



## Sample and Closure Plan for Spill Sites

### 1. Introduction

a. This sampling plan is submitted for closure of the two permitted spill sites at Holloman AFB. This plan shall detail proposed sampling procedures and rationale behind the sampling plan. After approval of this plan, we shall collect samples to send to an independent laboratory for analytical testing in accordance with EPA SW-846, *Test Methods for Evaluating Solid Wastes; Physical/Chemical Methods*, 2nd edition.

b. The Site 1 spill was caused by an act of vandalism, which resulted in soil contamination near building 1080. The spill area was surveyed with a photoionization detector (PID) to determine horizontal and vertical extents of contamination. The contaminated soil found was removed and placed on a bermed plastic-lined area located North of the landfill. The soil was placed in 10" lifts in the bermed area and encompassed an area of approximately 75'x 100'. The bermed area prevents run-on and runoff water.

c. The Site 2 spill resulted in contaminated soil near the F-117A maintenance Docks/Hanger Project, under construction by Hensel Phelps. The spill site was issued an emergency treatment permit on 15 July 93. In accordance with this permit, the spill site horizontal and vertical contamination extents were established with a PID. The contaminated soil was removed and placed onto a bermed plastic-lined area located in the "West Area" on an abandoned road near the spill site. The soil was placed in 12" lifts and encompassed an area of approximately 15'x 100'. The bermed area prevents run-on and runoff water.

### 2. Data Quality Objectives

a. For Site 1, the area will be gridded off in sections of 15'x 10' (see Appendix 1), which produces a sample lot of 66. Based on Military Standard 105D Table 1<sup>1</sup> (Mil-STD-105D) for normal inspections, 13 samples must be extracted for a representative sample. The sample shall be discrete aliquot in accordance with grab sample requirements<sup>2</sup>. The sample shall be a core extending vertically through the medium.

b. For Site 2, the area will be gridded off in sections of 7.5'x 10' (see Appendix 2), which produces a sample lot of 33. Based on Military Standard 105D Table 1<sup>1</sup> (Mil-STD-105D) for a normal inspections, eight samples must be extracted for a representative sample. The sample shall be discrete aliquot in accordance with grab sample requirements<sup>2</sup>. The sample shall be a core extending vertically through the medium.

<sup>1</sup> Mil-STD 105D, Table 1, *Quality Control*, 2nd edition, Dale E. Besterfield

<sup>2</sup> RCRA Sampling Procedures Handbook, Jacobs Engineering Group, Apr 91.

c. In addition, for each sample site, two samples outside the treatment site shall be extracted to be used as control samples. The treatment site is not expected to leach any of the contamination to the nearby groundwater table. The control sample will confirm this premise.

d. The sample size shall be approximately 200 ml of soil to be placed into a laboratory provided bottle. The sample shall be tested for Benzene, Toluene, Ethyl Benzene and Total Xylene (BTEX). The site shall be declared clean if the analytical results show BTEX lower than 10 parts per million (PPM) for all constituents except for total X which shall be less than 3 PPM.

### 3. Background on Sample Strategies

a. A Simple Random Sampling method was chosen because of the homogeneous nature of the treatment site. Selection of sampling points was based on the Random Number Table<sup>1</sup> at Appendix 3. The homogeneous mixture of the soil and time exposed to elements, in conjunction with a vertical sample, shall ensure a representative sample is obtained.

b. The random sample and lot size determination were made with prudent judgment. Mil-STD 105D was used as a starting point for sample lot determination only. A normal inspection of Level II was selected for equal protection between cost and sample representatives. The proposed sampling method should give clear, definitive, and representative results as to levels of contamination that exist, if there are any in the proposed treatment areas.

### 4. Sample Procedures

#### a. *List of Equipment.*

##### Sampling Equipment:

- Auger accessories
- Sampling Bottle
- 500 ml wide-mouth glass bottle with Teflon® cap.

##### Miscellaneous Field Gear and Instrumentation:

- Latex Gloves
- First-aid Kit

#### b. *Sample Collection.*

- Sampling shall be done by the 49th Medical Group Bioenvironmental Engineering office, as per the independent laboratory instructions.

---

<sup>1</sup> Base Level Service Contracts, Air Force Regulation 400-28, Vol. 1, Attachment 1, 26 Sept 79.

Sample Preparation:

- Samples shall be prepared in accordance with the independent laboratory requirements.

Sample Analysis:

- Sample analysis shall be done by an independent laboratory in accordance with EPA SW-846, *Test Methods for Evaluating Solid Wastes; Physical/Chemical Methods*, 2nd edition. The contractor has not yet been determined; we are awaiting award of contract from our contracting office. Upon award of the contract, Holloman AFB will strictly adhere to the laboratories' instructions to ensure sample integrity.

Chain-of-Custody:

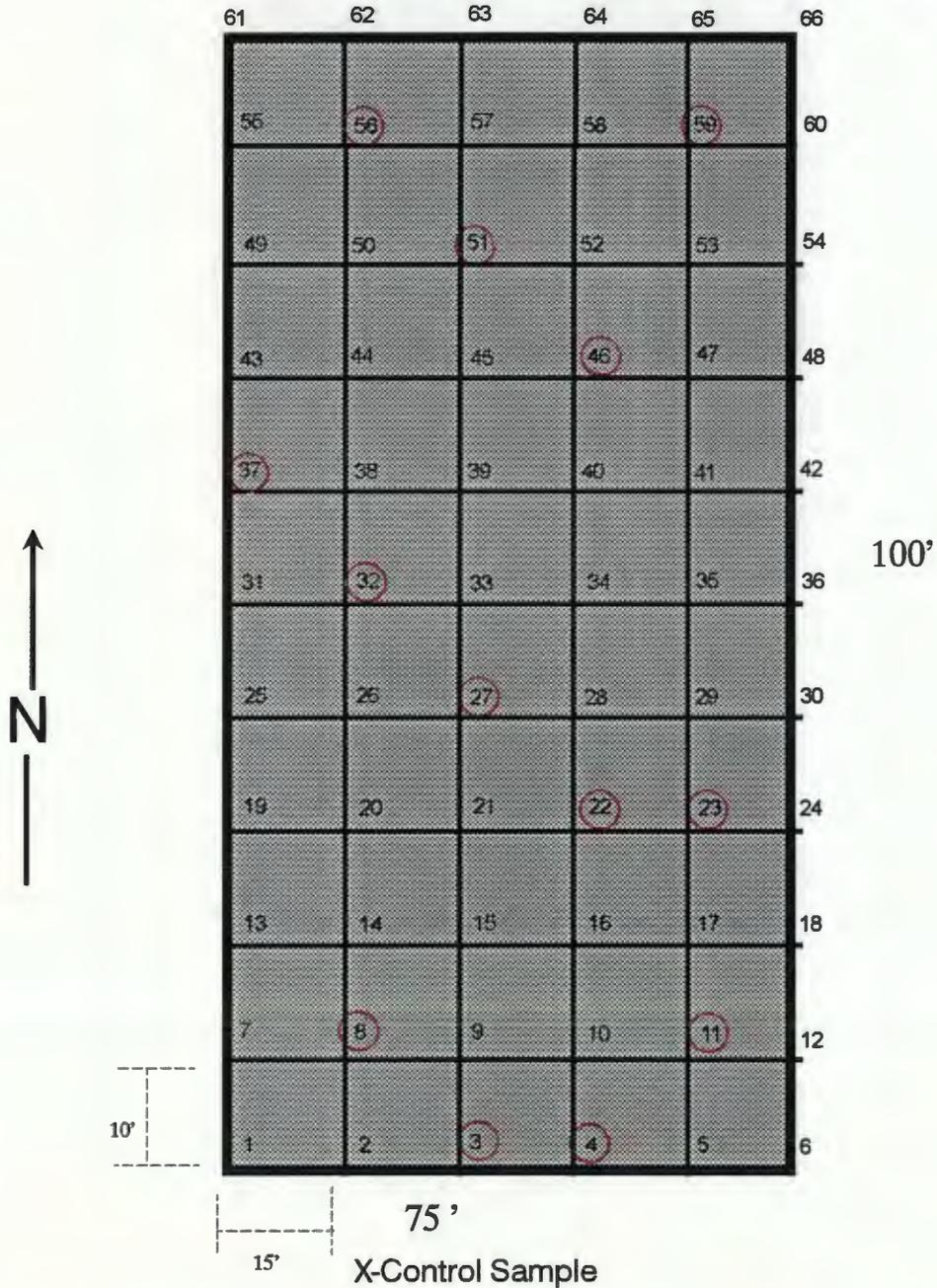
- A chain-of-custody form will be used to record the number of samples collected and the corresponding laboratory analysis. Indelible ink will be used. Information on this form includes time and date of sample, sample number, type of sample, sampler's name, preservatives used, and any special instructions. A copy of the chain-of-custody form will be retained by the sampler, and will be maintained in a field documentation file .

5. Closure

a. Upon return of negative results, the remediated soil shall be placed back into the spill sites or disposed of in the base landfill.

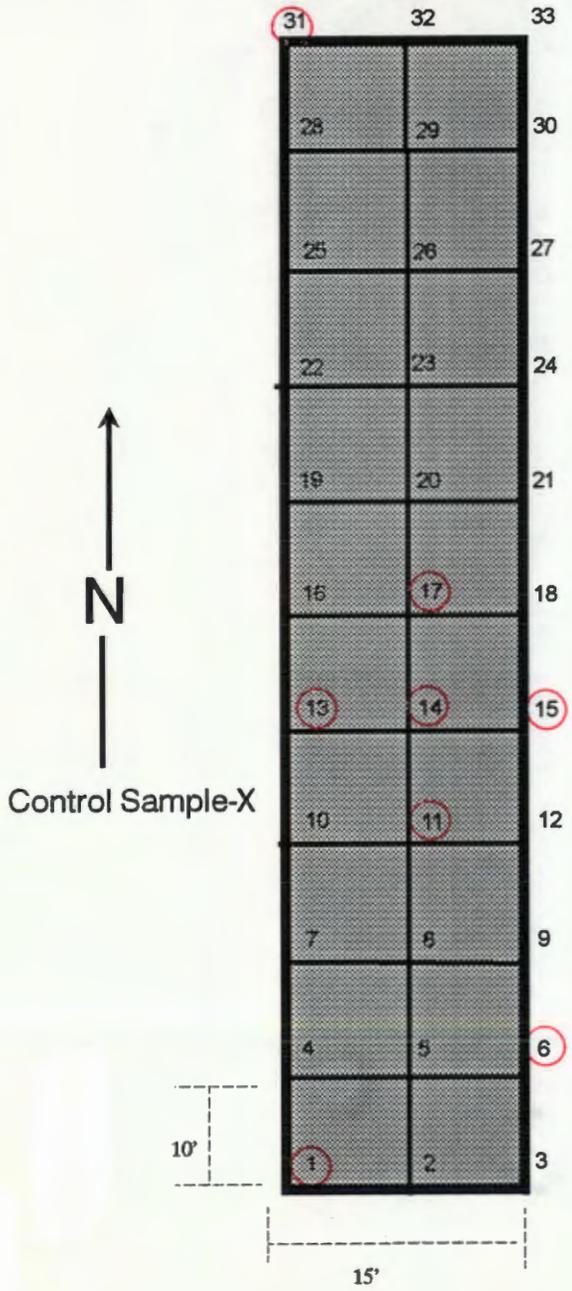
b. If any of the soil should fail BTEX, we shall continue treatment and repeat the sampling procedure after 90 days.

# Control Sample- X Spill Site Bldg 1080



Spill Site North of Landfill  
 7500 square Feet  
 66 sample points @ 150' ,  
 10" thick

# Spill Site F-117A Maintenance Docks/Hanger Project



Spill Site West Area

750 square Feet

33 sample points @ 75', 12" thick

100'

X-Control Sample

Random Number Table

SITE 1  
START

SITE 2  
START

Line	Col.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1		10480	15011	01536	02011	81647	91646	69179	14194	62590	36207	20969	99570	91291	90700
2		22368	46573	25595	85393	30995	89198	27982	53402	93965	34095	52666	19174	39615	69505
3		24130	48360	22527	97265	76393	64809	15179	24830	49340	32081	30680	19655	63343	58829
4		42167	93093	06243	61680	07856	16376	39440	53537	71341	57004	00849	74917	97758	16379
5		37570	39975	81837	16656	06121	91782	60468	81305	49684	60672	14110	06927	01263	54613
6		77921	06907	11008	42751	27756	53498	18602	70659	90655	15053	21916	81825	44394	42880
7		99562	72905	56420	69994	98872	31016	71194	18738	44013	48840	63213	21069	10534	12952
8		96301	91977	05463	07972	18876	20922	94595	56869	69014	60045	18425	84903	42503	32307
9		89579	14342	63661	10281	17453	18103	57740	84378	25331	12566	58678	44947	05585	56941
10		85475	36857	53342	53988	53060	59533	38867	62300	08158	17983	16439	11458	18593	64952
11		28918	69578	88231	33276	70997	79936	56865	05859	90106	31595	01547	85590	91610	78188
12		63553	40961	48235	03427	49626	69445	18663	72695	52180	20847	12234	90511	33703	90322
13		09429	93969	52636	92737	88974	33488	36320	17617	30015	08272	84115	27156	30613	74952
14		10365	61129	87529	85689	48237	52267	67689	93394	01511	26358	85104	20285	29975	89168
15		07119	97336	71048	88178	77233	13916	47564	81056	97735	85977	29372	74461	28551	90707
16		51085	12765	51821	51259	77452	16308	60756	92144	49442	53900	70960	63990	75601	40719
17		02368	21382	52404	60268	89368	19885	55322	44819	01188	65255	64835	44919	05644	55357
18		01011	54092	33362	94904	31273	04146	18594	29852	71585	85030	51132	01915	92747	24951
19		52152	53916	46369	58586	23216	14513	83149	98736	23495	64350	94738	17752	35156	35749
20		07056	97628	33787	09998	42698	06691	76988	13602	51851	46104	88916	19509	25625	58104
21		48663	91245	85828	14346	09172	30168	90229	04734	59193	22178	30421	61666	99904	32812
22		54164	58492	22421	74103	47070	25306	76468	26384	58151	06646	21524	15227	96909	44592
23		32639	32363	05597	24200	13363	38005	94342	28728	35806	06912	17012	64161	18296	23351
24		29334	27001	87637	87308	58731	00256	45834	15398	46557	41135	10367	07684	36188	18510
25		02488	33062	28834	07351	19731	92420	60952	61280	50001	67658	32586	86679	50720	94953
26		81525	72295	04839	96423	24878	82651	66566	14778	76797	14780	13300	87074	79666	95725
27		29676	20591	68086	26432	46901	20849	89768	81536	86645	12659	92259	57102	80488	25280
28		00742	57392	39064	66432	84673	40027	32832	61162	98947	96067	64760	64584	96096	98253
29		05366	04213	25669	26422	44407	44048	37937	63904	45766	66134	75470	66520	34693	90449
30		91921	26418	64117	94305	26766	25940	39972	22209	71500	64568	91402	42416	07844	69618
31		00582	04711	87917	77341	42206	35126	74087	99547	81817	42607	43808	76655	62028	76630
32		00735	69884	62797	56170	86324	88072	76222	36086	84637	93161	76038	65855	77919	88006
33		69011	65795	95876	55293	18988	27354	26575	08625	40801	59920	29841	80150	12777	48501
34		25976	57948	29888	88604	67917	48708	18912	82271	65424	69774	33611	54262	85463	03547
35		09763	83473	73577	12908	30883	18317	28290	35797	05998	41688	34952	37888	38917	88050
36		91567	42595	27958	30134	04024	86385	29880	99730	55536	84855	29080	09250	79656	73211
37		17955	56349	90999	49127	20044	59931	06115	20542	18059	02008	73708	83517	36103	42791
38		46503	18584	18845	49618	02304	51038	20655	58727	28168	15475	56942	53389	20562	87338
39		92157	89634	94824	78171	84610	82834	09922	25417	44137	48413	25555	21246	35509	20468
40		14577	62765	35608	81263	39867	47358	56873	56307	61607	49518	89686	20103	77490	18062
41		98427	07523	33362	64270	01638	92477	66969	98420	04880	45585	46565	04102	46880	45709
42		34914	63976	88720	82765	34476	17032	87589	40436	32427	70002	70663	88863	77775	69348
43		70060	28277	39475	46473	23219	53416	94970	25832	69975	94884	19661	72848	00102	66794
44		53976	54914	06990	67245	38350	82948	11398	42878	80287	88267	47363	46634	06541	97809
45		76072	29515	40980	07391	58745	25774	22987	80059	39911	96189	41151	14222	60697	59583
46		90725	52210	83974	29992	65831	38857	50490	83765	55657	14361	31720	57375	56228	41546
47		64364	67412	33339	31926	14883	24413	59744	92351	97473	89286	35931	04110	23726	51900
48		08962	00353	31662	25388	61642	34072	81249	35648	56891	69352	48373	45578	78547	81788
49		95012	68379	93526	70765	10592	04542	76463	54328	02349	17247	28865	14777	62730	92277
50		15664	10493	20492	38391	91132	21999	59516	81652	27195	48223	46751	22923	32861	85653