

**CIMARRON CORPORATION
DESCRIPTION OF KERR-MCGEE TECHNICAL CENTER
TEST PIT CHARACTERIZATION AND EXCAVATION**

01/31/01

The uranium calibration test pit surface area and the immediate vicinity was 100% surveyed with an unshielded 3"x 0.5" NaI detector and a micro-R meter during the last week of September 2000. The results of this 100% survey with a 3"x0.5" NaI shielded detector indicated that three grid locations were greater than twice background. No locations exceeded twice background as measured with a micro-R meter. These three locations were sampled and were determined to be impacted, with the sample analysis results provided below:

Grid Location	Approximate Size	Sample Analysis Results (includes background)
785N - 66E	1 meter x 1 meter	53.1 pCi/g total uranium / 3.4 pCi/g total thorium
785N - 97E	1.5 meters x 1.5 meters	7.2 pCi/g total uranium / 2.3 pCi/g total thorium
785N - 99E	1.5 meters x 1.5 meters	7.9 pCi/g total uranium / 2.0 pCi/g total thorium

These three impacted locations were excavated and the materials were placed into roll-off containers for future shipment to Envirocare. Due to the proximity of the 785N-97E and 785N-99E grid locations, these two grid locations were completely excavated and thus the final characterization data for these two locations were combined, resulting in one composite sample from the excavated area. These locations were then re-sampled and the final characterization data for these locations is provided below:

Grid Location	Sample Analysis Results (includes background)
785N - 66E	3.5 pCi/g total uranium / 1.1 pCi/g total thorium
785N - 97E*	2.4 pCi/g total uranium / 2.4 pCi/g total thorium
785N - 99E*	2.4 pCi/g total uranium / 2.4 pCi/g total thorium

* Combined composite sample from excavated area

The top of each uranium calibration test pit consisted of a 6-inch thick concrete cap located on the surface. A 2-meter linear grid was then established surrounding the uranium calibration test pit area that was 1-meter offset from the actual test pits. Each of the 2-meter grid intersects were cored down to a depth of 3 meters during the last week of September 2000. Composite samples were obtained at intervals of 0-0.5, 0.5-1, 1-2, and 2-3 meters. A total of 72 samples were obtained during this characterization event. All sample results obtained from this characterization effort ranged from 0.0 to 3.2 pCi/g total uranium including background and 0.8 to 2.8 pCi/g total thorium including background, indicating that both surface and subsurface soils immediately adjacent to the uranium calibration tests pits were non-impacted.

The excavation of the uranium calibration test pits was initiated during the week of November 6, 2000. Each of the five uranium calibration test pits caissons were laid over on their sides and were removed from the excavation. After removal of the caissons containing the uranium source material from the excavation, they were re-located to an adjacent level work area where the caissons were opened. All of the contents of each caisson were placed into roll-off containers and the caissons were then crushed and also placed into the roll-off containers. The removal of the caissons from the excavation, the relocation to the adjacent work area, the removal of the contents and placement of the materials and the crushed caissons into roll-off containers was completed by November 15, 2000.

The DCGL was derived for the uranium calibration test pit excavation and was determined to be 11.7 pCi/g total uranium above background. The excavated area (bottom of trench and side walls) was then characterized and the sample result for the following location exceeded the DCGL_w:

Grid Location	Sample Analysis Results (includes background)
776.2N - 101.4E	16.8 pCi/g total uranium

Additional characterization (composite samples were obtained from depth intervals of 0.0-0.15m, 0.15-0.5m and 0.5-1.0m) was then performed in the near vicinity of the sample location listed above to further delineate the impacted area during the week of December 4, 2000. The sample results for the following locations exceeded the DCGL_w:

Grid Location	Sample Analysis Results (includes background)
778.1N - 94.9E	17.0 pCi/g total uranium (0-15cm depth sample)
778.1N - 90.5E	14.8 pCi/g total uranium (0-15cm depth sample)
778.1N - 90.5E	40.2 pCi/g total uranium (15cm-0.5m depth sample)
778.1N - 90.5E	27.3 pCi/g total uranium (0.5m-1.0m depth sample)

Impacted soils were then removed from the uranium calibration test pit excavation from the locations listed above down to a depth of approximately 1 meter on January 15, 2001. After removal of these impacted soils, additional characterization was performed on January 16, 2001 in the impacted area (west end of the uranium calibration test pit excavation) to ensure that all impacted soils had been identified and removed. As a result of this additional characterization, the following locations exceeded the DCGL_w:

Grid Location	Sample Analysis Results (includes background)
779N - 89E	13.6 pCi/g total uranium (0-15cm depth sample)
777N - 87E	16.0 pCi/g total uranium (0-15cm depth sample)
777N - 89E	13.0 pCi/g total uranium (0-15cm depth sample)
777N - 87E	11.8 pCi/g total uranium (0.15-0.5m depth sample)
779N - 93E	13.8 pCi/g total uranium (0-15cm depth sample)

Impacted soils were then removed from the uranium calibration test pit excavation from the locations listed above down to a depth of approximately 1 meter on January 17, 2001. Final characterization samples were then obtained where possible in these locations (some of these locations were excavated down to rock) and in the south and west side walls at the bottom of the excavation. All final characterization data demonstrated that all sample locations were below the DCGL_w.

All non-impacted soils removed from the uranium calibration test pit excavation were placed in a stockpile located adjacent to the excavation. Composite samples to depth were collected from the entire stockpile area. A total of 41 samples were collected from the stockpile area. Sample results obtained from this characterization effort ranged from 0.0 to 5.7 pCi/g total uranium including background and 1.7 to 2.8 pCi/g total thorium including background and were well below the DCGL_w as shown in the attachment titled "Test Pit Bottom Final Characterization Survey Soil Samples - Depth & Surface Soil Samples".

A total of 291 surface and subsurface samples were obtained from the non-impacted areas in order to establish background levels. The average background level for total uranium is 1.8pCi/g and 2.3 pCi/g for total thorium.

Additionally, the following tables are attached for your information:

1. Test Pit Pre-Excavation - Sampling of adjacent soils
2. Test Pit Bottom Final Characterization Survey Soil Samples - Depth & Surface Soil Samples
3. Test Pit Sidewall Samples
4. Test Pit Overburden/Stockpile - Total Depth Composite Soil Samples

KERR-McGEE CORPORATION
TECHNICAL CENTER
Test Pit Pre-Excavation Sampling of Adjacent Soil

QAQC-158

REV.1

DATE 9/20/00

LN #	GRID NUMBER				3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	pCi/g							
								0 - .15m		.15 - 1m		1 - 2m		2 - 3m	
								Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)
1	777	N-	91	E	1600	7	8	3.0	0.8	1.7	2.3	2.1	2.2	1.6	2.3
2	777	N-	93	E	1540	7	9	1.4	1.3	0.3	2.2	0.2	2.5	1.7	2.1
3	777	N-	95	E	1680	8	8	1.6	0.8	1.2	2.4	0.9	2.4	0.7	2.1
4	777	N-	97	E	2260	9	9	1.6	0.6	1.9	2.0	1.5	2.3	1.0	2.3
5	777	N-	99	E	1560	8	9	0.5	0.6	0.7	2.2	1.3	2.2	0.6	2.3
6	777	N-	102	E	1720	8	8	0.7	1.3	1.5	2.1	0.7	2.4	1.7	2.2
7	777	N-	105	E	3560	12	10	0.9	2.2	0.0	2.3	0.9	2.1	1.4	2.8
8	777	N-	108	E	3610	10	10	1.2	2.4	0.0	2.7	0.6	2.2	0.2	2.5
9	779	N-	111	E	3950	15	14	2.2	2.6	0.4	2.7	1.4	2.1	1.1	2.3
10	781	N-	91	E	3140	12	13	0.8	1.6	0.5	2.4	0.9	1.9	0.7	2.4
11	781	N-	93	E	3210	13	12	0.5	0.8	0.6	2.0	0.9	2.4	0.2	2.2
12	781	N-	95	E	1790	10	9	0.9	0.8	1.4	2.1	0.7	2.3	2.4	2.2
13	781	N-	97	E	2030	8	8	1.2	1.5	1.6	2.1	1.4	2.2	2.4	2.0
14	781	N-	99	E	2090	10	9	1.8	0.8	2.7	2.3	2.4	2.3	2.7	1.7
15	781	N-	102	E	1830	8	8	0.2	0.8	2.9	2.1	1.1	2.0	1.9	2.4
16	781	N-	105	E	2410	9	9	0.8	2.4	0.7	1.5	0.6	2.3	0.3	2.7
17	781	N-	108	E	3630	13	11	1.9	2.7	0.9	2.5	0.3	2.4	1.2	2.8
18	789	N-	98	E	1990	9	9	3.0	1.6	3.2	2.3	0.5	2.3	1.4	2.5
19		N-		E											
20		N-		E											

INSTRUMENTS:

LUDLUM MICRO 'R' METER -

LUDLUM 2220, LEAD-SHIELDED 3" X 1/2" NaI DETECTOR

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

BACKGROUND NOT SUBTRACTED

RESULTS IN:pCi/g
pCi/gBACKGROUNDTotal U 1.8
Th(Nat) 2.3MDA1.7
0.4

KERR-McGEE CORPORATION
 TECHNICAL CENTER
 Test Pit Bottom Final Characterization Survey Soil Samples
 Depth & Surface Soil Samples

QAQC-158
 REV.1

DATE 1/16/01

LN #	GRID NUMBER				3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	pCi/g									
								0 - .15m		.15 - 0.5m		0.5 - 1.0m		1 - 2m		2 - 3m	
								Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)
1	776.2	N-	102.6	E	4300	13	12	1.8	1.8								
2	776.2	N-	104.8	E	4320	12	13	0.8	2.3								
3	776.2	N-	106.9	E	4510	13	13	1.1	2.5								
4	776.2	N-	109.1	E	4750	13	13	2.4	2.1								
5	776.2	N-	111.3	E	4820	12	13	2.8	1.8								
6	777	N-	87	E	5140	17	14	ROCK	ROCK								
7	777	N-	89	E	3730	14	14	ROCK	ROCK								
8	777	N-	91	E	4790	15	14	6.6	1.9	6.1	0.9						
9	777	N-	93	E	4420	14	14	8.6	1.4	6.0	1.5						
10	777	N-	95	E	4280	14	13	3.9	1.5								
11	777	N-	97	E	4570	15	13	5.4	1.0								
12	777	N-	99	E	4930	16	13	10.4	1.3								
13	777	N-	101	E	4650	16	14	6.6	1.4								
14	777	N-	102.5	E	4620	13	13	0.8	2.3								
15	777	N-	107.5	E	4450	13	13	2.2	2.0								
16	778.1	N-	101.5	E	4320	13	12	1.5	2.2								
17	778.1	N-	103.7	E	4450	13	12	2.8	2.0								
18	778.1	N-	105.8	E	4780	12	12	1.9	2.2								
19	778.1	N-	108.0	E	4900	12	12	2.8	2.5								
20	778.1	N-	110.2	E	4750	13	12	1.5	2.4								

INSTRUMENTS:

LUDLUM MICRO 'R' METER -

LUDLUM 2220, LEAD SHIELDED 3" X 1/2" NaI DETECTOR

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

BACKGROUND NOT SUBTRACTED

RESULTS IN:pCi/g
pCi/gBACKGROUND

Total U	1.8	1.7
Th(Nat)	2.3	0.4

MDA

KERR-McGEE CORPORATION
TECHNICAL CENTER
Test Pit Bottom Final Characterization Survey Soil Samples
Depth & Surface Soil Samples

QAQC-158
REV.1

DATE 1/16/01

LN #	GRID NUMBER				3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	pCi/g									
								0 - .15"		.15" - 0.5'		0.5' - 1.0'		2' - 3'		3' - 4'	
								Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)
1	778.1	N-	112.4	E	4520	13	13	2.6	1.8								
2	779	N-	87	E	4850	15	13	0.7	2.0	1.0	1.2						
3	779	N-	89	E	4090	14	14	ROCK	ROCK								
4	779	N-	91	E	4390	16	14	8.1	1.6	4.1	1.1						
5	779	N-	93	E	4500	14	14	11.3	1.7	5.2	2.6	3.6	1.6				
6	779	N-	95	E	4290	14	12	4.2	2.2	2.0	2.1	2.6	1.2				
7	779	N-	97	E	4600	14	13	2.9	2.2	0.2	2.0	4.7	1.5				
8	779	N-	99	E	3720	16	13	2.8	1.7	0.2	2.5	3.5	1.7				
9	781	N-	87	E	4170	15	13	2.5	2.2	3.2	1.6	2.8	1.7				
10	781	N-	89	E	4600	16	14	1.7	1.8	2.7	2.2	1.4	1.7				
11	781	N-	91	E	4060	16	13	3.2	1.7	3.1	2.1	1.0	1.6				
12	781	N-	93	E	4260	16	12	3.0	2.1	0.1	2.4	3.2	1.3				
13	781	N-	95	E	4360	14	12	1.7	2.2	0.3	2.3	2.2	1.8				
14	781	N-	97	E	3830	15	14	4.0	1.9	2.1	2.1	1.7	2.2				
15	781	N-	99	E	4890	18	17	1.4	2.0	2.7	1.7	0.7	2.0				
16	779	N-	93	E	4500	14	14	ROCK	ROCK								
17	779	N-	87	E	4850	15	13	ROCK	ROCK								
18	770	N-	109	E	4930	13	12	1.9	2.4								
19	777	N-	112.5	E	4720	13	13	1.9	1.9								
20	778	N-	87	E	5210	12	13	0.9	2.5								
21	779	N-	88	E	4900	12	13	2.4	2.2								

INSTRUMENTS:

LUDLUM MICRO 'R' METER -

LUDLUM 2220, LEAD SHIELDED 3" X 1/2" NaI DETECTOR

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

BACKGROUND NOT SUBTRACTED

RESULTS IN:

pCi/g
pCi/g

BACKGROUND

Total U 1.8
Th(Nat) 2.3

MDA

1.7
0.4

KERR-McGEE CORPORATION
 TECHNICAL CENTER
 Test Pit Bottom Final Characterization Survey Soil Samples
 Depth & Surface Soil Samples

QAQC-158
 REV.1

DATE 1/16/01

LN #	GRID NUMBER				OCATION	MICRO R' SURF	MICRO R' 1 METER	pCi/g									
								0 - .15m		.15 - 0.5m		0.5 - 1.0m		1 - 2m		2 - 3m	
								Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)
1	778	N-	86	E	S.W.		5.2	1.9									
2	778	N-	86	E	SOUTH		6.0	2.1									
3	781	N-	86	E	N.W.		2.9	2.1									
4	781	N-	86	E	NORTH		3.5	2.3									
5		N-		E													
6		N-		E													
7		N-		E													
8		N-		E													
9		N-		E													
10		N-		E													
11		N-		E													
12		N-		E													
13		N-		E													
14		N-		E													
15		N-		E													
16		N-		E													
17		N-		E													
18		N-		E													
19		N-		E													
20		N-		E													

INSTRUMENTS:

LUDLUM MICRO 'R' METER -

LUDLUM 2220, LEAD SHIELDED 3" X 1/2" NaI DETECTOR

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

BACKGROUND NOT SUBTRACTED

RESULTS IN:pCi/g
pCi/gBACKGROUNDTotal U 1.8
Th(Nat) 2.3MDA1.7
0.4

KERR-McGEE CORPORATION
 TECHNICAL CENTER
 Test Pit Sidewall Soil Samples
 Drilling Sample Form

COMPOSITE SAMPLES

DATE 1/23/01

LN #	GRID NUMBER					3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	pCi/g										
									0 - .15m		.15 - 0.5m		0.5 - 1.0m		1 - 2m		2 - 3m		
									Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)	Total-U	Th (Nat)	
1	778	N-	86	E	S.W.			5.2	1.9										
2	778	N-	86	E	SOUTH			6.0	2.1										
3	781	N-	86	E	N.W.			2.9	2.1										
4	781	N-	86	E	NORTH			3.5	2.3										
5		N-		E															
6		N-		E															
7		N-		E															
8		N-		E															
9		N-		E															
10		N-		E															
11		N-		E															
12		N-		E															
13		N-		E															
14		N-		E															
15		N-		E															
16		N-		E															
17		N-		E															
18		N-		E															
19		N-		E															
20		N-		E															

INSTRUMENTS:

LUDLUM MICRO 'R' METER -

LUDLUM 2220, LEAD SHIELDED 3" X 1/2" NaI DETECTOR

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

BACKGROUND NOT SUBTRACTED

RESULTS IN:

BACKGROUND

MDA

pCi/g
 pCi/g

Total U 1.8
 Th(Nat) 2.3

1.7
 0.4

**KERR-McGEE CORPORATION
TECHNICAL CENTER
Test Pit Overburden/Stockpile
Total Depth Composite Soil Samples**

DATE: 12/20/00

LN #	GRID NUMBER					3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0 - 1m & 0 - 2m COMPOSITE	
									Total-U	Th (Nat)
1	760	N	-	110	E	3400	12	12	3.5	2.0
2	762.5	N	-	87.5	E	3830	12	10	1.9	1.9
3	762.5	N	-	92.5	E	4000	11	10	2.0	1.8
4	762.5	N	-	102.5	E	4110	12	10	2.9	1.8
5	762.5	N	-	107.5	E	3690	12	21	0.0	2.0
6	762.5	N	-	112.5	E	4320	10	12	1.7	2.4
7	762.5	N	-	117.5	E	3880	11	11	2.9	1.9
8	765	N	-	75	E	3900	11	11	2.3	1.9
9	765	N	-	100	E	4030	12	11	3.1	1.9
10	767.5	N	-	77.5	E	3800	12	11	0.5	2.4
11	767.5	N	-	87.5	E	3620	11	10	1.6	2.1
12	767.5	N	-	92.5	E	3640	11	10	2.4	2.2
13	767.5	N	-	97.5	E	3850	13	13	1.6	2.0
14	767.5	N	-	102.5	E	3710	12	10	0.5	1.7
15	767.5	N	-	107.5	E	3740	13	12	1.2	2.1
16	767.5	N	-	112.5	E	3930	13	12	0.5	2.0
17	767.5	N	-	117.5	E	3880	12	11	2.5	2.2
18	768.5	N	-	82.5	E	3570	12	9	1.1	1.9
19	770	N	-	80	E	3740	11	10	1.4	2.0
20	770	N	-	105	E	3440	12	10	2.9	2.0

INSTRUMENTS:LUDLUM MICRO 'R' METER -LUDLUM 2220, LEAD SHIELDED 3" X 1/2" NaI DETECTORCIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

BACKGROUND NOT SUBTRACTED

RESULTS IN:	BACKGROUND	MDA
pCi/g	Total U 1.8	1.7
pCi/g	Th(Nat) 2.3	0.4

KERR-McGEE CORPORATION
TECHNICAL CENTER
Test Pit Overburden/Stockpile
Total Depth Composite Soil Samples

DATE: 12/20/00

LN #	GRID NUMBER					3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0 - 1m & 0 - 2m COMPOSITE	
									Total-U	Th (Nat)
1	772.5	N	-	77.5	E	3720	11	10	2.4	2.0
2	772.5	N	-	112.5	E	4530	13	13	1.4	2.1
3	772.5	N	-	117.5	E	4390	14	13	2.9	2.0
4	772.5	N	-	122.5	E	4380	13	111	3.2	2.1
5	777.5	N	-	77.5	E	3450	12	11	5.1	1.8
6	777.5	N	-	122.5	E	4210	11	11	2.4	1.9
7	782.5	N	-	77.5	E	4270	11	9	4.0	2.0
8	782.5	N	-	122.5	E	4500	13	13	3.4	2.0
9	785	N	-	122.5	E	4270	12	11	3.0	2.0
10	787.5	N	-	77.5	E	3770	12	11	3.7	1.9
11		N	-		E					
12		N	-		E					
13		N	-		E					
14		N	-		E					
15		N	-		E					
16		N	-		E					
17		N	-		E					
18		N	-		E					
19		N	-		E					
20		N	-		E					

INSTRUMENTS:

LUDLUM MICRO 'R' METER -

LUDLUM 2220, LEAD SHIELDED 3" X 1/2" NaI DETECTOR

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

BACKGROUND NOT SUBTRACTED

RESULTS IN:	<u>BACKGROUND</u>	<u>MDA</u>
pCi/g	Total U 1.8	1.7
pCi/g	Th(Nat) 2.3	0.4

KERR-McGEE CORPORATION
TECHNICAL CENTER
Test Pit Overburden/Stockpile
Total Depth Composite Soil Samples

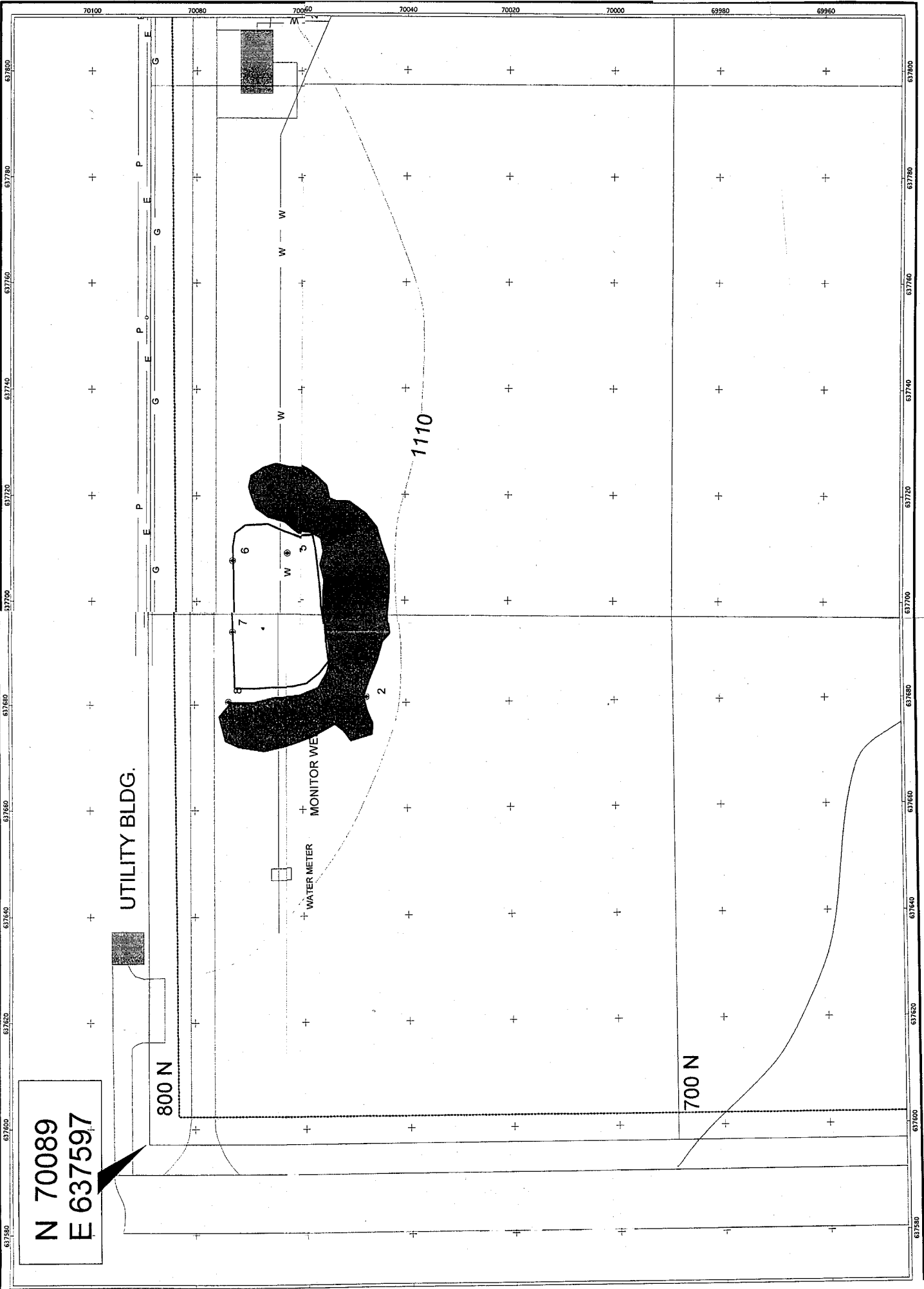
DATE: 1/22/01

LN #	GRID NUMBER					3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0 - 1m & 0 - 2m COMPOSITE	
									Total-U	Th (Nat)
1	770	N	-	74	E	3830	12	11	2.5	2.3
2	770	N	-	78	E	3550	12	10	2.8	2.1
3	770	N	-	82	E	4070	12	10	1.0	2.0
4	774	N	-	74	E	3820	12	11	1.7	1.9
5	774	N	-	78	E	3570	12	11	1.5	2.1
6	774	N	-	82	E	3700	13	10	3.8	1.8
7	778	N	-	74	E	4210	13	10	3.0	2.1
8	778	N	-	78	E	3880	12	10	2.7	2.2
9	778	N	-	82	E	3710	13	12	5.7	2.1
10	782	N	-	70	E	4360	12	11	3.8	1.9
11	782	N	-	74	E	3800	12	11	5.1	1.8
12		N	-		E					
13		N	-		E					
14		N	-		E					
15		N	-		E					
16		N	-		E					
17		N	-		E					
18		N	-		E					
19		N	-		E					
20		N	-		E					

INSTRUMENTS:LUDLUM MICRO 'R' METER -LUDLUM 2220, LEAD SHIELDED 3" X 1/2" NaI DETECTORCIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

RESULTS IN:	BACKGROUND	MDA
pCi/g	Total U 1.8	1.7
pCi/g	Th(Nat) 2.3	0.4

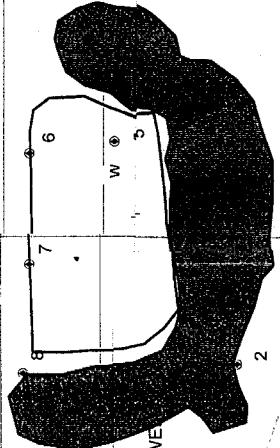
BACKGROUND NOT SUBTRACTED



N 70089
E 637597

UTILITY BLDG.

800 N



WATER METER
MONITOR WE

1110

700 N