.97	5000.69	5000.66	0.03	0.4
31132_stk	6795859.95	2123700.02	4999.70	4999.64	0.06	0.7
31133_stk	6795909.99	2123699.99	4998.64	4998.63	0.01	0.1
31134_stk	6795960.04	2123699.96	4997.67	4997.62	0.05	0.6
31135_stk	6796010.03	2123700.03	4996.72	4996.61	0.11	1.3
31136_stk	6796060.00	2123700.06	4995.85	4995.59	0.06	0.7
31137_stk	6796109.98	2123700.06	4994.71	4994.58	0.13	1.5
31138_stk	6794310.01	2123750.02	4973.84	4973.74	0.09	1.1
31139_stk	6794359.96	2123749.97	4974.98	4974.97	0.02	0.2
31140_stk	6794409.99	2123750.02	4976.29	4976.19	0.09	1.1
31141_stk	6794460.03	2123750.05	4977.56	4977.42	0.15	1.8
31142_stk	6794509.98	2123750.00	4978.73	4978.64	0.09	1.1
31143_stk	6794559.96	2123749.99	4979.96	4979.87	0.10	1.1
31144_stk	6794609.96	2123749.98	4981.17	4981.09	0.08	1.0
31145_stk	6794660.00	2123750.05	4982.38	4982.32	0.07	0.8
31146_stk	6794709.95	2123749.98	4983.67	4983.54	0.13	1.5
31147_stk	6794760.00	2123750.03	4984.90	4984.77	0.14	1.6
31148_stk	6794809.96	2123749.98	4986.04	4985.99	0.04	0.5
31149_stk	6794860.02	2123749.96	4987.26	4987.22	0.05	0.6
31150_stk	6794909.97	2123750.01	4988.50	4988.44	0.06	0.7
31151_stk	6794959.97	2123749.97	4989.75	4989.67	0.09	1.0
31152_stk	6795010.02	2123749.98	4990.98	4990.89	0.09	1.1
31153_stk	6795060.03	2123749.94	4992.13	4992.12	0.02	0.2
31154_stk	6795110.00	2123749.98	4993.39	4993.34	0.05	0.6
31155_stk	6795160.02	2123750.01	4994.59	4994.57	0.03	0.3
31156_stk	6795209.98	2123750.00	4995.81	4995.79	0.02	0.3
31157_stk	6795260.00	2123749.97	4997.14	4997.02	0.13	1.5
31158_stk	6795310.02	2123749.99	4998.28	4998.24	0.04	0.5
31159_stk	6795360.03	2123750.03	4999.54	4999.47	0.07	0.9
31160_stk	6795410.04	2123750.04	5000.71	5000.69	0.02	0.2
31161_stk	6795460.03	2123749.96	5001.98	5001.92	0.06	0.7
31162_stk	6795510.03	2123749.97	5003.21	5003.14	0.07	0.9
31163_stk	6795560.01	2123749.96	5004.46	5004.37	0.10	1.2
31164_stk	6795610.02	2123750.02	5004.68	5004.67	0.02	0.2
31165_stk	6795659.97	2123750.03	5003.67	5003.66	0.01	0.1
31166_stk	6795710.05	2123749.97	5002.68	5002.65	0.03	0.4
31167_stk	6795759.94	2123749.98	5001.74	5001.64	0.10	1.2
31168_stk	6795810.02	2123749.96	5000.75	5000.63	0.13	1.5
31169_stk	6795859.96	2123750.03	4999.68	4999.61	0.06	0.8
31170_stk	6795910.02	2123750.02	4998.69	4998.60	0.09	1.0
31171_stk	6795960.03	2123749.97	4997.67	4997.59	0.09	1.0
31172_stk	6796010.02	2123750.06	4996.69	4996.58	0.11	1.3
31173_stk	6796060.01	2123750.03	4995.67	4995.56	0.11	1.3
31174_stk	6796109.99	2123750.00	4994.60	4994.55	0.05	0.6
31175_stk	6794310.04	2123800.00	4973.52	4973.46	0.06	0.7
31176_stk	6794360.01	2123799.97	4974.77	4974.68	0.08	1.0
31177_stk	6794410.02	2123799.93	4976.06	4975.91	0.15	1.8
31178_stk	6794459.95	2123799.98	4977.18	4977.13	0.05	0.6
31179_stk	6794509.96	2123800.02	4978.47	4978.36	0.11	1.4
31180_stk	6794560.03	2123800.06	4979.74	4979.58	0.16	1.9
31181_stk	6794610.02	2123799.98	4980.90	4980.81	0.09	1.1

Radon Barrier  
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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
31182_stk	6794660.02	2123800.04	4982.06	4982.03	0.03	0.3
31183_stk	6794710.00	2123799.99	4983.37	4983.26	0.11	1.3
31184_stk	6794759.99	2123799.99	4984.63	4984.48	0.15	1.8
31185_stk	6794810.05	2123800.01	4985.82	4985.71	0.11	1.3
31186_stk	6794860.04	2123800.05	4986.95	4986.93	0.01	0.1
31187_stk	6794909.96	2123800.02	4988.29	4988.16	0.13	1.6
31188_stk	6794960.03	2123799.99	4989.40	4989.38	0.02	0.2
31189_stk	6795009.98	2123799.99	4990.76	4990.61	0.15	1.9
31190_stk	6795059.97	2123800.03	4991.89	4991.83	0.05	0.6
31191_stk	6795109.97	2123800.03	4993.10	4993.06	0.04	0.5
31192_stk	6795160.02	2123799.98	4994.38	4994.28	0.10	1.2
31193_stk	6795209.96	2123800.01	4995.60	4995.51	0.09	1.1
31194_stk	6795260.01	2123800.00	4996.86	4996.73	0.13	1.6
31195_stk	6795309.96	2123800.03	4998.00	4997.96	0.04	0.5
31196_stk	6795359.97	2123800.03	4999.22	4999.18	0.04	0.5
31197_stk	6795410.02	2123799.98	5000.43	5000.41	0.02	0.3
31198_stk	6795459.97	2123800.01	5001.65	5001.63	0.02	0.3
31199_stk	6795510.04	2123800.05	5002.90	5002.86	0.05	0.6
31200_stk	6795560.00	2123799.98	5004.17	5004.08	0.09	1.1
31201_stk	6795610.02	2123799.99	5004.74	5004.64	0.11	1.3
31202_stk	6795660.05	2123799.99	5003.72	5003.63	0.09	1.1
31203_stk	6795710.01	2123800.04	5002.64	5002.62	0.02	0.2
31204_stk	6795760.02	2123800.01	5001.67	5001.61	0.06	0.7
31205_stk	6795809.96	2123799.99	5000.61	5000.60	0.01	0.1
31206_stk	6795860.06	2123799.98	4999.63	4999.58	0.05	0.6
31207_stk	6795909.97	2123799.95	4998.62	4998.57	0.05	0.6
31208_stk	6795960.03	2123799.97	4997.66	4997.56	0.11	1.3
31209_stk	6796010.05	2123800.03	4996.63	4996.55	0.08	1.0
31210_stk	6796060.03	2123799.99	4995.59	4995.53	0.05	0.6
31211_stk	6796109.99	2123800.05	4994.61	4994.52	0.09	1.1
31212_stk	6794310.03	2123849.97	4973.22	4973.18	0.04	0.5
31213_stk	6794359.99	2123850.03	4974.49	4974.40	0.09	1.1
31214_stk	6794410.05	2123850.01	4975.75	4975.63	0.12	1.4
31215_stk	6794459.96	2123850.01	4976.90	4976.85	0.05	0.6
31216_stk	6794510.02	2123850.01	4978.11	4978.08	0.04	0.4
31217_stk	6794560.03	2123850.02	4979.34	4979.30	0.04	0.5
31218_stk	6794610.04	2123850.02	4980.60	4980.53	0.07	0.8
31219_stk	6794659.99	2123850.04	4981.83	4981.75	0.08	0.9
31220_stk	6794710.00	2123850.01	4983.13	4982.98	0.15	1.8
31221_stk	6794759.97	2123850.06	4984.36	4984.20	0.16	1.9
31222_stk	6794810.00	2123849.98	4985.55	4985.43	0.12	1.5
31223_stk	6794859.98	2123850.03	4986.67	4986.65	0.01	0.2
31224_stk	6794910.05	2123849.99	4988.00	4987.88	0.12	1.4
31225_stk	6794960.01	2123850.04	4989.19	4989.10	0.09	1.0
31226_stk	6795010.04	2123849.99	4990.41	4990.33	0.09	1.0
31227_stk	6795060.04	2123850.02	4991.64	4991.55	0.09	1.1
31228_stk	6795109.97	2123850.04	4992.80	4992.78	0.02	0.3
31229_stk	6795159.99	2123850.01	4994.02	4994.00	0.02	0.3
31230_stk	6795209.98	2123850.00	4995.25	4995.23	0.02	0.3
31231_stk	6795260.04	2123850.00	4996.49	4996.45	0.04	0.5
31232_stk	6795310.00	2123849.99	4997.70	4997.68	0.02	0.2
31233_stk	6795360.00	2123849.98	4999.02	4998.90	0.12	1.4
31234_stk	6795410.05	2123849.98	5000.23	5000.13	0.11	1.3
31235_stk	6795460.01	2123850.00	5001.40	5001.35	0.05	0.6
31236_stk	6795510.04	2123850.01	5002.66	5002.58	0.08	1.0
31237_stk	6795560.00	2123849.99	5003.92	5003.80	0.12	1.5
31238_stk	6795610.00	2123849.95	5004.64	5004.61	0.03	0.4
31239_stk	6795660.00	2123849.95	5003.63	5003.60	0.03	0.4
31240_stk	6795710.01	2123850.03	5002.65	5002.59	0.07	0.8
31241_stk	6795760.01	2123849.99	5001.68	5001.58	0.11	1.3
31242_stk	6795810.04	2123850.03	5000.61	5000.56	0.05	0.6
31243_stk	6795859.98	2123850.03	4999.64	4999.55	0.08	1.0
31244_stk	6795910.03	2123850.05	4998.65	4998.54	0.11	1.4
31245_stk	6795960.02	2123849.97	4997.61	4997.53	0.08	0.9
31246_stk	6796009.94	2123850.03	4996.58	4996.52	0.07	0.8
31247_stk	6796060.00	2123850.04	4995.57	4995.50	0.07	0.8

Radon Barrier  
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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
31248_stk	6796110.03	2123849.96	4994.52	4994.49	0.03	0.3
31249_stk	6794309.95	2123900.00	4972.91	4972.89	0.02	0.2
31250_stk	6794360.05	2123900.06	4974.15	4974.12	0.03	0.3
31251_stk	6794409.98	2123899.98	4975.43	4975.35	0.08	1.0
31252_stk	6794460.03	2123900.02	4976.71	4976.57	0.14	1.7
31253_stk	6794510.02	2123900.03	4977.86	4977.79	0.06	0.8
31254_stk	6794560.02	2123899.97	4979.11	4979.02	0.09	1.0
31255_stk	6794609.95	2123900.01	4980.39	4980.24	0.15	1.8
31256_stk	6794660.06	2123900.04	4981.57	4981.47	0.10	1.2
31257_stk	6794710.00	2123899.97	4982.70	4982.69	0.00	0.1
31258_stk	6794759.96	2123900.02	4983.94	4983.92	0.02	0.2
31259_stk	6794810.00	2123900.05	4985.24	4985.14	0.10	1.2
31260_stk	6794860.00	2123899.96	4986.40	4986.37	0.03	0.4
31261_stk	6794909.95	2123900.04	4987.72	4987.59	0.13	1.5
31262_stk	6794959.98	2123900.03	4988.84	4988.82	0.02	0.2
31263_stk	6795009.98	2123899.96	4990.13	4990.04	0.08	1.0
31264_stk	6795060.03	2123899.94	4991.39	4991.27	0.12	1.5
31265_stk	6795110.06	2123900.04	4992.58	4992.49	0.08	1.0
31266_stk	6795160.02	2123900.00	4993.82	4993.72	0.10	1.2
31267_stk	6795209.99	2123900.00	4994.99	4994.94	0.05	0.6
31268_stk	6795260.04	2123900.02	4996.24	4996.17	0.07	0.9
31269_stk	6795310.07	2123900.00	4997.41	4997.39	0.02	0.2
31270_stk	6795359.95	2123900.04	4998.64	4998.62	0.02	0.3
31271_stk	6795409.96	2123900.05	4999.92	4999.84	0.08	0.9
31272_stk	6795460.01	2123899.99	5001.12	5001.07	0.06	0.7
31273_stk	6795509.99	2123899.99	5002.34	5002.29	0.04	0.5
31274_stk	6795559.97	2123899.95	5003.55	5003.52	0.03	0.4
31275_stk	6795610.00	2123900.03	5004.61	5004.58	0.03	0.4
31276_stk	6795660.01	2123900.01	5003.60	5003.57	0.03	0.3
31277_stk	6795709.96	2123900.05	5002.57	5002.56	0.01	0.2
31278_stk	6795760.03	2123900.03	5001.59	5001.55	0.04	0.5
31279_stk	6795809.95	2123899.99	5000.60	5000.53	0.06	0.8
31280_stk	6795860.00	2123899.94	4999.58	4999.52	0.06	0.7
31281_stk	6795909.98	2123900.03	4998.53	4998.51	0.02	0.3
31282_stk	6795960.04	2123900.04	4997.51	4997.50	0.02	0.2
31283_stk	6796009.97	2123900.04	4996.50	4996.49	0.02	0.2
31284_stk	6796060.00	2123900.03	4995.49	4995.47	0.02	0.2
31285_stk	6796110.02	2123900.01	4994.48	4994.46	0.02	0.3
31286_stk	6794310.01	2123950.02	4972.65	4972.61	0.04	0.5
31287_stk	6794359.94	2123950.04	4973.94	4973.84	0.10	1.3
31288_stk	6794410.00	2123950.01	4975.14	4975.06	0.08	0.9
31289_stk	6794460.03	2123949.99	4976.33	4976.29	0.05	0.5
31290_stk	6794510.01	2123949.95	4977.67	4977.51	0.16	1.9
31291_stk	6794560.00	2123950.02	4978.78	4978.74	0.04	0.5
31292_stk	6794610.00	2123949.94	4979.97	4979.96	0.01	0.1
31293_stk	6794659.98	2123950.01	4981.33	4981.19	0.14	1.7
31294_stk	6794709.99	2123950.04	4982.57	4982.41	0.16	1.9
31295_stk	6794759.99	2123950.02	4983.80	4983.64	0.17	2.0
31296_stk	6794810.01	2123950.02	4984.98	4984.86	0.12	1.4
31297_stk	6794860.06	2123950.00	4986.16	4986.09	0.07	0.9
31298_stk	6794910.05	2123950.01	4987.48	4987.31	0.17	2.0
31299_stk	6794960.01	2123950.03	4988.65	4988.54	0.12	1.4
31300_stk	6795010.02	2123949.98	4989.89	4989.76	0.13	1.6
31301_stk	6795060.05	2123949.97	4991.13	4990.99	0.14	1.7
31302_stk	6795110.00	2123950.04	4992.38	4992.21	0.17	2.0
31303_stk	6795160.01	2123950.00	4993.50	4993.44	0.07	0.8
31304_stk	6795210.03	2123949.99	4994.83	4994.66	0.17	2.0
31305_stk	6795259.98	2123950.02	4995.98	4995.89	0.09	1.1
31306_stk	6795310.04	2123949.98	4997.19	4997.11	0.08	0.9
31307_stk	6795360.00	2123949.98	4998.41	4998.34	0.08	0.9
31308_stk	6795410.01	2123950.03	4999.61	4999.56	0.05	0.5
31309_stk	6795459.94	2123949.98	5000.83	5000.79	0.05	0.5
31310_stk	6795510.05	2123949.99	5002.05	5002.01	0.04	0.5
31311_stk	6795560.01	2123950.03	5003.26	5003.24	0.03	0.3
31312_stk	6795610.04	2123950.04	5004.51	5004.46	0.04	0.5
31313_stk	6795660.00	2123950.05	5003.59	5003.54	0.05	0.6

Radon Barrier  
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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
31314_stk	6795709.99	2123949.99	5002.60	5002.53	0.07	0.8
31315_stk	6795760.02	2123950.00	5001.53	5001.52	0.02	0.2
31316_stk	6795810.01	2123949.99	5000.55	5000.50	0.05	0.5
31317_stk	6795859.95	2123950.03	4999.55	4999.49	0.06	0.7
31318_stk	6795909.97	2123950.05	4998.52	4998.48	0.05	0.5
31319_stk	6795959.97	2123950.00	4997.54	4997.47	0.07	0.9
31320_stk	6796010.00	2123950.01	4996.52	4996.45	0.07	0.8
31321_stk	6796059.97	2123950.03	4995.53	4995.44	0.09	1.1
31322_stk	6796109.94	2123950.01	4994.45	4994.43	0.02	0.2
31323_stk	6794310.01	2123999.95	4972.48	4972.33	0.15	1.8
31324_stk	6794360.02	2123999.99	4973.69	4973.56	0.14	1.6
31325_stk	6794409.99	2124000.05	4974.81	4974.78	0.03	0.4
31326_stk	6794459.99	2124000.02	4976.08	4976.01	0.07	0.9
31327_stk	6794510.02	2123999.94	4977.29	4977.23	0.06	0.7
31328_stk	6794560.00	2124000.02	4978.50	4978.46	0.05	0.6
31329_stk	6794609.98	2123999.96	4979.71	4979.68	0.03	0.4
31330_stk	6794659.96	2123999.99	4980.96	4980.91	0.06	0.7
31331_stk	6794709.98	2124000.01	4982.29	4982.13	0.16	1.9
31332_stk	6794760.00	2124000.01	4983.38	4983.36	0.02	0.3
31333_stk	6794810.02	2124000.03	4984.73	4984.58	0.15	1.8
31334_stk	6794860.01	2124000.01	4985.84	4985.81	0.04	0.5
31335_stk	6794909.98	2124000.01	4987.16	4987.03	0.13	1.6
31336_stk	6794960.00	2124000.00	4988.38	4988.25	0.12	1.5
31337_stk	6795010.01	2123999.95	4989.56	4989.48	0.09	1.0
31338_stk	6795059.99	2123999.97	4990.84	4990.70	0.13	1.6
31339_stk	6795110.01	2123999.99	4992.09	4991.93	0.16	1.9
31340_stk	6795160.03	2124000.00	4993.21	4993.15	0.05	0.6
31341_stk	6795209.98	2124000.02	4994.53	4994.38	0.15	1.9
31342_stk	6795259.99	2123999.98	4995.73	4995.60	0.13	1.5
31343_stk	6795310.02	2123999.97	4996.92	4996.83	0.09	1.1
31344_stk	6795359.99	2123999.98	4998.19	4998.05	0.13	1.6
31345_stk	6795409.99	2123999.98	4999.37	4999.28	0.09	1.0
31346_stk	6795459.97	2124000.01	5000.55	5000.50	0.05	0.5
31347_stk	6795510.00	2124000.03	5001.75	5001.73	0.02	0.3
31348_stk	6795560.02	2123999.95	5003.01	5002.95	0.05	0.6
31349_stk	6795609.99	2124000.03	5004.24	5004.18	0.06	0.7
31350_stk	6795659.99	2124000.03	5003.59	5003.51	0.08	0.9
31351_stk	6795709.97	2124000.00	5002.55	5002.50	0.05	0.6
31352_stk	6795760.03	2124000.01	5001.51	5001.49	0.03	0.3
31353_stk	6795810.01	2124000.01	5000.52	5000.47	0.05	0.6
31354_stk	6795859.99	2123999.99	4999.52	4999.46	0.06	0.7
31355_stk	6795909.95	2123999.97	4998.53	4998.45	0.08	1.0
31356_stk	6795960.03	2124000.04	4997.51	4997.44	0.07	0.9
31357_stk	6796009.99	2123999.96	4996.51	4996.42	0.08	1.0
31358_stk	6796059.95	2124000.01	4995.43	4995.41	0.01	0.2
31359_stk	6796110.00	2124000.02	4994.41	4994.40	0.01	0.1
31360_stk	6794359.97	2124050.02	4973.43	4973.27	0.16	1.9
31361_stk	6794409.96	2124049.99	4974.63	4974.50	0.13	1.5
31362_stk	6794460.00	2124050.05	4975.77	4975.72	0.04	0.5
31363_stk	6794510.05	2124050.05	4977.10	4976.95	0.15	1.8
31364_stk	6794559.99	2124049.96	4978.26	4978.17	0.08	1.0
31365_stk	6794609.96	2124050.03	4979.42	4979.40	0.02	0.3
31366_stk	6794659.97	2124050.01	4980.66	4980.62	0.04	0.5
31367_stk	6794709.99	2124049.95	4981.93	4981.85	0.08	1.0
31368_stk	6794760.02	2124050.07	4983.24	4983.07	0.16	2.0
31369_stk	6794810.02	2124050.05	4984.46	4984.30	0.16	1.9
31370_stk	6794860.00	2124050.02	4985.68	4985.52	0.16	1.9
31371_stk	6794910.00	2124049.95	4986.86	4986.75	0.12	1.4
31372_stk	6794960.02	2124050.00	4988.13	4987.97	0.16	1.9
31373_stk	6795010.01	2124049.99	4989.24	4989.20	0.04	0.5
31374_stk	6795059.95	2124050.04	4990.48	4990.42	0.06	0.7
31375_stk	6795109.98	2124050.06	4991.68	4991.65	0.03	0.4
31376_stk	6795159.96	2124049.98	4992.89	4992.87	0.02	0.2
31377_stk	6795209.95	2124050.04	4994.24	4994.10	0.15	1.8
31378_stk	6795260.01	2124050.02	4995.37	4995.32	0.04	0.5
31379_stk	6795310.05	2124050.02	4996.56	4996.55	0.02	0.2

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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
31380_stk	6795360.05	2124050.03	4997.86	4997.77	0.09	1.1
31381_stk	6795410.01	2124049.98	4999.08	4999.00	0.08	1.0
31382_stk	6795460.04	2124050.01	5000.35	5000.22	0.12	1.5
31383_stk	6795510.02	2124049.95	5001.57	5001.45	0.12	1.5
31384_stk	6795559.97	2124049.95	5002.81	5002.67	0.14	1.7
31385_stk	6795609.99	2124049.99	5003.96	5003.90	0.07	0.8
31386_stk	6795660.04	2124050.02	5003.57	5003.48	0.10	1.2
31387_stk	6795709.99	2124049.99	5002.51	5002.47	0.04	0.5
31388_stk	6795760.00	2124049.96	5001.58	5001.46	0.13	1.5
31389_stk	6795809.93	2124050.01	5000.48	5000.44	0.04	0.4
31390_stk	6795860.03	2124049.98	4999.45	4999.43	0.01	0.2
31391_stk	6795910.00	2124050.03	4998.43	4998.42	0.01	0.1
31392_stk	6795960.01	2124049.97	4997.44	4997.41	0.03	0.4
31393_stk	6796009.97	2124049.94	4996.44	4996.39	0.04	0.5
31394_stk	6796060.02	2124050.05	4995.39	4995.38	0.01	0.1
31395_stk	6796109.93	2124049.99	4994.41	4994.37	0.04	0.5
31396_stk	6794359.97	2124100.05	4973.03	4972.99	0.04	0.5
31397_stk	6794409.95	2124100.01	4974.28	4974.22	0.07	0.8
31398_stk	6794459.99	2124099.99	4975.59	4975.44	0.15	1.7
31399_stk	6794509.99	2124099.96	4976.81	4976.67	0.14	1.7
31400_stk	6794559.97	2124100.07	4978.02	4977.89	0.13	1.5
31401_stk	6794609.97	2124099.98	4979.20	4979.12	0.09	1.0
31402_stk	6794659.96	2124100.04	4980.51	4980.34	0.17	2.0
31403_stk	6794710.01	2124100.01	4981.70	4981.57	0.14	1.7
31404_stk	6794760.00	2124099.96	4982.93	4982.79	0.14	1.7
31405_stk	6794810.02	2124100.04	4984.12	4984.02	0.10	1.2
31406_stk	6794860.02	2124099.97	4985.29	4985.24	0.05	0.6
31407_stk	6794910.02	2124100.00	4986.54	4986.47	0.07	0.9
31408_stk	6794959.96	2124099.97	4987.85	4987.69	0.16	1.9
31409_stk	6795010.03	2124100.04	4989.01	4988.92	0.09	1.1
31410_stk	6795059.99	2124100.02	4990.20	4990.14	0.06	0.8
31411_stk	6795109.97	2124099.96	4991.43	4991.37	0.06	0.8
31412_stk	6795159.98	2124100.04	4992.72	4992.59	0.13	1.5
31413_stk	6795209.98	2124100.03	4993.96	4993.82	0.14	1.7
31414_stk	6795259.98	2124099.99	4995.17	4995.04	0.13	1.6
31415_stk	6795310.01	2124100.02	4996.35	4996.26	0.08	1.0
31416_stk	6795360.04	2124100.02	4997.56	4997.49	0.07	0.9
31417_stk	6795410.04	2124099.99	4998.73	4998.71	0.02	0.2
31418_stk	6795460.06	2124099.99	5000.03	4999.94	0.09	1.1
31419_stk	6795509.99	2124100.03	5001.32	5001.16	0.15	1.8
31420_stk	6795559.99	2124099.97	5002.43	5002.39	0.04	0.5
31421_stk	6795610.01	2124100.02	5003.74	5003.62	0.12	1.5
31422_stk	6795659.99	2124100.04	5003.58	5003.45	0.14	1.7
31423_stk	6795710.03	2124100.06	5002.59	5002.44	0.15	1.8
31424_stk	6795760.07	2124099.99	5001.44	5001.43	0.02	0.2
31425_stk	6795810.04	2124100.03	5000.44	5000.41	0.03	0.3
31426_stk	6795860.02	2124100.01	4999.47	4999.40	0.07	0.9
31427_stk	6795910.05	2124100.01	4998.40	4998.39	0.01	0.2
31428_stk	6795960.04	2124099.94	4997.46	4997.38	0.08	1.0
31429_stk	6796009.97	2124100.00	4996.40	4996.36	0.04	0.5
31430_stk	6796059.99	2124100.01	4995.50	4995.35	0.15	1.8
31431_stk	6796109.98	2124100.03	4994.50	4994.34	0.16	1.9
31442_stk	6794860.01	2124150.02	4985.10	4984.96	0.14	1.7
31443_stk	6794910.01	2124150.03	4986.33	4986.18	0.14	1.7
31444_stk	6794960.03	2124149.96	4987.44	4987.41	0.03	0.4
31445_stk	6795010.05	2124149.98	4988.68	4988.63	0.05	0.6
31446_stk	6795060.00	2124149.97	4989.92	4989.86	0.06	0.8
31447_stk	6795109.98	2124149.98	4991.13	4991.08	0.05	0.5
31448_stk	6795160.01	2124150.00	4992.38	4992.31	0.07	0.9
31449_stk	6795210.01	2124149.99	4993.63	4993.53	0.10	1.2
31450_stk	6795260.04	2124150.01	4994.92	4994.76	0.16	2.0
31451_stk	6795310.00	2124150.06	4996.10	4995.98	0.11	1.4
31452_stk	6795359.98	2124150.01	4997.35	4997.21	0.14	1.7
31453_stk	6795410.03	2124149.96	4998.58	4998.43	0.15	1.8
31454_stk	6795460.03	2124149.98	4999.71	4999.66	0.05	0.6
31455_stk	6795509.99	2124150.02	5001.05	5000.88	0.16	2.0

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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
31456_stk	6795560.01	2124150.00	5002.26	5002.11	0.15	1.8
31457_stk	6795609.99	2124149.96	5003.45	5003.33	0.11	1.4
31458_stk	6795660.04	2124149.96	5003.44	5003.41	0.03	0.3
31459_stk	6795710.05	2124150.05	5002.49	5002.41	0.08	1.0
31460_stk	6795759.98	2124149.98	5001.56	5001.40	0.16	2.0
31461_stk	6795810.04	2124149.97	5000.55	5000.38	0.17	2.0
31462_stk	6795859.98	2124150.03	4999.51	4999.37	0.14	1.7
31463_stk	6795910.04	2124149.97	4998.43	4998.36	0.07	0.9
31464_stk	6795960.01	2124149.95	4997.51	4997.35	0.17	2.0
31465_stk	6796010.08	2124150.00	4996.46	4996.33	0.13	1.5
31466_stk	6796060.06	2124149.99	4995.42	4995.32	0.10	1.2
31467_stk	6796110.01	2124150.02	4994.46	4994.31	0.15	1.8
31468_stk	6796160.00	2124149.96	4993.38	4993.30	0.09	1.1
31481_stk	6794959.97	2124199.96	4987.18	4987.13	0.05	0.6
31482_stk	6795010.03	2124199.97	4988.40	4988.35	0.05	0.6
31483_stk	6795060.04	2124199.97	4989.65	4989.58	0.07	0.9
31484_stk	6795109.98	2124200.02	4990.90	4990.80	0.10	1.2
31485_stk	6795160.03	2124199.99	4992.08	4992.03	0.06	0.7
31486_stk	6795210.03	2124200.00	4993.36	4993.25	0.11	1.3
31487_stk	6795260.03	2124199.98	4994.60	4994.48	0.13	1.5
31488_stk	6795310.04	2124199.99	4995.73	4995.70	0.03	0.4
31489_stk	6795360.06	2124200.01	4997.02	4996.93	0.09	1.1
31490_stk	6795410.01	2124200.05	4998.27	4998.15	0.12	1.5
31491_stk	6795460.01	2124199.99	4999.51	4999.38	0.13	1.6
31492_stk	6795509.98	2124200.00	5000.72	5000.60	0.12	1.5
31493_stk	6795559.97	2124199.94	5001.98	5001.83	0.15	1.8
31494_stk	6795609.97	2124200.00	5003.12	5003.05	0.07	0.8
31495_stk	6795660.00	2124199.99	5003.40	5003.38	0.02	0.2
31496_stk	6795709.99	2124199.99	5002.51	5002.37	0.14	1.7
31497_stk	6795760.04	2124200.03	5001.51	5001.36	0.15	1.8
31498_stk	6795809.95	2124199.98	5000.47	5000.35	0.12	1.4
31499_stk	6795859.98	2124199.99	4999.46	4999.34	0.12	1.4
31500_stk	6795909.99	2124199.97	4998.44	4998.33	0.11	1.3
31501_stk	6795959.95	2124199.96	4997.36	4997.32	0.04	0.5
31502_stk	6796010.01	2124200.03	4996.42	4996.30	0.12	1.4
31503_stk	6796060.01	2124200.02	4995.32	4995.29	0.03	0.3
31504_stk	6796109.93	2124200.02	4994.32	4994.28	0.04	0.5
31505_stk	6796160.00	2124199.97	4993.38	4993.27	0.12	1.4
31519_stk	6795010.01	2124249.95	4988.11	4988.07	0.04	0.5
31520_stk	6795059.93	2124250.04	4989.34	4989.29	0.05	0.6
31521_stk	6795109.96	2124250.01	4990.57	4990.52	0.05	0.6
31522_stk	6795159.96	2124250.01	4991.80	4991.74	0.05	0.7
31523_stk	6795209.96	2124250.04	4993.04	4992.97	0.07	0.8
31524_stk	6795209.95	2124250.07	4993.04	4992.97	0.07	0.8
31525_stk	6795260.01	2124250.05	4994.29	4994.19	0.10	1.2
31526_stk	6795309.97	2124249.96	4995.52	4995.42	0.10	1.2
31527_stk	6795359.99	2124249.99	4996.77	4996.64	0.13	1.5
31528_stk	6795410.01	2124250.01	4998.04	4997.87	0.17	2.0
31529_stk	6795459.98	2124249.99	4999.19	4999.09	0.09	1.1
31530_stk	6795509.99	2124250.02	5000.49	5000.32	0.17	2.0
31531_stk	6795560.04	2124250.01	5001.67	5001.54	0.12	1.5
31532_stk	6795660.00	2124250.03	5003.51	5003.35	0.16	1.9
31533_stk	6795709.99	2124249.94	5002.43	5002.34	0.08	1.0
31534_stk	6795760.03	2124249.96	5001.50	5001.33	0.17	2.0
31535_stk	6795810.02	2124250.00	5000.48	5000.32	0.16	1.9
31536_stk	6795860.03	2124250.03	4999.41	4999.31	0.10	1.2
31537_stk	6795910.02	2124250.01	4998.38	4998.30	0.08	0.9
31538_stk	6795959.96	2124249.97	4997.36	4997.29	0.07	0.9
31539_stk	6796010.05	2124250.01	4996.40	4996.27	0.13	1.5
31540_stk	6796059.95	2124250.03	4995.38	4995.26	0.12	1.4
31541_stk	6796110.01	2124250.05	4994.34	4994.25	0.09	1.1
31542_stk	6796159.98	2124250.04	4993.31	4993.24	0.07	0.9
31543_stk	6795610.01	2124249.98	5002.92	5002.77	0.15	1.8
31557_stk	6795060.04	2124300.00	4989.10	4989.01	0.09	1.1
31558_stk	6795109.98	2124300.01	4990.29	4990.24	0.06	0.7
31559_stk	6795160.05	2124300.05	4991.50	4991.46	0.04	0.5

Radon Barrier  
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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
31560_stk	6795210.03	2124300.01	4992.80	4992.69	0.11	1.4
31561_stk	6795260.03	2124299.95	4993.97	4993.91	0.05	0.6
31562_stk	6795310.04	2124300.05	4995.23	4995.14	0.09	1.1
31563_stk	6795359.97	2124300.04	4996.45	4996.36	0.09	1.0
31564_stk	6795410.03	2124299.99	4997.61	4997.59	0.02	0.3
31565_stk	6795460.05	2124300.02	4998.95	4998.81	0.14	1.7
31566_stk	6795510.07	2124300.00	5000.15	5000.04	0.11	1.3
31567_stk	6795560.00	2124299.95	5001.33	5001.26	0.06	0.8
31568_stk	6795610.01	2124299.97	5002.58	5002.49	0.09	1.1
31569_stk	6795660.02	2124299.93	5003.45	5003.32	0.13	1.6
31570_stk	6795709.94	2124299.98	5002.48	5002.31	0.17	2.0
31571_stk	6795759.95	2124300.01	5001.43	5001.30	0.12	1.5
31572_stk	6795810.01	2124299.94	5000.42	5000.29	0.13	1.5
31573_stk	6795860.01	2124299.97	4999.43	4999.28	0.15	1.8
31574_stk	6795910.00	2124300.06	4998.42	4998.27	0.16	1.9
31575_stk	6795960.02	2124300.05	4997.39	4997.26	0.14	1.6
31576_stk	6796009.99	2124299.99	4996.30	4996.24	0.05	0.7
31577_stk	6796059.98	2124300.07	4995.37	4995.23	0.14	1.7
31578_stk	6796110.03	2124300.00	4994.26	4994.22	0.04	0.5
31579_stk	6796160.00	2124300.01	4993.29	4993.21	0.08	1.0
31594_stk	6795060.01	2124349.97	4988.78	4988.73	0.05	0.6
31595_stk	6795110.05	2124350.00	4990.02	4989.95	0.06	0.8
31596_stk	6795160.03	2124350.02	4991.25	4991.18	0.07	0.9
31597_stk	6795210.02	2124350.02	4992.48	4992.40	0.07	0.9
31598_stk	6795260.04	2124350.05	4993.63	4993.63	0.00	0.0
31599_stk	6795310.00	2124350.02	4994.93	4994.85	0.07	0.9
31600_stk	6795360.03	2124350.04	4996.19	4996.08	0.11	1.3
31601_stk	6795410.01	2124350.01	4997.32	4997.30	0.02	0.2
31602_stk	6795460.03	2124350.02	4998.62	4998.53	0.09	1.1
31603_stk	6795510.03	2124350.01	4999.90	4999.75	0.15	1.7
31604_stk	6795560.02	2124349.95	5001.05	5000.98	0.07	0.8
31605_stk	6795610.03	2124350.01	5002.35	5002.21	0.14	1.7
31606_stk	6795659.94	2124350.02	5003.44	5003.29	0.16	1.9
31607_stk	6795710.05	2124350.00	5002.34	5002.28	0.06	0.7
31608_stk	6795760.05	2124350.02	5001.40	5001.27	0.13	1.5
31609_stk	6795810.04	2124350.01	5000.36	5000.26	0.10	1.2
31610_stk	6795860.03	2124350.04	4999.27	4999.25	0.02	0.2
31611_stk	6795910.03	2124349.99	4998.34	4998.24	0.10	1.3
31612_stk	6795959.99	2124349.97	4997.27	4997.23	0.04	0.5
31613_stk	6796010.03	2124350.02	4996.31	4996.21	0.09	1.1
31614_stk	6796059.99	2124350.00	4995.24	4995.20	0.04	0.5
31615_stk	6796110.05	2124350.05	4994.32	4994.19	0.13	1.6
31616_stk	6796160.01	2124350.05	4993.34	4993.18	0.16	2.0
31632_stk	6795110.04	2124399.99	4989.74	4989.67	0.06	0.8
31633_stk	6795159.96	2124400.00	4990.94	4990.90	0.05	0.6
31634_stk	6795210.03	2124400.01	4992.19	4992.12	0.07	0.8
31635_stk	6795260.01	2124399.98	4993.44	4993.35	0.09	1.1
31636_stk	6795309.99	2124399.99	4994.64	4994.57	0.07	0.8
31637_stk	6795360.00	2124400.01	4995.85	4995.80	0.06	0.7
31638_stk	6795409.96	2124399.96	4997.06	4997.02	0.04	0.4
31639_stk	6795460.01	2124399.97	4998.33	4998.25	0.08	0.9
31640_stk	6795509.94	2124399.97	4999.56	4999.47	0.09	1.1
31641_stk	6795560.00	2124400.02	5000.77	5000.70	0.07	0.9
31642_stk	6795609.97	2124400.02	5001.98	5001.92	0.06	0.7
31643_stk	6795660.00	2124400.02	5003.23	5003.15	0.08	0.9
31644_stk	6795709.97	2124399.99	5002.38	5002.25	0.13	1.5
31645_stk	6795760.01	2124400.04	5001.39	5001.24	0.15	1.8
31646_stk	6795809.99	2124400.01	5000.33	5000.23	0.10	1.2
31647_stk	6795860.01	2124400.06	4999.38	4999.22	0.16	1.9
31648_stk	6795910.01	2124400.03	4998.36	4998.21	0.15	1.8
31649_stk	6795960.04	2124399.99	4997.34	4997.19	0.14	1.7
31650_stk	6796010.03	2124399.96	4996.28	4996.18	0.10	1.2
31651_stk	6796059.97	2124400.05	4995.26	4995.17	0.09	1.1
31652_stk	6796109.99	2124399.99	4994.24	4994.16	0.08	0.9
31653_stk	6796160.05	2124400.04	4993.19	4993.15	0.05	0.6
31669_stk	6795110.02	2124450.04	4989.42	4989.39	0.03	0.4

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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
31670_stk	6795159.98	2124450.00	4990.66	4990.61	0.04	0.5
31671_stk	6795210.00	2124449.98	4991.86	4991.84	0.02	0.2
31672_stk	6795260.02	2124449.95	4993.09	4993.06	0.03	0.3
31673_stk	6795310.02	2124450.02	4994.41	4994.29	0.12	1.5
31674_stk	6795359.99	2124450.06	4995.54	4995.51	0.02	0.3
31675_stk	6795410.06	2124449.99	4996.80	4996.74	0.06	0.8
31676_stk	6795459.98	2124450.03	4998.10	4997.96	0.13	1.6
31677_stk	6795509.97	2124450.01	4999.23	4999.19	0.04	0.4
31678_stk	6795560.06	2124450.01	5000.54	5000.42	0.12	1.4
31679_stk	6795610.02	2124449.96	5001.68	5001.64	0.03	0.4
31680_stk	6795660.02	2124450.03	5002.89	5002.87	0.03	0.3
31681_stk	6795710.06	2124450.02	5002.38	5002.22	0.16	2.0
31682_stk	6795760.04	2124449.98	5001.26	5001.21	0.05	0.6
31683_stk	6795809.98	2124449.98	5000.29	5000.20	0.09	1.1
31684_stk	6795859.99	2124449.99	4999.29	4999.19	0.10	1.2
31685_stk	6795910.05	2124449.95	4998.20	4998.18	0.02	0.3
31686_stk	6795960.00	2124449.97	4997.30	4997.16	0.14	1.7
31687_stk	6796009.96	2124449.96	4996.30	4996.15	0.15	1.8
31688_stk	6796060.00	2124450.03	4995.27	4995.14	0.13	1.6
31689_stk	6796110.02	2124450.06	4994.28	4994.13	0.15	1.8
31690_stk	6796159.96	2124450.02	4993.20	4993.11	0.08	1.0
31706_stk	6795160.05	2124500.04	4990.40	4990.33	0.07	0.9
31707_stk	6795209.95	2124500.04	4991.59	4991.56	0.03	0.4
31708_stk	6795259.98	2124500.02	4992.86	4992.78	0.08	1.0
31709_stk	6795310.05	2124500.03	4994.11	4994.01	0.11	1.3
31710_stk	6795360.04	2124499.98	4995.35	4995.23	0.12	1.4
31711_stk	6795410.00	2124499.97	4996.55	4996.46	0.09	1.1
31712_stk	6795460.03	2124499.97	4997.72	4997.68	0.04	0.5
31713_stk	6795509.97	2124499.98	4999.00	4998.91	0.09	1.1
31714_stk	6795560.03	2124500.02	5000.26	5000.13	0.12	1.5
31715_stk	6795610.01	2124499.98	5001.48	5001.36	0.12	1.5
31716_stk	6795660.04	2124500.02	5002.67	5002.59	0.08	1.0
31717_stk	6795709.95	2124500.04	5002.20	5002.19	0.01	0.2
31718_stk	6795760.00	2124499.99	5001.33	5001.18	0.15	1.8
31719_stk	6795809.99	2124500.02	5000.23	5000.17	0.06	0.7
31720_stk	6795860.00	2124500.02	4999.27	4999.16	0.11	1.3
31721_stk	6795909.97	2124500.04	4998.22	4998.15	0.07	0.8
31722_stk	6795960.00	2124500.06	4997.28	4997.13	0.14	1.7
31723_stk	6796009.98	2124499.99	4996.21	4996.12	0.09	1.1
31724_stk	6796060.01	2124500.05	4995.18	4995.11	0.07	0.8
31725_stk	6796109.98	2124499.98	4994.12	4994.10	0.03	0.3
31726_stk	6796159.99	2124500.03	4993.14	4993.08	0.06	0.7
31742_stk	6795159.97	2124549.99	4990.06	4990.05	0.01	0.1
31743_stk	6795210.00	2124550.02	4991.34	4991.28	0.07	0.8
31744_stk	6795259.99	2124549.97	4992.54	4992.50	0.04	0.5
31745_stk	6795310.00	2124550.02	4993.80	4993.73	0.08	0.9
31746_stk	6795360.02	2124550.02	4995.07	4994.95	0.12	1.5
31747_stk	6795410.02	2124549.97	4996.26	4996.18	0.09	1.1
31748_stk	6795460.01	2124549.99	4997.50	4997.40	0.10	1.2
31749_stk	6795510.02	2124550.00	4998.76	4998.63	0.13	1.6
31750_stk	6795559.99	2124549.97	5000.02	4999.85	0.16	2.0
31751_stk	6795610.06	2124550.02	5001.15	5001.08	0.07	0.8
31752_stk	6795659.99	2124549.98	5002.38	5002.30	0.08	0.9
31753_stk	6795709.97	2124549.96	5002.31	5002.16	0.16	1.9
31754_stk	6795760.00	2124549.99	5001.27	5001.15	0.12	1.4
31755_stk	6795809.96	2124549.94	5000.29	5000.14	0.15	1.8
31756_stk	6795860.02	2124550.01	4999.29	4999.13	0.16	2.0
31757_stk	6795909.99	2124550.02	4998.18	4998.12	0.06	0.7
31758_stk	6795959.98	2124550.03	4997.25	4997.10	0.14	1.7
31759_stk	6796009.95	2124550.05	4996.18	4996.09	0.09	1.1
31760_stk	6796059.94	2124549.95	4995.18	4995.08	0.10	1.2
31761_stk	6796110.01	2124550.04	4994.18	4994.07	0.11	1.4
31762_stk	6796159.94	2124550.04	4993.21	4993.05	0.15	1.8
31778_stk	6795159.97	2124600.04	4989.79	4989.77	0.02	0.2
31779_stk	6795210.01	2124599.98	4991.00	4990.99	0.00	0.0
31780_stk	6795260.04	2124600.01	4992.30	4992.22	0.08	1.0

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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
31781_stk	6795310.00	2124600.05	4993.52	4993.44	0.08	0.9
31782_stk	6795360.03	2124599.94	4994.76	4994.67	0.09	1.1
31783_stk	6795410.04	2124600.01	4996.03	4995.89	0.13	1.6
31784_stk	6795460.03	2124600.01	4997.20	4997.12	0.08	1.0
31785_stk	6795510.03	2124600.06	4998.43	4998.34	0.09	1.0
31786_stk	6795559.95	2124600.02	4999.68	4999.57	0.11	1.3
31787_stk	6795609.95	2124600.02	5000.95	5000.80	0.15	1.8
31788_stk	6795660.04	2124600.02	5002.15	5002.02	0.13	1.6
31789_stk	6795710.05	2124600.02	5002.28	5002.12	0.15	1.8
31790_stk	6795760.05	2124599.98	5001.15	5001.12	0.03	0.4
31791_stk	6795809.97	2124599.96	5000.26	5000.11	0.15	1.8
31792_stk	6795859.99	2124599.97	4999.11	4999.10	0.02	0.2
31793_stk	6795910.04	2124600.04	4998.20	4998.09	0.11	1.4
31794_stk	6795959.97	2124600.03	4997.14	4997.07	0.06	0.8
31795_stk	6796010.03	2124600.04	4996.12	4996.06	0.06	0.7
31796_stk	6796060.04	2124599.99	4995.12	4995.05	0.07	0.8
31797_stk	6796110.05	2124600.00	4994.16	4994.04	0.12	1.4
31798_stk	6796160.01	2124599.96	4993.13	4993.02	0.10	1.2
31799_stk	6796210.08	2124600.00	4992.12	4992.01	0.11	1.3
31816_stk	6795209.98	2124649.98	4990.78	4990.71	0.07	0.9
31817_stk	6795259.96	2124650.04	4991.99	4991.94	0.05	0.7
31818_stk	6795310.01	2124650.00	4993.24	4993.16	0.08	0.9
31819_stk	6795360.03	2124650.01	4994.46	4994.39	0.08	0.9
31820_stk	6795409.98	2124650.01	4995.66	4995.61	0.05	0.6
31821_stk	6795460.00	2124650.02	4996.84	4996.84	0.01	0.1
31822_stk	6795509.96	2124650.04	4998.13	4998.06	0.06	0.8
31823_stk	6795560.01	2124650.03	4999.35	4999.29	0.06	0.7
31824_stk	6795610.00	2124649.94	5000.55	5000.51	0.03	0.4
31825_stk	6795660.02	2124649.95	5001.86	5001.74	0.12	1.5
31826_stk	6795709.98	2124649.98	5002.11	5002.09	0.02	0.2
31827_stk	6795760.01	2124650.03	5001.09	5001.08	0.01	0.1
31828_stk	6795810.05	2124650.05	5000.09	5000.07	0.02	0.2
31829_stk	6795859.98	2124650.03	4999.10	4999.07	0.03	0.4
31830_stk	6795910.04	2124650.01	4998.13	4998.06	0.08	0.9
31831_stk	6795960.03	2124650.04	4997.11	4997.04	0.07	0.8
31832_stk	6796010.02	2124650.02	4996.15	4996.03	0.12	1.5
31833_stk	6796059.99	2124649.99	4995.12	4995.02	0.10	1.2
31834_stk	6796109.97	2124650.03	4994.10	4994.01	0.09	1.1
31835_stk	6796159.98	2124650.03	4993.08	4992.99	0.09	1.0
31836_stk	6796210.01	2124649.97	4992.06	4991.98	0.08	0.9
31853_stk	6795209.99	2124700.01	4990.44	4990.43	0.01	0.2
31854_stk	6795260.00	2124700.01	4991.72	4991.65	0.06	0.7
31855_stk	6795310.02	2124700.00	4992.90	4992.88	0.03	0.3
31856_stk	6795360.01	2124699.96	4994.16	4994.10	0.05	0.6
31857_stk	6795409.96	2124700.04	4995.42	4995.33	0.09	1.1
31858_stk	6795460.03	2124700.02	4996.65	4996.55	0.10	1.2
31859_stk	6795510.01	2124700.00	4997.91	4997.78	0.13	1.6
31860_stk	6795560.00	2124699.99	4999.08	4999.01	0.08	0.9
31861_stk	6795610.02	2124700.02	5000.35	5000.23	0.12	1.4
31862_stk	6795660.03	2124700.00	5001.50	5001.46	0.04	0.5
31863_stk	6795710.01	2124700.01	5002.12	5002.06	0.05	0.6
31864_stk	6795759.97	2124700.01	5001.11	5001.05	0.06	0.8
31865_stk	6795810.01	2124700.04	5000.13	5000.04	0.08	1.0
31866_stk	6795860.01	2124699.98	4999.11	4999.04	0.08	0.9
31867_stk	6795909.95	2124700.03	4998.09	4998.02	0.06	0.8
31868_stk	6795959.98	2124700.00	4997.07	4997.01	0.06	0.7
31869_stk	6796010.01	2124700.02	4996.09	4996.00	0.09	1.0
31870_stk	6796060.00	2124699.97	4995.03	4994.99	0.04	0.5
31871_stk	6796109.99	2124699.99	4994.01	4993.98	0.04	0.5
31872_stk	6796159.96	2124700.00	4993.03	4992.96	0.07	0.8
31873_stk	6796210.00	2124700.01	4992.02	4991.95	0.07	0.9
31890_stk	6795210.02	2124750.00	4990.16	4990.15	0.02	0.2
31891_stk	6795259.99	2124750.05	4991.42	4991.37	0.05	0.5
31892_stk	6795309.97	2124750.02	4992.66	4992.60	0.07	0.8
31893_stk	6795360.01	2124750.03	4993.86	4993.82	0.04	0.4
31894_stk	6795410.00	2124750.02	4995.09	4995.05	0.04	0.5

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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
31895_stk	6795460.05	2124749.97	4996.32	4996.27	0.05	0.6
31896_stk	6795510.02	2124749.99	4997.58	4997.50	0.08	1.0
31897_stk	6795560.00	2124750.01	4998.79	4998.72	0.06	0.8
31898_stk	6795609.96	2124750.05	4999.99	4999.95	0.04	0.5
31899_stk	6795660.02	2124749.96	5001.25	5001.18	0.08	0.9
31900_stk	6795710.02	2124750.01	5002.10	5002.03	0.07	0.8
31901_stk	6795759.98	2124750.02	5001.05	5001.02	0.03	0.4
31902_stk	6795809.98	2124749.99	5000.05	5000.01	0.04	0.4
31903_stk	6795860.01	2124750.01	4999.06	4999.00	0.06	0.7
31904_stk	6795910.05	2124749.99	4998.03	4997.99	0.04	0.5
31905_stk	6795960.01	2124750.00	4997.03	4996.98	0.05	0.6
31906_stk	6796009.99	2124749.98	4996.05	4995.97	0.08	0.9
31907_stk	6796060.02	2124749.98	4995.04	4994.96	0.08	1.0
31908_stk	6796110.02	2124750.00	4994.02	4993.95	0.08	0.9
31909_stk	6796160.02	2124750.03	4992.98	4992.93	0.05	0.6
31910_stk	6796210.04	2124749.99	4991.98	4991.92	0.06	0.7
31931_stk	6795409.98	2124799.98	4994.77	4994.76	0.00	0.0
31932_stk	6795459.98	2124800.03	4996.06	4995.99	0.07	0.8
31933_stk	6795510.01	2124800.02	4997.29	4997.22	0.07	0.9
31934_stk	6795560.01	2124800.01	4998.48	4998.44	0.04	0.4
31935_stk	6795609.98	2124800.02	4999.74	4999.67	0.07	0.9
31936_stk	6795659.98	2124799.97	5000.93	5000.89	0.04	0.4
31937_stk	6795709.98	2124799.98	5002.02	5002.00	0.02	0.2
31938_stk	6795759.98	2124800.03	5001.06	5000.99	0.07	0.8
31939_stk	6795810.01	2124799.97	5000.05	4999.98	0.07	0.8
31940_stk	6795860.06	2124799.98	4999.03	4998.97	0.06	0.7
31941_stk	6795910.01	2124800.01	4997.99	4997.96	0.03	0.3
31942_stk	6795960.02	2124800.02	4996.97	4996.95	0.02	0.2
31943_stk	6796009.99	2124800.06	4996.02	4995.94	0.08	0.9
31944_stk	6796060.00	2124800.04	4994.97	4994.93	0.05	0.5
31945_stk	6796110.02	2124800.01	4993.98	4993.92	0.06	0.7
31946_stk	6796159.98	2124800.02	4992.98	4992.90	0.08	0.9
31947_stk	6796209.99	2124800.06	4991.93	4991.89	0.04	0.5
31969_stk	6795460.02	2124850.01	4995.78	4995.71	0.07	0.9
31970_stk	6795510.00	2124849.96	4997.02	4996.93	0.08	1.0
31971_stk	6795559.99	2124849.98	4998.25	4998.16	0.09	1.1
31972_stk	6795610.01	2124850.00	4999.44	4999.39	0.05	0.6
31973_stk	6795660.01	2124849.99	5000.63	5000.61	0.02	0.2
31974_stk	6795710.03	2124849.97	5001.85	5001.84	0.02	0.2
31975_stk	6795760.01	2124850.03	5000.99	5000.96	0.03	0.4
31976_stk	6795809.97	2124850.03	4999.97	4999.95	0.02	0.2
31977_stk	6795860.05	2124849.99	4999.00	4998.94	0.05	0.6
31978_stk	6795910.01	2124850.00	4997.95	4997.93	0.02	0.2
31979_stk	6795960.02	2124850.02	4996.96	4996.92	0.04	0.4
31980_stk	6796010.07	2124850.02	4995.92	4995.91	0.01	0.1
31981_stk	6796059.99	2124850.05	4994.91	4994.90	0.01	0.1
31982_stk	6796110.04	2124850.02	4993.92	4993.89	0.03	0.4
31983_stk	6796160.03	2124850.01	4992.90	4992.87	0.03	0.3
31984_stk	6796209.96	2124850.04	4991.90	4991.86	0.04	0.4
32006_stk	6795510.07	2124899.99	4996.71	4996.65	0.06	0.7
32007_stk	6795559.99	2124900.04	4997.96	4997.88	0.08	1.0
32008_stk	6795610.03	2124900.04	4999.12	4999.10	0.02	0.2
32009_stk	6795660.00	2124900.02	5000.38	5000.33	0.05	0.6
32010_stk	6795709.95	2124900.02	5001.62	5001.55	0.06	0.7
32011_stk	6795759.97	2124899.99	5001.06	5000.93	0.13	1.6
32012_stk	6795810.02	2124899.98	5000.02	4999.92	0.10	1.2
32013_stk	6795860.06	2124900.04	4998.98	4998.91	0.07	0.8
32014_stk	6795909.96	2124899.93	4997.98	4997.90	0.08	0.9
32015_stk	6795960.00	2124899.97	4996.97	4996.89	0.08	1.0
32016_stk	6796010.05	2124900.04	4995.97	4995.88	0.09	1.1
32017_stk	6796060.00	2124900.03	4994.95	4994.87	0.08	1.0
32018_stk	6796110.04	2124899.98	4993.94	4993.86	0.09	1.1
32019_stk	6796160.04	2124900.07	4992.92	4992.84	0.08	0.9
32020_stk	6796210.01	2124899.97	4991.88	4991.83	0.05	0.5
32042_stk	6795509.99	2124949.97	4996.43	4996.37	0.06	0.7
32043_stk	6795560.03	2124950.02	4997.68	4997.60	0.08	1.0

Radon Barrier  
Grade Verification Form

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## Appendix A4. Radon Barrier Buyoff Survey (continued)

Radon Barrier Grade Verification Survey						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
32044_stk	6795610.03	2124950.02	4998.90	4998.82	0.08	0.9
32045_stk	6795660.00	2124950.03	5000.12	5000.05	0.08	0.9
32046_stk	6795709.99	2124949.98	5001.34	5001.27	0.07	0.8
32047_stk	6795759.98	2124950.02	5000.99	5000.90	0.09	1.1
32048_stk	6795810.00	2124950.00	4999.96	4999.89	0.07	0.9
32049_stk	6795860.00	2124950.03	4998.93	4998.88	0.04	0.5
32050_stk	6795910.02	2124949.99	4997.94	4997.87	0.06	0.8
32051_stk	6795959.95	2124950.00	4996.94	4996.86	0.08	1.0
32052_stk	6796009.99	2124950.01	4995.95	4995.85	0.10	1.2
32053_stk	6796060.00	2124949.99	4994.91	4994.84	0.07	0.9
32054_stk	6796110.00	2124949.95	4993.87	4993.82	0.04	0.5
32055_stk	6796160.01	2124950.02	4992.87	4992.81	0.06	0.7
32056_stk	6796209.98	2124950.03	4991.82	4991.80	0.02	0.3
32078_stk	6795510.01	2125000.05	4996.14	4996.09	0.05	0.6
32079_stk	6795559.96	2125000.05	4997.41	4997.31	0.10	1.2
32080_stk	6795609.98	2124999.99	4998.56	4998.54	0.02	0.3
32081_stk	6795659.98	2125000.01	4999.79	4999.77	0.02	0.3
32082_stk	6795709.98	2125000.01	5001.09	5000.99	0.10	1.1
32083_stk	6795760.03	2125000.01	5000.92	5000.87	0.06	0.7
32084_stk	6795810.03	2125000.01	4999.90	4999.86	0.05	0.6
32085_stk	6795859.97	2124999.97	4998.90	4998.85	0.05	0.6
32086_stk	6795909.97	2125000.01	4997.91	4997.84	0.06	0.8
32087_stk	6795959.99	2125000.00	4996.92	4996.83	0.09	1.1
32088_stk	6796010.00	2125000.01	4995.91	4995.82	0.09	1.0
32089_stk	6796059.98	2124999.99	4994.87	4994.81	0.06	0.7
32090_stk	6796110.00	2124999.98	4993.90	4993.79	0.11	1.3
32091_stk	6796160.02	2124999.99	4992.85	4992.78	0.07	0.8
32092_stk	6796209.98	2125000.00	4991.84	4991.77	0.07	0.8
32114_stk	6795509.99	2125049.99	4995.85	4995.81	0.04	0.5
32115_stk	6795560.01	2125050.03	4997.10	4997.03	0.07	0.9
32116_stk	6795610.00	2125049.97	4998.30	4998.26	0.04	0.5
32117_stk	6795660.03	2125050.01	4999.54	4999.48	0.05	0.6
32118_stk	6795710.01	2125050.00	5000.78	5000.71	0.07	0.9
32119_stk	6795760.01	2125050.00	5000.91	5000.84	0.07	0.9
32120_stk	6795809.97	2125050.02	4999.91	4999.83	0.08	1.0
32121_stk	6795860.01	2125049.96	4998.89	4998.82	0.07	0.9
32122_stk	6795910.01	2125050.00	4997.88	4997.81	0.07	0.9
32123_stk	6795959.99	2125050.00	4996.87	4996.80	0.07	0.9
32124_stk	6796010.01	2125050.01	4995.86	4995.79	0.07	0.8
32125_stk	6796059.96	2125050.01	4994.86	4994.78	0.08	1.0
32126_stk	6796110.01	2125050.02	4993.84	4993.76	0.07	0.9
32127_stk	6796159.98	2125049.99	4992.76	4992.75	0.01	0.1
32128_stk	6796210.02	2125050.02	4991.75	4991.74	0.01	0.1
32129_stk	6796260.02	2125049.94	4990.78	4990.73	0.05	0.6
32152_stk	6795560.00	2125100.02	4996.77	4996.75	0.02	0.2
32153_stk	6795610.03	2125100.01	4997.97	4997.98	0.00	0.0
32158_stk	6795859.99	2125099.99	4998.84	4998.79	0.06	0.7
32159_stk	6795910.04	2125100.01	4997.78	4997.78	0.00	0.0
32160_stk	6795959.96	2125100.02	4996.84	4996.77	0.07	0.8
32161_stk	6796009.99	2125099.99	4995.82	4995.76	0.06	0.7
32162_stk	6796059.99	2125099.97	4994.81	4994.75	0.06	0.7
32163_stk	6796110.00	2125100.03	4993.78	4993.73	0.04	0.5
32164_stk	6796159.99	2125099.99	4992.87	4992.72	0.14	1.7
32165_stk	6796210.00	2125100.02	4991.74	4991.71	0.03	0.4
32166_stk	6796260.01	2125100.02	4990.73	4990.70	0.04	0.4
33223_stk	6796060.02	2123200.01	4993.76	4993.69	0.07	0.9
33224_stk	6796059.97	2123250.01	4994.13	4994.00	0.13	1.6
33225_stk	6796109.98	2123300.01	4993.45	4993.34	0.11	1.4
33226_stk	6796110.02	2123350.07	4993.76	4993.65	0.12	1.4
33227_stk	6796109.98	2123400.01	4994.03	4993.96	0.07	0.8
33228_stk	6796110.00	2123450.02	4994.35	4994.27	0.08	1.0
33229_stk	6796110.02	2123499.94	4994.64	4994.58	0.06	0.8
33230_stk	6796109.99	2123550.03	4994.78	4994.67	0.11	1.3
33231_stk	6796109.99	2123600.03	4994.70	4994.64	0.06	0.7
33232_stk	6796109.99	2123650.02	4994.68	4994.61	0.06	0.8
33233_stk	6796160.01	2123700.02	4993.63	4993.57	0.06	0.7

Radon Barrier  
Grade Verification Form

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## Appendix A4. Radon Barrier Buyoff Survey (continued)

<b>Radon Barrier Grade Verification Survey</b>						
Buyoff ID: URBW1N				Date: 6/8/2023		
Point #	Northing	Easting	Surveyed Elevation	Design Elevation	Δ in feet	Δ in inches
33234 stk	6796159.97	2123750.00	4993.62	4993.54	0.08	1.0
33235 stk	6796159.97	2123800.02	4993.59	4993.51	0.08	0.9
33236 stk	6796160.00	2123850.02	4993.62	4993.48	0.14	1.6
33237 stk	6796160.04	2123900.00	4993.58	4993.45	0.13	1.5
33238 stk	6796159.97	2123950.03	4993.47	4993.42	0.05	0.6
33239 stk	6796159.96	2124000.00	4993.43	4993.39	0.05	0.6
33240 stk	6796160.01	2124050.02	4993.46	4993.36	0.10	1.2
33241 stk	6796160.03	2124100.01	4993.39	4993.33	0.06	0.7
33242 stk	6796210.04	2124150.00	4992.33	4992.29	0.05	0.6
33243 stk	6796209.98	2124199.94	4992.26	4992.26	0.01	0.1
33244 stk	6796210.02	2124249.99	4992.30	4992.23	0.07	0.9
33245 stk	6796210.01	2124300.01	4992.29	4992.19	0.09	1.1
33246 stk	6796210.06	2124349.97	4992.21	4992.16	0.04	0.5
33247 stk	6796210.04	2124400.02	4992.21	4992.13	0.08	0.9
33248 stk	6796210.05	2124450.01	4992.13	4992.10	0.03	0.3
33249 stk	6796210.05	2124500.00	4992.17	4992.07	0.10	1.2
33250 stk	6796209.98	2124549.99	4992.19	4992.04	0.15	1.8
33251 stk	6796259.96	2124599.96	4991.14	4991.00	0.14	1.7
33252 stk	6796260.06	2124650.04	4991.02	4990.97	0.05	0.5
33253 stk	6796260.04	2124699.97	4991.00	4990.94	0.06	0.8
33254 stk	6796260.05	2124750.03	4990.99	4990.91	0.08	0.9
33255 stk	6796259.99	2124800.05	4990.94	4990.88	0.06	0.7
33256 stk	6796260.02	2124849.95	4990.87	4990.85	0.02	0.3
33257 stk	6796259.95	2124900.01	4990.88	4990.82	0.06	0.7
33258 stk	6796260.04	2124950.06	4990.84	4990.79	0.05	0.6
33259 stk	6796260.02	2124999.99	4990.78	4990.76	0.03	0.3
33260 stk	6796310.02	2125050.03	4989.81	4989.72	0.10	1.2
33261 stk	6796309.99	2125100.01	4989.76	4989.69	0.07	0.9
33262 stk	6796310.03	2125150.05	4989.72	4989.66	0.07	0.8
33263 stk	6796310.04	2125200.00	4989.69	4989.63	0.07	0.8
33264 stk	6796310.01	2125250.00	4989.61	4989.59	0.01	0.2
33265 stk	6796310.07	2125300.00	4989.63	4989.56	0.07	0.8
33266 stk	6796310.00	2125350.01	4989.63	4989.53	0.10	1.2
33267 stk	6796309.97	2125400.04	4989.56	4989.50	0.06	0.7

Comments: QC performed a visual inspection of the final surface. The grading tolerance for the finish grade of the radon barrier is -0 FT to +0.17 FT (-0 IN to +2 IN). This was changed during ET cover design by the design authority, Steve Dwyer PE, PhD. The previously designed radon barrier was raised 0.17 FT to allow for this methodology. All particle sizes met the requirements.

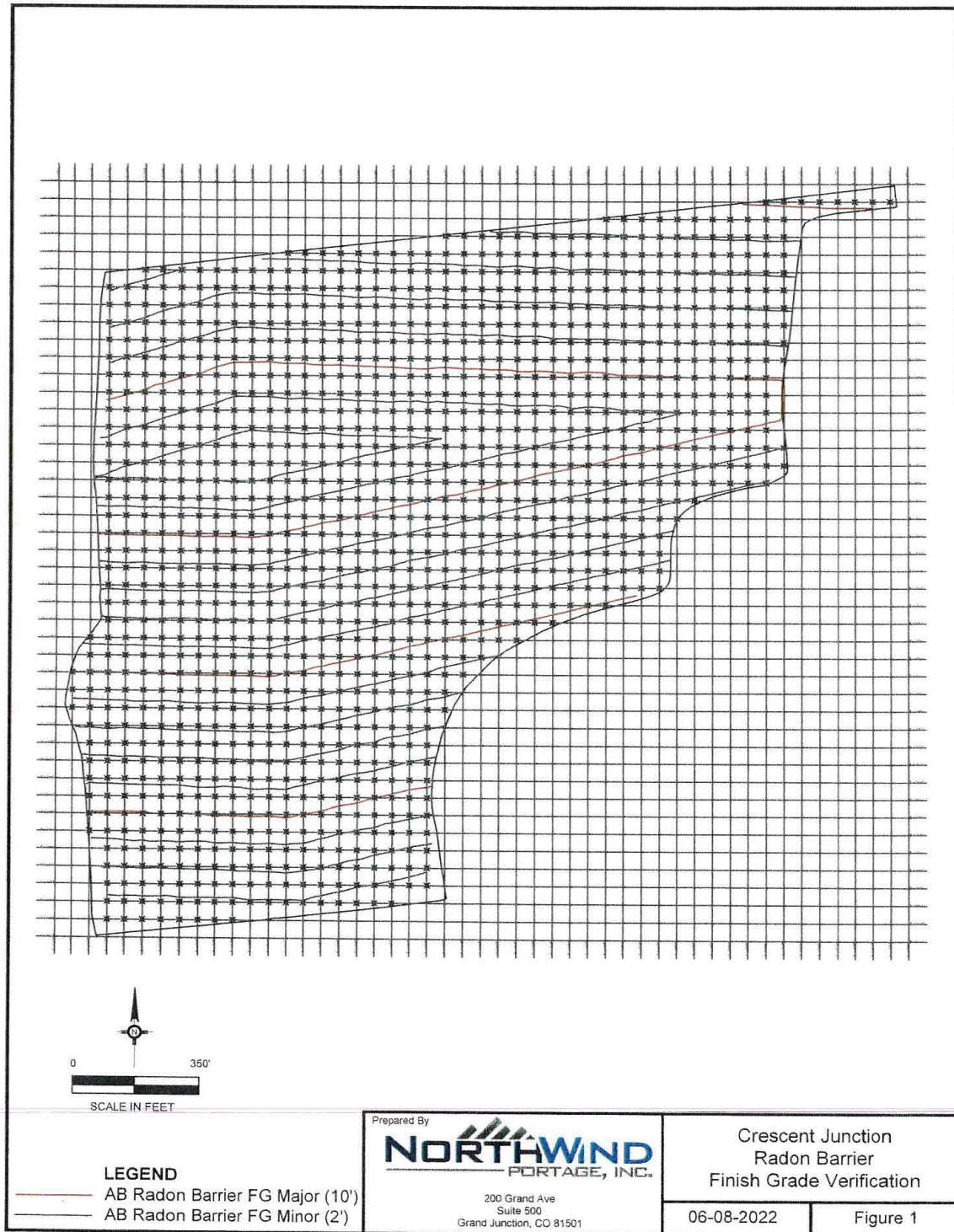
Approval Date: 6/8/2023	Total Square Feet: 2,914,134 FT <sup>2</sup>
Northwest Corner: N 6796060 E 2123200	
QC Signature: <i>[Signature]</i>	Reviewed By: <i>[Signature]</i>

Radon Barrier  
Grade Verification Form

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## Appendix A4. Radon Barrier Buyoff Survey (continued)



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**Appendix A8.**  
**Spoils Embankment**

**Standard Proctor Test Results Summary**  
**Lift Approval Summaries**  
**Lift Approval Package**

## Appendix A8. Spoils Embankment Standard Proctor Test Results Summary

Proctor ID	Date sampled	Date Approved	Max Dry Density	Optimum Moisture	Proctor Description
Spoils Wedge 2022#1	10/31/2022	11/9/2022	117.7	12.8%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#2	10/31/2022	11/9/2022	115.2	13.6%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#3	10/31/2022	11/9/2022	115.8	13.2%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#4	11/10/2022	11/14/2022	123.3	11.0%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#5	11/16/2000	11/17/2022	122.0	11.6%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#6	11/24/2022	11/28/2022	115.0	14.0%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#7	11/28/2022	12/20/2022	114.1	14.4%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#8	12/1/2022	12/2/2022	116.8	13.3%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#9	12/5/2022	12/13/2022	115.6	13.4%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#10	12/8/2022	12/9/2022	116.7	13.3%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#11	12/5/2022	12/13/2022	115.6	13.0%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#12	12/15/2022	12/20/2022	119.2	12.3%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#13	12/15/2022	12/22/2022	120.6	12.0%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#14	1/5/2023	1/9/2023	119.8	12.5%	Clay Sandy, gravelly (CL)
Spoils Wedge 2022#15	1/5/2023	1/9/2023	120.7	12.2%	Clay Sandy, gravelly (CL)
Spoils Wedge 2023#17	1/26/2023	2/1/2023	116.7	14.0%	Clay Sandy, gravelly (CL)



## Appendix A8. Spoils Embankment Lift Approval Summaries

December 2022 Wedge										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd <sup>3</sup> )	Cumulative Quantity Approved (yd <sup>3</sup> )	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
12/20/22	USO8221107-00	6	13130	13,130	N/A	1.0	Spoils Wedge 2022 # 1,2& 6	6	0	97.2
12/21/22	USO8221109-00	6	13130	26,260	N/A	1.0	Spoils Wedge 2022 # 1& 3	6	0	97.0
<p style="text-align: center;"> Average CBCS Screen Passing Pixels (%) = N/A  Total Quantity Approved (yd<sup>3</sup>) = 26,260  Total # of Nuclear Density Gauge Tests = 12  Total # of Moisture Tests = 12  Quantity per Moisture Test (yd<sup>3</sup>) = 2,188  Total Average Thickness (ft) = 1.0 </p>										

## Appendix A8. Spoils Embankment Lift Approval Summaries *(continued)*

January 2023										
Date	Lift ID #	# of Passing Moisture Tests	Quantity Approved (yd³)	Cumulative Quantity Approved (yd³)	CBCS Screen Passing Pixels (%)	Average Thickness (ft)	Proctor ID #	# of Nuclear Density Gauge Verifications	# of Sandcone Verifications	Verified Compaction (%)
01/04/23	USO8221114-00	8	13130	13,130	N/A	1.0	Spoils Wedge 2022#1	8	N/A	97.0
01/04/23	USO8221116-00	7	13130	26,260	N/A	1.0	Spoils Wedge 2022#1&5	6	1	95.0
01/04/23	USO8221122-00	7	13130	39,390	N/A	1.0	Spoils Wedge 2022#5, 2&3	6	N/A	94.6
01/04/23	USO8221128-00	7	13130	52,520	N/A	1.0	Spoils Wedge 2022#1,2&7	7	N/A	95.4
01/04/23	USO8221130-00	7	13130	65,650	N/A	1.0	Spoils Wedge 2022#6	5	1	95.3
01/05/23	USO8221201-00	5	13130	78,780	N/A	1.0	Spoils Wedge 2022#6	5	N/A	94.4
01/30/23	USO8221208-00	5	13,130	91,910	N/A	1.0	Spoils Wedge 2022# 5&6	5	N/A	95.0
01/30/23	USO8221207-00	6	13,130	105,040	N/A	1.0	Spoils Wedge 2022# 3, 5&6	6	N/A	93.3
01/30/23	USO8221214-00	5	13,130	118,170	N/A	1.0	Spoils Wedge 2022# 6	5	N/A	93.6
01/30/23	USO8221214-00	5	13,130	131,300	N/A	1.0	Spoils Wedge 2022# 6	5	N/A	95.0
Average CBCS Screen Passing Pixels (%) = N/A										
Total Quantity Approved (yd³) = 131,300										
Total # of Nuclear Density Gauge Tests = 58										
Total # of Moisture Tests = 62										
Quantity per Moisture Test (yd³) = 2,118										
Total Average Thickness (ft) = 1.0										

## Appendix A8. Spoils Embankment Lift Approval Package

### LIFT APPROVAL FORM

PROJECT: <u>Moab UMTRA</u>		OTHER: _____	
NW CORNER		DATE: <u>11/30/2022</u>	

IDENTIFY LOTS ABOVE

LIFT ID: <u>USO8221201-00</u>	NW CORNER: <u>6796421 N 2121329 E</u>
Uncompacted Thickness: <u>1.0</u>	Compacted Thickness: <u>N/A</u>
NW CORNER of debris placement: <u>N/A</u>	EW Dimension: <u>N/A</u>
Lift Area (ft²): <u>354,513</u>	Lift Volume (yd³): <u>13,130</u>

Debris Insp. By: N/A Date: N/A Time: N/A

NS Dimension: N/A

Comments: This lift area surface has been degrubbed and prepped for the first lift. A water wagon was used for dust suppression and moisture conditioning of the subgrade and imported cell excavation fill material. Five (5) moisture density tests were taken for compaction quality control purposes. All seven of the M/D tests had densities that are within the required specifications for wedge placement and compaction. Note: Moisture density tests were taken over a 1-day period, Dec 1, 2022

Attached Forms: Grid Slope N/A Compaction Macro N/A Print Screen N/A Moisture/ Density X

KEYING IN NOTES: N E S W N/A MOISTURE/ DENSITY TESTS ID # (S): P1, P2, P3, P4 & P5

LIFT APPROVED BY: Larry D Oviatt / Larry D Oviatt DATE: 12/30/2022 TIME: 1645

QA/QC APPROVAL: [Signature] DATE: 1/9/2023

Density Testing  
DOE-EM/GJRAC1783  
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## Appendix A8. Spoils Embankment Lift Approval Package

### FIELD DENSITY TEST

PROJECT: <u>Moab UMTRA</u>						Date: <u>Dec 01 2022</u>					
Lift ID: <u>USO8221201-00</u>											
Make/Model: <u>Troxler 3440 / 27359</u>						Gauge Calibration Date: <u>3/29/2022</u>					
Task: <u>Spoils Wedge Placement</u>						Sand-Cone and Plate No. <u>N/A</u>					
						Sand-Cone Calibration Date: <u>N/A</u>					

Test No.	Depth (inches)	Test Location	Test NUC	Type Sand	MDD (pcf)	OMC (%)	WD (pcf)	DD (pcf)	MC (%)	Compaction (%)	Pass Fail	Soil Type	Proctor ID.	Date of Test
#1	8"	38°57'57.64' 109°48'11.25"	X		115.0	14.0	122.1	112.2	8.9	98	Pass		Spoils Wedge 2022 #6	12/1/2022
#2	8"	38°57'57.13' 109°48'14.65"	X		115.0	14.0	111.2	103.8	7.1	90	Pass		Spoils Wedge 2022 #6	12/1/2022
#3	8"	38°57'57.82' 109°48'13.28"	X		115.0	14.0	116.1	108.3	7.2	94	Pass		Spoils Wedge 2022 #6	12/1/2022
#4	8"	38°57'56.26' 109°48'12.60"	X		115.0	14.0	116.0	108.7	6.7	95	Pass		Spoils Wedge 2022 #6	12/1/2022
#5	8"	38°57'57.83' 109°48'12.16"	X		115.0	14.0	117.3	109.6	7.1	95	Pass		Spoils Wedge 2022 #6	12/1/2022

**Legend:**

\* indicates moisture and density correction for RRM only

\*\* indicates a retest

MDD- Maximum Dry Density

OMC- Optimum Moisture Content

WD- Wet Density

DD- Dry Density

MC- Moisture Content

**Moisture Density Specifications:**

Specified Compaction Requirements 115.0 % MDD

Specified Moisture Requirement 14.0 % OMC

Proctor Testing Procedure ASTM

Notes: Moisture test taken on #2 test

Proctor SW2022 #8 taken @ ;

38°57'58.39" N

109°48'10.40" W

Proctor SW2022 #9 taken @ ;

38°57'55.31" N

109°48'15.00" W

**Standard Count:**

MS= 284

DS= 1,937

Testing By: Larry D Oviatt *Larry Oviatt*

Print Name / Signature

QA/QC Approval: Robert Anderson *Robert Anderson*

Print Name / Signature

Date: 12/1/2022

Date: 1/9/2023