

APPENDIX D
CN 2017 SOIL CHARACTERIZATION REPORT
FOR
HIGH RANGE WELL

August 11, 2017

Mr. Stefan Hrabosky
Project Manager, RSO
Thermo Fisher Scientific, Inc.
5981 Airport Road
Santa Fe, NM 87507

RE: Soil Characterization Report
Former Thermo Eberline LLC Facility
5981 Airport Road
Santa Fe, NM

Dear Mr. Hrabosky:

C.N. Associates, Inc. (CN) is pleased to provide Thermo Eberline LLC (Thermo) with this report summarizing the results of soil characterization conducted adjacent to the former High Range Calibration Well (HRW) at the 5981 Airport Road, Santa Fe, New Mexico property (site).

Purpose & Scope

The purpose of the soil characterization work was to assess the lateral and vertical extent of Cesium 137 (Cs-137) detected in soil adjacent to the former HRW. Previous assessment conducted following removal of soils by excavation and drilling in 2012 indicated residual Cs-137 in shallow soil at up to 18.7 pico-Curies per gram (pCi/g) and in two of four subsurface borings (SB-E and SB-S, Figure 2) ranging from 418 pCi/g to 7,980 pCi/g at depths of 6 to 22 feet below ground surface (bgs). The current work included additional characterization of surface and subsurface soil to define the extent of Cs-137 impact to a default Derived Concentration Guideline Level (DCGL) for Cs-137 of 11 pCi/g.

Methods

CN developed a proposed soil boring, sampling and analysis program designed to assess the nature and extent of Cs-137 in both shallow near surface soil and subsurface soil in the area adjacent to the former HRW. Shallow characterization included a 100 percent coverage field scan of the exposed soil areas and surrounding concrete floor using Ludlum Model 2350 w/3x3 NaI meters. Following scanning surveys, 20 shallow soil samples were collected at 10 random locations on the west side of the former shallow excavation area ("X" locations in Figure 2). At each of the 10 locations one sample was collected from 0 to 6 inches in depth and a second sample was collected from 6 to 12 inches in depth. All samples were submitted for laboratory analysis by gamma spectroscopy for Cs-137.

To assess residual impacts to subsurface soil in the area around the former HRW, a one-foot sampling grid was overlaid on the former removal area (Figure 1). The grid was used to establish reference points for advancement of a series of soil borings beginning on the east side of the removal area and working from suspected unimpacted locations inward toward impacted areas. Actual boring locations were adjusted based on: 1) access limitations (as close to the wall as possible with the drilling equipment); 2) the results of field screening of soil cores using L Model 2350 w/3x3 NaI meter for total gamma relative to background; and 3) quantification of Cs-137 concentrations in soil based on analysis of selected samples using a Canberra In-Situ Gamma Spectroscopy System (ISOCS).

A GeoProbe track mounted drilling rig was deployed to support the advancement of soil borings and collection of continuous soil cores. At each boring location, two-inch diameter soil cores were collected in five-foot intervals within acetate liners continuously from the ground surface to refusal, encountered at 22 to 28 feet bgs (Table 1). All soil cores were collected prior to advancement of the drill casing into the formation. A three-inch casing was advanced to isolate the overlying formation from each core interval. The full length of each soil core was scanned with a L Model 2350 w/3x3 NaI meter to measure total gamma relative to background. Based on soil core screening results, soil samples were collected from potentially impacted and unimpacted intervals to support defining the lateral and vertical extent of Cs-137 in soil. Selected soil samples were analyzed with the ISOCS on-site to quantify Cs-137 concentrations. Based on ISOCS analysis, soil samples were selected from both impacted and non-impacted intervals for laboratory analysis of Cs-137 by gamma spectroscopy at GEL Laboratory.

Results

Field work was completed from May 26, 2017 beginning with surface survey scans and collection of shallow soil samples. Soil borings were completed from May 30th through June 7, 2017. Surface scans of 11-foot by 6.5-foot cut in the floor slab and adjacent concrete floor did not indicate any elevated readings above background with the exception of one spot above the soil area where known contamination exists at depth where the reading was 50uR/hr above background (Attachment A Survey Forms).

A total of 20 surface soil samples were collected from depth ranges of 0 to 6 inches and 6 to 12 inches at the 10 locations (marked "X") displayed in Figure 2. The shallow sampling targeted the western portion of the floor slab cut over an area of 4 feet by 6.5 feet where shallow soil removal had been conducted in 2012. Sampling results from 2012 indicated elevated Cs-137 at 18.7 pCi/g in one of the samples. Laboratory analyses of shallow soil samples are summarized in Table 2. Laboratory reports are included in Attachment B.

Results of shallow soil sampling indicate Cs-137 detected in 19 of 22 analyses (including two duplicates) ranging from 0.03 pCi/g to 31.4 pCi/g. The average concentration of Cs-137 in all shallow samples is 3.73 pCi/g. Sample SS-A2-0-6 indicated the highest level of Cs-137 in shallow soil at 31.4 pCi/g. The deeper sample at this location, sample SS-A2-6-12, indicated Cs-

137 at 7.67 pCi/g. Location A2 is the furthest southern sample collected in the shallow soil area (Figure 2).

One other location of elevated Cs-137 was SS-A8-0-6 located along the north boundary of the slab cut with a reported concentration of 9.18 pCi/g (Figure 2). The deeper sample at location A8, sample SS-A8-6-12 had a reported concentration of Cs-137 at 2.02 pCi/g, below the 11.0 pCi/g screening threshold (Table 2). Therefore, only the shallow soil at locations A2 exceed the default DCGL of 11 pCi/g.

A total of 30 soil borings were advanced within the approximately 6-foot by 6.5-foot eastern portion of the floor slab cut where previous excavation and drilling had been conducted to remove soil impacts at depth in 2012. Boring locations are shown on Figure 2. Boring logs are included in Attachment C. Refusal was encountered at depths of 22 to 28 feet consistent with the presence of a clay layer also encountered in previous borings conducted around the HRW area in 2009 (Table 1).

Soil cores were screened using a L Model 2350 w/3x3 NaI meter to measure total gamma relative to background. Field surveys of each core are included in Attachment D. A total of 129 soil samples were collected at approximately two-foot intervals based on field screening of the soil cores from 30 borings. ISOCS analyses were conducted on 104 soil samples, or just over 80 percent of the samples collected. ISOCS reports are included in Attachment E. Based on ISOCS screening, 62 samples, or about 60 percent of the samples analyzed by ISOCS were submitted to GEL Laboratory for analysis by gamma spectroscopy. Results of ISOCS and laboratory analyses are summarized in Table 3.

Comparison of ISOCS and laboratory analyses show 100 percent agreement with respect to samples showing Cs-137 as non-detect. All samples for which Cs-137 was reported as non-detect by ISOCS were also reported by the laboratory as non-detect. In addition, all samples that had detectable levels of Cs-137 by ISOCS were also shown to have similar levels detected in laboratory analysis. The relative percent difference (RPD) in reported concentrations between ISOCS and laboratory analyses averaged less than 14 percent. Therefore, a very high correlation was established between Cs-137 concentrations in soil obtained from ISOCS and laboratory analyses.

Detected concentrations of Cs-137 ranged from 0.08 pCi/g (SB-26 from 23 to 25 feet) to 3,510 pCi/g (SB-29 from 21.5 to 23 feet). The average concentration of Cs-137 in all samples with detectable levels of Cs-137 was approximately 460 pCi/g. Detections of Cs-137 exceeding the default DCGL of 11 pCi/g were limited to soil samples collected from greater than 6 feet to about 24 feet bgs, and were located within 2 to 3 feet laterally from the former HRW.

Results indicate the vertical limit of Cs-137 impact above the default DCGL of 11 pCi/g is approximately 22 to 24 feet bgs. The vertical extent of Cs-137 impact is based on sample results showing lower concentrations of Cs-137 located beneath samples of higher impact at depth. These trends are apparent in the data presented in Table 3. For example, at boring SB-29, located within 1.5 feet southeast of the former HRW, Cs-137 was detected at 3,510 pCi/g in

sample SB29-124 collected from 21.5 to 23 feet bgs, but the sample directly beneath, SB29-125 collected from 24 to 24.5 feet bgs had a Cs-137 concentration of 5.1 pCi/g. A similar pattern is also apparent at several other borings located within two feet of the former HRW including: SB-02 (directly east), SB-11 (directly southwest), SB-28 (directly west) and SB-27 (directly northwest).

In combining the results of this investigation with those of the previous investigation in 2012 (including results for borings SB-W, SB-N, SB-E and SB-S), the lateral extent of soil impacted by Cs-137 adjacent to the former HRW is delineated by the dashed line in Figure 3. The area of impact is conservatively estimated to extend outward from the former HRW to locations where ISCOS and laboratory analyses from soil borings indicate non-detect levels of Cs-137 in soil. The area of Cs-137 impact to soil is estimated to be contained within an area approximately 4 feet in the east-west direction, 5 feet in the north-south direction. Vertically, Cs-137 impacts above DCGLs extend from 6 to 24 feet bgs. Therefore, the total in-place volume of impacted soil exceeding a DCGL is estimated at 400 cubic feet. Applying a 30 percent expansion factor results in 520 cubic feet, or just under 20 cubic yards of excavated soil.

We greatly appreciate the opportunity to assist Thermo on this assignment. If you have any questions or require clarification on any portion of this proposal, please do not hesitate to contact me at (978) 525-2400.

C.N. ASSOCIATES, INC.

Ron Cardarelli

Ron Cardarelli
Owner/Founder

Enc: Table 1: Soil Boring Summary
Table 2: Shallow Soil Analytical Results
Table 3: Soil Boring ISOCS & Laboratory Results
Figure 1: Proposed Soil Boring Grid
Figure 2: Actual Shallow Soil Sample & Soil Boring Locations
Figure 3: Estimated Extent of Impacted Soil Exceeding a DCGL
Attachment A: Radiation Survey Forms
Attachment B: Laboratory Reports
Attachment C: Boring Logs
Attachment D: Soil Core Field Screening Surveys
Attachment E: ISOCS Data

Table 1 - Soil Boring Summary
Thermo Eberline, LLC
Santa-Fe, New Mexico

Boring Number	Date	Location (Inches)		Soil Core Section (Feet)	% Recovery	Sample Number	Sample Depth (Feet)
		North Wall	East Wall				
SB-01	5/30/2017	129	30	0-5	20		
				5-10	50		
				10-15	62	SB01-001-N-20170530-13-15	13-15
				15-20	77	SB01-002-N-20170530-18-20	18-20
				20-24.5	53	SB01-003-N-20170530-23-25	23-25
SB-02	5/30/2017	90	30	0-5	23		
				5-10	52	SB02-004-N-20170530-8-10	8-10
				10-15	25	SB02-005-N-20170530-14-16	14-16
				15-20	57	SB02-006-N-20170530-18-20	18-20
				20-24.5	82	SB02-007-N-20170530-21.5-23.5	21.5-23.5
						SB02-008-N-20170530-23.5-25	23.5-25
SB-03	5/31/2017	66	30	0-5	50		
				5-10	72		
				10-15	73	SB03-009-N-20170531-13-15	13-15
				15-20	93	SB03-010-N-20170531-16-20	16-20
						SB03-011-D-20170531-16-20	16-20
SB-04	5/31/2017	116	30	20-25	60	SB03-012-N-20170531-23-25	23-25
				0-5	25		
				5-10	60	SB04-073-N-20170605-8-10	8-10
				10-15	70	SB04-013-N-20170531-13-15	13-15
				15-20	93	SB04-014-N-20170531-18-20	18-20
				20-25	82	SB04-015-N-20170531-21-23	21-23
SB-05	5/31/2017	60	54			SB04-016-N-20170531-23-25	23-25
				0-5	60		
				5-10	75		
				10-15	63	SB05-017-N-20170531-13-15	13-15
				15-20	90	SB05-018-N-20170531-18-20	18-20
SB-06	5/31/2017	72	54	20-24.5	65	SB05-019-N-20170531-22.5-24.5	22.5-24.5
				0-5	53		

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Boring Number	Date	Location (Inches)		Soil Core Section (Feet)	% Recovery	Sample Number	Sample Depth (Feet)
		North Wall	East Wall				
				5-10	77	SB06-074-N-20170605-8-10	8-10
				10-15	67	SB06-020-N-20170531-13-15	13-15
				15-20	90	SB06-021-N-20170531-16-20	16-20
						SB06-022-D-20170531-16-20	16-20
				20-24	68	SB06-023-N-20170531-22-24	22-24
SB-07	5/31/2017	82	77	0-5	40		
				5-10	63	SB07-075-N-20170605-7-9	7-9
						SB07-076-N-20170605-7-9	7-9
				10-15	40	SB07-024-N-20170531-13-15	13-15
				15-20	87	SB07-025-N-20170531-18-20	18-20
				20-24.5	72	SB07-026-N-20170531-22.5-24.5	22.5-24.5
SB-08	5/31/2017	102	75	0-5	40		
				5-10	70	SB08-027-N-20170531-8-10	8-10
				10-15	62	SB08-028-N-20170531-13-15	13-15
				15-20	50	SB08-029-N-20170531-18-20	18-20
				20-24	40	SB08-030-N-20170531-23.5-24	23.5-24
SB-09	6/1/2017	123	73	0-5	28		
				5-10	72	SB09-031-N-20170601-8-10	8-10
				10-15	68	SB09-032-N-20170601-13-15	13-15
				15-20	85	SB09-033-N-20170601-16-20	16-20
						SB09-034-D-20170601-16-20	16-20
				20-24	93	SB09-035-N-20170531-22-24	22-24
SB-10	6/1/2017	129	53	0-5	13		
				5-10	38	SB10-077-N-20170605-8-10	8-10
				10-15	67	SB10-036-N-20170601-13-15	13-15
SB-11	6/1/2017	113	49	0-5	5		
				5-10	37	SB11-037-N-20170601-8-10	8-10
				10-15	34		
				15-20	63	SB11-038-N-20170601-18-20	18-20
				20-24	63	SB11-039-N-20170601-21-24	21-24

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Boring Number	Date	Location (Inches)		Soil Core Section (Feet)	% Recovery	Sample Number	Sample Depth (Feet)
		North Wall	East Wall				
						SB11-040-D-20170601-21-24	21-24
SB-12	6/1/2017	113	36	0-5	20		
				5-10	43	SB12-041-N-20170601-8-10	8-10
				10-15	5		
SB-13	6/2/2017	78	30	0-5	53		
				5-10	80	SB13-042-N-20170602-8-10	8-10
				10-15	58	SB13-078-N-20170605-13-15	13-15
				15-20	76	SB13-043-N-20170602-18-20	18-20
				20-23	82	SB13-044-N-20170602-21-23	21-23
SB-14	6/2/2017	105	34	0-5	20		
				5-10	53	SB14-079-N-20170605-8-10	8-10
				10-15	23		
				15-20	85	SB14-045-N-20170602-16-18	16-18
				20-23	59	SB14-046-N-20170602-21-23	21-23
SB-15	6/2/2017	117	22	0-5	Hand Auger		
				5-10	60	SB15-080-N-20170605-8-10	8-10
				10-15	75	SB15-047-N-20170602-13-15	13-15
				15-20	100	SB15-048-N-20170602-18-20	18-20
				20-24	78	SB15-049-N-20170602-22-24	22-24
SB-16	6/2/2017	94	23	0-5	Hand Auger		
				5-10	67	SB16-050-N-20170602-8-10	8-10
				10-15	62	SB16-051-N-20170602-13-15	13-15
				15-20	88	SB16-052-N-20170602-16-20	16-20
						SB16-053-D-20170602-16-20	16-20
				20-24	37	SB16-054-N-20170602-22-24	22-24
SB-17	6/2/2017	71	25	0-5	50		
				5-10	92		
				10-15	68	SB17-055-N-20170602-13-15	13-15
				15-20	78	SB17-056-N-20170602-18-20	18-20

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Boring Number	Date	Location (Inches)		Soil Core Section (Feet)	% Recovery	Sample Number	Sample Depth (Feet)
		North Wall	East Wall				
				20-23	60	SB17-057-N-20170602-21-23	21-23
SB-18	6/2/2017	106	58	0-5	36		
				5-10	65	SB18-058-N-20170602-7-9	7-9
				10-15	70	SB18-059-N-20170602-13-15	13-15
				15-20	67	SB18-060-N-20170602-18-20	18-20
				20-24	37	SB18-061-N-20170602-22-24	22-24
SB-19	6/3/2017	120	60	0-5	27		
				5-10	55	SB19-081-N-20170605-7-9	7-9
				10-15	73	SB19-062-N-20170603-13-15	13-15
						SB19-063-D-20170603-13-15	13-15
				15-20	85	SB19-064-N-20170603-18-20	18-20
				20-24	72	SB19-065-N-20170603-22-24	22-24
SB-20	6/3/2017	126	38	0-5	29		
				5-10	55	SB20-082-N-2017-605-8-10	8-10
				10-15	48	SB20-066-N-20170603-13-15	13-15
				15-20	70	SB20-067-N-20170603-18-20	18-20
				20-24.5	87	SB20-068-N-20170603-22-24	22.5-24.5
SB-21	6/3/2017	80	60	0-5	34		
				5-10	29	SB21-069-N-20170603-8.5-10	8.5-10
				10-15	20		
				15-20	61	SB21-070-N-20170603-18-20	18-20
				20-24	72	SB21-071-N-20170603-22-24	22-24
				24-26.5	50	SB21-072-N-20170605-24-25.5	24-26.5
SB-22	6/5/2017	110	66	0-5	0		
				5-10	43	SB22-083-N-20170605-8-10	8-10
				10-15	53	SB22-084-N-20170605-13-15	13-15
				15-20	78	SB22-085-N-20170605-16-20	16-20
						SB22-086-D-20170605-16-20	16-20
				20-25	93	SB22-087-N-20170605-23-25	23-25

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Thermo Eberline, LLC
Santa-Fe, New Mexico

Boring Number	Date	Location (Inches)		Soil Core Section (Feet)	% Recovery	Sample Number	Sample Depth (Feet)
		North Wall	East Wall				
SB-23	6/5/2017			0-5	0		
				5-10	34	SB23-088-N-20170605-8-10	8-10
				10-15	48	SB23-089-N-20170605-12.5-14.5	12.5-14.5
				15-20	70	SB23-090-N-20170605-18-20	18-20
				20-25	81	SB23-091-N-20170605-23-25	23-25
SB-24	6/5/2017			0-5	10		
				5-10	62	SB24-092-N-20170605-8-10	8-10
				10-15	65	SB24-093-N-20170605-13-15	13-15
				15-20	65	SB24-094-N-20170605-16-20	16-20
						SB24-095-N-20170605-16-20	16-20
				20-25	35	SB24-096-N-20170605-23.5-25	23.5-25
		Sample in Drill Casing Tip		25-25.5	NA	SB24-102-20170605-drill tip	25 - 25.5
SB-25	6/5/2017			0-5	60	SB25-097-N-20170605-3-5	3-5
				5-10	47	SB25-098-N-20170605-8-10	8-10
				10-15	55	SB25-099-N-20170605-13-15	13-15
				15-20	50	SB25-100-N-20170605-18-20	18-20
				20-25	72	SB25-101-N-20170605-23-25	23-25
SB-26	6/6/2017			0-5	14		
				5-10	30	SB26-103-N-20170606-8.5-10	8.5-10
				10-15	50	SB26-104-N-20170606-13-15	13-15
				15-20	63	SB26-105-N-20170607-17-20	17-20
						SB26-106-D-20170607-17-20	17-20
SB-27				20-25	74	SB26-107-N-20170607-23-25	23-25
				0-5	15		
				5-10	32	SB27-108-N-20170607-8.5-10	8.5-10
				10-15	78	SB27-109-N-20170607-13-15	13-15
				15-20	58	SB27-110-N-20170607-18-20	18-20
				20-25	76	SB27-111-N-20170607-21-23	21-23
						SB27-112-N-20170607-23-25	23-25

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Thermo Eberline, LLC
Santa-Fe, New Mexico

Boring Number	Date	Location (Inches)		Soil Core Section (Feet)	% Recovery	Sample Number	Sample Depth (Feet)
		North Wall	East Wall				
SB-28				0-5	20		
				5-10	65	SB28-113-N-20170607-8-10	8-10
				10-15	72	SB28-114-N-20170607-13-15	13-15
				15-20	60	SB28-115-N-20170607-18-20	18-20
				20-24.5	73	SB28-116-N-20170607-21-23	21-23
						SB28-117-N-20170607-23-24.5	23-24.5
				24.5-30		SB28-118-N-20170607-26-28	26-28
SB-29				0-4	43		
				4-9	79	SB29-119-N-20170607-6-7.5	6-7.5
						SB29-120-N-20170607-7.5-8	7.5-8
				9-14	100	SB29-121-N-20170607-9-14	9-14
						SB29-122-D-20170607-9-14	9-14
				14-19	100	SB29-123-N-20170607-17-19	17-19
				19-24	84	SB29-124-N-20170607-21.5-23	21.5-23
				24-24.5	25	SB29-125-N-20170607-24-24.5	24-24.5
SB-30				0-4	27		
				4-9	92	SB30-126-N-20170607-7-9	7-9
				9-14	100	SB30-127-N-20170607-12-14	12-14
				14-19	100	SB30-128-N-20170607-17-19	17-19
				19-24	100	SB30-129-N-20170607-22-24	22-24

Table 2 - Surface Soil Data (Cs-137)
High Range Well Location
Thermo Eberline, LLC
Santa-Fe, New Mexico

Sample Number	Collection Date	Isotope	Laboratory Results (pCi/g)	Laboratory Qualifier	Minimum Detection Limit (pCi/g)
SS-A2-0-6-N-20170526	05/26/17	Cesium-137	31.4		0.0761
SS-A2-6-12-N-20170526	05/26/17	Cesium-137	7.67		0.0346
SS-A4-0-6-N-20170526	05/26/17	Cesium-137	0.154		0.0264
SS-A4-6-12-N-20170526	05/26/17	Cesium-137	0.137		0.0426
SS-A6-0-6-N-20170526	05/26/17	Cesium-137	0.770		0.0306
SS-A6-6-12-N-20170526	05/26/17	Cesium-137	2.55		0.0474
SS-A8-0-6-N-20170526	05/26/17	Cesium-137	9.18		0.0373
SS-A8-6-12-N-20170526	05/26/17	Cesium-137	2.02		0.032
SS-AB3-0-6-N-20170526	05/26/17	Cesium-137	0.0365	U	0.051
SS-AB3-6-12-D-20170526	05/26/17	Cesium-137	1.58		0.0335
SS-AB3-6-12-N-20170526	05/26/17	Cesium-137	1.65		0.040
SS-AB5-0-6-N-20170526	05/26/17	Cesium-137	0.0339		0.0282
SS-AB5-6-12-N-20170526	05/26/17	Cesium-137	0.678		0.0229
SS-AB7-0-6-N-20170526	05/26/17	Cesium-137	1.05		0.0298
SS-AB7-6-12-N-20170526	05/26/17	Cesium-137	0.917		0.0442
SS-B3-0-6-N-20170526	05/26/17	Cesium-137	0.589		0.0356
SS-B3-6-12-N-20170526	05/26/17	Cesium-137	0.486		0.0305
SS-B5-0-6-N-20170526	05/26/17	Cesium-137	0.905		0.0259
SS-B5-6-12-N-20170526	05/26/17	Cesium-137	0.0265	U	0.0451
SS-B7-0-6-N-20170526	05/26/17	Cesium-137	3.60		0.039
SS-B7-6-12-D-20170526	05/26/17	Cesium-137	5.18		0.0509
SS-B7-6-12-N-20170526	05/26/17	Cesium-137	1.15		0.0363

U = Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD

pCi/g = picoCuries/gram

Table 3 - Analytical Summary - Soil Boring Data
High Range Well Location
Thermo Eberline, LLC
Santa-Fe, New Mexico

Boring No	Date	Sample Number	Sample Depth (Feet)	ISOCS Results Cs-137 (pCi/g)	GEL Result Cs-137 (pCi/g)
SB-01	5/30/2017				
		SB01-001-N-20170530-13-15	13-15	ND	NA
		SB01-002-N-20170530-18-20	18-20	ND	NA
		SB01-003-N-20170530-23-25	23-25	ND	U
SB-02	5/30/2017				
		SB02-004-N-20170530-8-10	8-10	ND	U
		SB02-005-N-20170530-14-16	14-16	250.3	250
		SB02-006-N-20170530-18-20	18-20	2.9	NA
		SB02-007-N-20170530-21.5-23.5	21.5-23.5	3,256.4	3020
		SB02-008-N-20170530-23.5-25	23.5-25	1.6	1.75
SB-03	5/31/2017				
		SB03-009-N-20170531-13-15	13-15	ND	U
		SB03-010-N-20170531-16-20	16-20	ND	NA
		SB03-011-D-20170531-16-20	16-20	ND	NA
		SB03-012-N-20170531-23-25	23-25	ND	U
SB-04	5/31/2017				
		SB04-073-N-20170605-8-10	8-10	ND	U
		SB04-013-N-20170531-13-15	13-15	ND	NA
		SB04-014-N-20170531-18-20	18-20	ND	NA
		SB04-015-N-20170531-21-23	21-23	ND	U
		SB04-016-N-20170531-23-25	23-25	ND	U
SB-05	5/31/2017				
		SB05-017-N-20170531-13-15	13-15	ND	NA
		SB05-018-N-20170531-18-20	18-20	ND	NA
		SB05-019-N-20170531-22.5-24.5	22.5-24.5	ND	U
SB-06	5/31/2017				
		SB06-074-N-20170605-8-10	8-10	ND	U

Table 3 - Analytical Summary - Soil Boring Data
High Range Well Location
Thermo Eberline, LLC
Santa-Fe, New Mexico

Boring No	Date	Sample Number	Sample Depth (Feet)	ISOCS Results Cs-137 (pCi/g)	GEL Result Cs-137 (pCi/g)
		SB06-020-N-20170531-13-15	13-15	ND	U
		SB06-021-N-20170531-16-20	16-20	ND	NA
		SB06-022-D-20170531-16-20	16-20	ND	NA
		SB06-023-N-20170531-22-24	22-24	ND	U
SB-07	5/31/2017				
		SB07-075-N-20170605-7-9	7-9	ND	NA
		SB07-076-N-20170605-7-9	7-9	ND	U
		SB07-024-N-20170531-13-15	13-15	ND	NA
		SB07-025-N-20170531-18-20	18-20	ND	NA
		SB07-026-N-20170531-22.5-24.5	22.5-24.5	ND	U
SB-08	5/31/2017				
		SB08-027-N-20170531-8-10	8-10	ND	U
		SB08-028-N-20170531-13-15	13-15	ND	NA
		SB08-029-N-20170531-18-20	18-20	ND	NA
		SB08-030-N-20170531-23.5-24	23.5-24	ND	U
SB-09	6/1/2017				
		SB09-031-N-20170601-8-10	8-10	ND	NA
		SB09-032-N-20170601-13-15	13-15	ND	NA
		SB09-033-N-20170601-16-20	16-20	ND	NA
		SB09-034-D-20170601-16-20	16-20	ND	NA
		SB09-035-N-20170531-22-24	22-24	ND	NA
SB-10	6/1/2017				
		SB10-077-N-20170605-8-10	8-10	ND	U
		SB10-036-N-20170601-13-15	13-15	ND	U
SB-11	6/1/2017				
		SB11-037-N-20170601-8-10	8-10	1,115.4	972
		SB11-038-N-20170601-18-20	18-20	ND	NA
		SB11-039-N-20170601-21-24	21-24	0.3	NA
		SB11-040-D-20170601-21-24	21-24	0.4	0.48

Table 3 - Analytical Summary - Soil Boring Data
High Range Well Location
Thermo Eberline, LLC
Santa-Fe, New Mexico

Boring No	Date	Sample Number	Sample Depth (Feet)	ISOCS Results Cs-137 (pCi/g)	GEL Result Cs-137 (pCi/g)
SB-12	6/1/2017				
		SB12-041-N-20170601-8-10	8-10	0.9	0.794
SB-13	6/2/2017				
		SB13-042-N-20170602-8-10	8-10	ND	U
		SB13-078-N-20170605-13-15	13-15	ND	NA
		SB13-043-N-20170602-18-20	18-20	ND	NA
		SB13-044-N-20170602-21-23	21-23	ND	NA
SB-14	6/2/2017				
		SB14-079-N-20170605-8-10	8-10	5.5	4.9
		SB14-045-N-20170602-16-18	16-18	ND	UI
		SB14-046-N-20170602-21-23	21-23	ND	NA
SB-15	6/2/2017				
		SB15-080-N-20170605-8-10	8-10	ND	U
		SB15-047-N-20170602-13-15	13-15	ND	NA
		SB15-048-N-20170602-18-20	18-20	ND	NA
		SB15-049-N-20170602-22-24	22-24	ND	U
SB-16	6/2/2017				
		SB16-050-N-20170602-8-10	8-10	ND	U
		SB16-051-N-20170602-13-15	13-15	ND	NA
		SB16-052-N-20170602-16-20	16-20	ND	NA
		SB16-053-D-20170602-16-20	16-20	ND	NA
		SB16-054-N-20170602-22-24	22-24	ND	U
SB-17	6/2/2017				
		SB17-055-N-20170602-13-15	13-15	ND	NA
		SB17-056-N-20170602-18-20	18-20	ND	NA
		SB17-057-N-20170602-21-23	21-23	ND	NA
SB-18	6/2/2017				

Table 3 - Analytical Summary - Soil Boring Data
High Range Well Location
Thermo Eberline, LLC
Santa-Fe, New Mexico

Boring No	Date	Sample Number	Sample Depth (Feet)	ISOCS Results Cs-137 (pCi/g)	GEL Result Cs-137 (pCi/g)
		SB18-058-N-20170602-7-9	7-9	607.1	603
		SB18-059-N-20170602-13-15	13-15	3.0	NA
		SB18-060-N-20170602-18-20	18-20	2.1	NA
		SB18-061-N-20170602-22-24	22-24	820.4	773
SB-19	6/3/2017				
		SB19-081-N-20170605-7-9	7-9	0.2	0.257
		SB19-062-N-20170603-13-15	13-15	ND	NA
		SB19-063-D-20170603-13-15	13-15	ND	NA
		SB19-064-N-20170603-18-20	18-20	ND	NA
		SB19-065-N-20170603-22-24	22-24	ND	U
SB-20	6/3/2017				
		SB20-082-N-2017-605-8-10	8-10	ND	UI
		SB20-066-N-20170603-13-15	13-15	ND	NA
		SB20-067-N-20170603-18-20	18-20	ND	NA
		SB20-068-N-20170603-22-24	22.5-24.5	ND	UI
SB-21	6/3/2017				
		SB21-069-N-20170603-8.5-10	8.5-10	0.09	0.0866
		SB21-070-N-20170603-18-20	18-20	ND	NA
		SB21-071-N-20170603-22-24	22-24	ND	NA
		SB21-072-N-20170605-24-25.5	24-26.5	ND	U
SB-22	6/5/2017				
		SB22-083-N-20170605-8-10	8-10	0.3	0.313
		SB22-084-N-20170605-13-15	13-15	ND	U
		SB22-085-N-20170605-16-20	16-20	ND	NA
		SB22-086-D-20170605-16-20	16-20	ND	NA
		SB22-087-N-20170605-23-25	23-25	ND	U
SB-23	6/5/2017				
		SB23-088-N-20170605-8-10	8-10	ND	U
		SB23-089-N-20170605-12.5-14.5	12.5-14.5	ND	NA

Table 3 - Analytical Summary - Soil Boring Data
High Range Well Location
Thermo Eberline, LLC
Santa-Fe, New Mexico

Boring No	Date	Sample Number	Sample Depth (Feet)	ISOCS Results Cs-137 (pCi/g)	GEL Result Cs-137 (pCi/g)
		SB23-090-N-20170605-18-20	18-20	ND	NA
		SB23-091-N-20170605-23-25	23-25	ND	U
SB-24	6/5/2017				
		SB24-092-N-20170605-8-10	8-10		NA
		SB24-093-N-20170605-13-15	13-15		NA
		SB24-094-N-20170605-16-20	16-20		6.63
		SB24-095-N-20170605-16-20	16-20		NA
		SB24-096-N-20170605-23.5-25	23.5-25		697
		SB24-102-20170605-drill tip	25 - 25.5	7.7	7.41
				Limited Sample Volume	
SB-25	6/5/2017	SB25-097-N-20170605-3-5	3-5	ND	NA
		SB25-098-N-20170605-8-10	8-10	ND	NA
		SB25-099-N-20170605-13-15	13-15	0.6	0.559
		SB25-100-N-20170605-18-20	18-20	ND	U
		SB25-101-N-20170605-23-25	23-25	ND	NA
SB-26	6/6/2017				
		SB26-103-N-20170606-8.5-10	8.5-10		8.71
		SB26-104-N-20170606-13-15	13-15		6.12
		SB26-105-N-20170607-17-20	17-20		NA
		SB26-106-D-20170607-17-20	17-20		NA
		SB26-107-N-20170607-23-25	23-25	ND	0.08
SB-27					
		SB27-108-N-20170607-8.5-10	8.5-10		2.25
		SB27-109-N-20170607-13-15	13-15		NA
		SB27-110-N-20170607-18-20	18-20		535
		SB27-111-N-20170607-21-23	21-23	37.2	NA
		SB27-112-N-20170607-23-25	23-25	0.2	0.279
SB-28					
		SB28-113-N-20170607-8-10	8-10		0.303
		SB28-114-N-20170607-13-15	13-15		0.715
		SB28-115-N-20170607-18-20	18-20		53.3

Table 3 - Analytical Summary - Soil Boring Data
High Range Well Location
Thermo Eberline, LLC
Santa-Fe, New Mexico

Boring No	Date	Sample Number	Sample Depth (Feet)	ISOCS Results Cs-137 (pCi/g)	GEL Result Cs-137 (pCi/g)
		SB28-116-N-20170607-21-23	21-23		2220
		SB28-117-N-20170607-23-24.5	23-24.5	242.1	NA
		SB28-118-N-20170607-26-28	26-28	1.4	1.81
SB-29					
		SB29-119-N-20170607-6-7.5	6-7.5	2,175.5	2020
		SB29-120-N-20170607-7.5-8	7.5-8		NA
		SB29-121-N-20170607-9-14	9-14		NA
		SB29-122-D-20170607-9-14	9-14		NA
		SB29-123-N-20170607-17-19	17-19		NA
		SB29-124-N-20170607-21.5-23	21.5-23		3510
		SB29-125-N-20170607-24-24.5	24-24.5	6.3	5.1
				Limited Volume Sample	
SB-30					
		SB30-126-N-20170607-7-9	7-9		NA
		SB30-127-N-20170607-12-14	12-14		NA
		SB30-128-N-20170607-17-19	17-19		NA
		SB30-129-N-20170607-22-24	22-24		NA
Open Soil Area		SS-130-20170607	Surface Composite	4.0	NA

ND - Not Detected by ISOCS

NA - Not Analyzed by GEL

U - Not detected by GEL above the MDL, MDA, MDC or LOD

pCi/g = picoCuries/gram

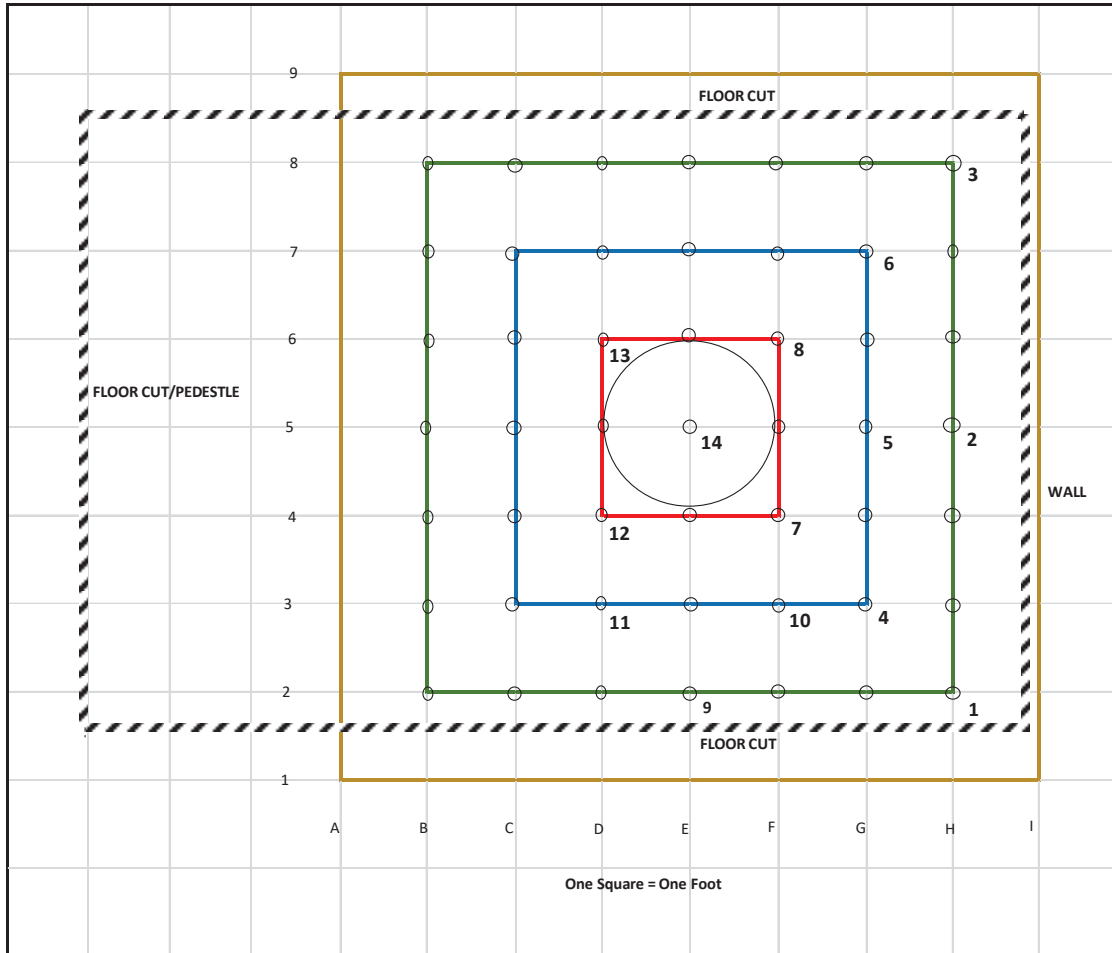


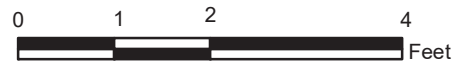
Figure 1 - Proposed Boring Grid
Thermo Eberline, LLC
5981 Airport Road
Santa Fe, New Mexico

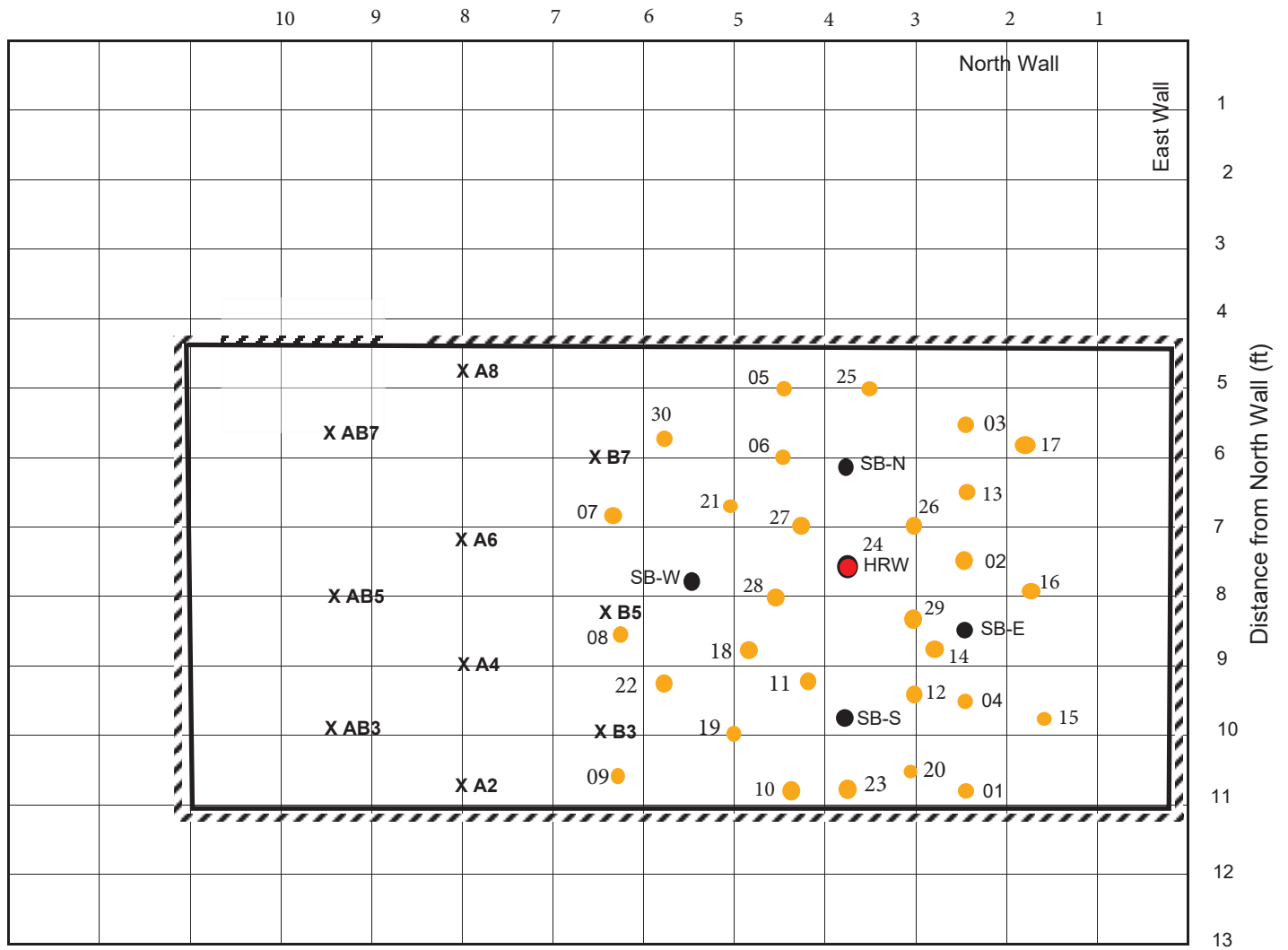


Legend:

○ Proposed Soil Boring Location

//// Open Soil / Concrete Slab Cut





CN Associates, Inc.

Figure 2 - Actual Sampling Locations

Thermo Eberline, LLC
5981 Airport Road
Santa Fe, New Mexico

Legend:

- Prior Soil Boring Location Soil
- Boring (2017)
- High Range Well Location
- X Surface Soil Sampling Location
- Boundary of Slab Cut

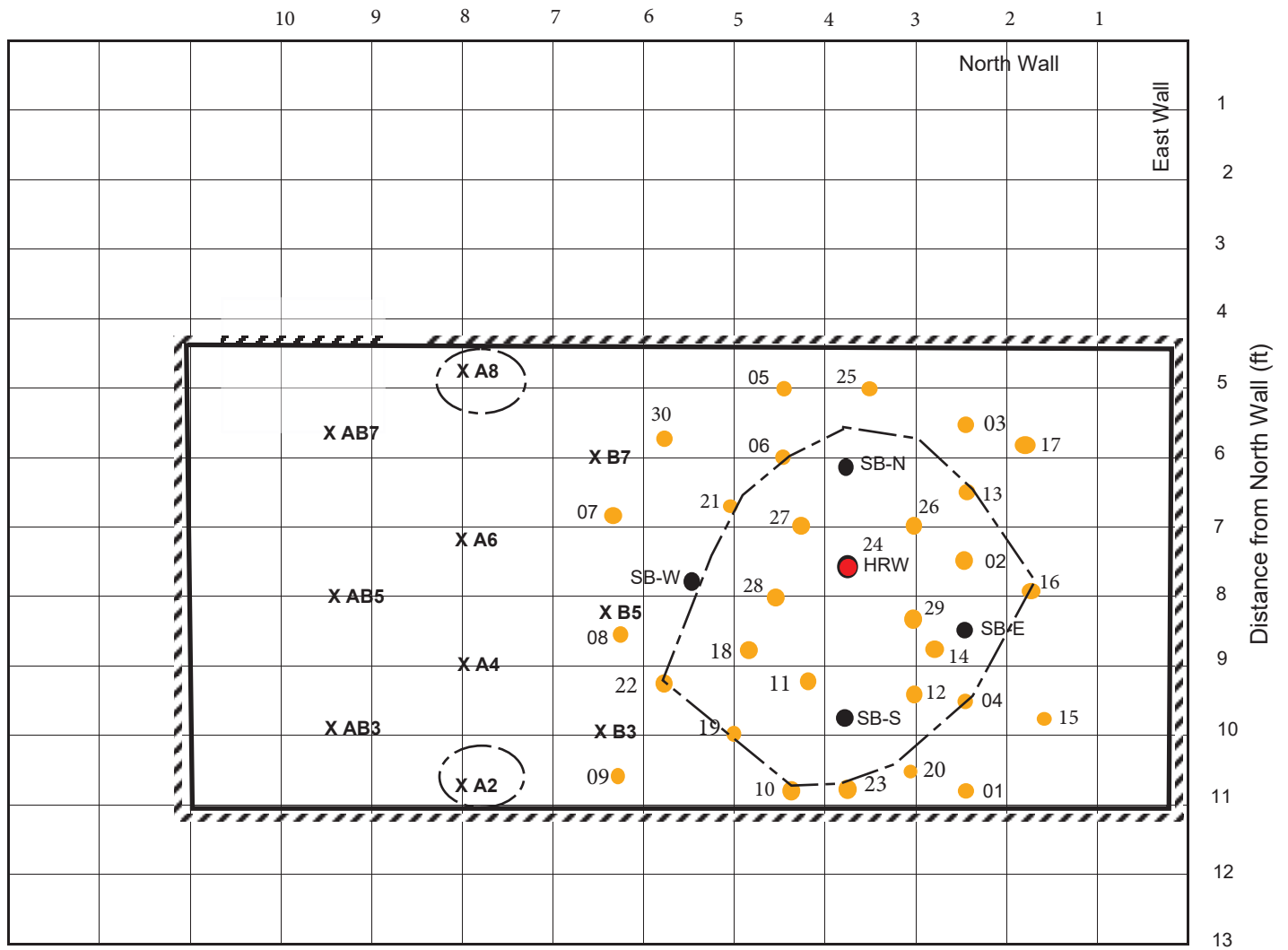


Figure 3 - Estimated Extent of Impacted Areas Requiring Removal

Thermo Eberline, LLC
5981 Airport Road
Santa Fe, New Mexico

Legend:

- Prior Soil Boring Location
- Soil Boring (2017)
- High Range Well Location
- X Surface Soil Sampling Location
- Boundary of Slab Cut
- - - - - Target Soil Excavation Areas



0 1 2 4 Feet

CN Associates, Inc.