LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

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LONGHORN ARMY AMMUNITION PLANT CONTAMINATION SURVEY

R. D. Sanfilippo, E. C. McGriff, D. W. Knothe and L. M. Jacobs

ENVIRONMENTAL PROTECTION SYSTEMS, INC.
7215 PINE FOREST ROAD
PENSACOLA, FLORIDA 32506

Contract DAAA09-78-C-3004

Prepared for:
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and
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Marshall, Texas, 75670
U. S. Army Toxic and Hazardous Materials Agency
Aberdeen Proving Ground, Maryland 21010

June, 1984

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A contamination survey was conducted at the Longhorn Army Ammunition Plant, Marshall, Texas, to determine if contaminants from the ammunition plant were migrating off post, or if potential for such migration existed. Thirty-two monitoring wells were installed to obtain hydrogeologic information and water samples. An additional 21 existing Army Environmental Hygiene Agency wells were also investigated to determine water quality in their vicinity. Surface water and sediment samples were collected at 21 points along the four main

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EXECUTIVE SUMMARY

Under the auspices of the Installation Restoration Program of the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA), Thiokol Corporation/Longhorn Division (Thiokol) contracted with Environmental Protection Systems, Inc. (EPS) to conduct a contamination survey of the Longhorn Army Ammunition Plant (LHAAP), Marshall, Texas. This installation is located in the northeast corner of the state of Texas approximately 40 miles west of the city of Shreveport, Louisiana. During World War II this installation was a TNT production site and presently it produces a wide variety of pyrotechnics and solid rocket motors.

Eleven areas at LHAAP were identified as potentially contaminated sites during the installation record search survey. The contamination survey was designed by USATHAMA to investigate whether contamination exists at these sites, and if any contamination which might be found is migrating, or has the potential for migrating, off the installation (U.S. Army Toxic and Hazardous Materials Agency, 1982).

Thirty-two monitoring wells were installed and sampled during this survey. Additionally, twenty-one existing Army Environmental Hygiene Agency (AEHA) wells were also sampled and analyzed to evaluate the chemical characteristics of the near-surface aquifers. Eighteen surface water and sediment stations were sampled along the four main streams which transect the installation, and similar samples were

collected from three impoundment stations. Soil samples were collected at eight of the eleven areas. All sampling methods and contractor analytical quality control procedures were developed to comply with the USATHAMA August 1980 document entitled Sampling and Chemical Analysis Quality Assurance Program.

EPS certified 17 methods in six analytical categories for 55 specific analytes prior to the analysis of field samples. The analytical investigations at each area centered on specific contaminant analytes or groups of analytes which had a history of being used, or disposed of, in the various areas.

The analytical results generated during this survey indicated that five of the study areas had levels of contamination which were above normal background levels. Specific geotechnical field and laboratory tests were conducted to determine the potential for movement of this contamination.

Six of the eleven study areas were determined to present no contamination problem or potential for contaminant migration off the installation. No area investigated during this survey was found to have a contaminant migrating off the installation with a concentration exceeding a published standard or criteria limit.

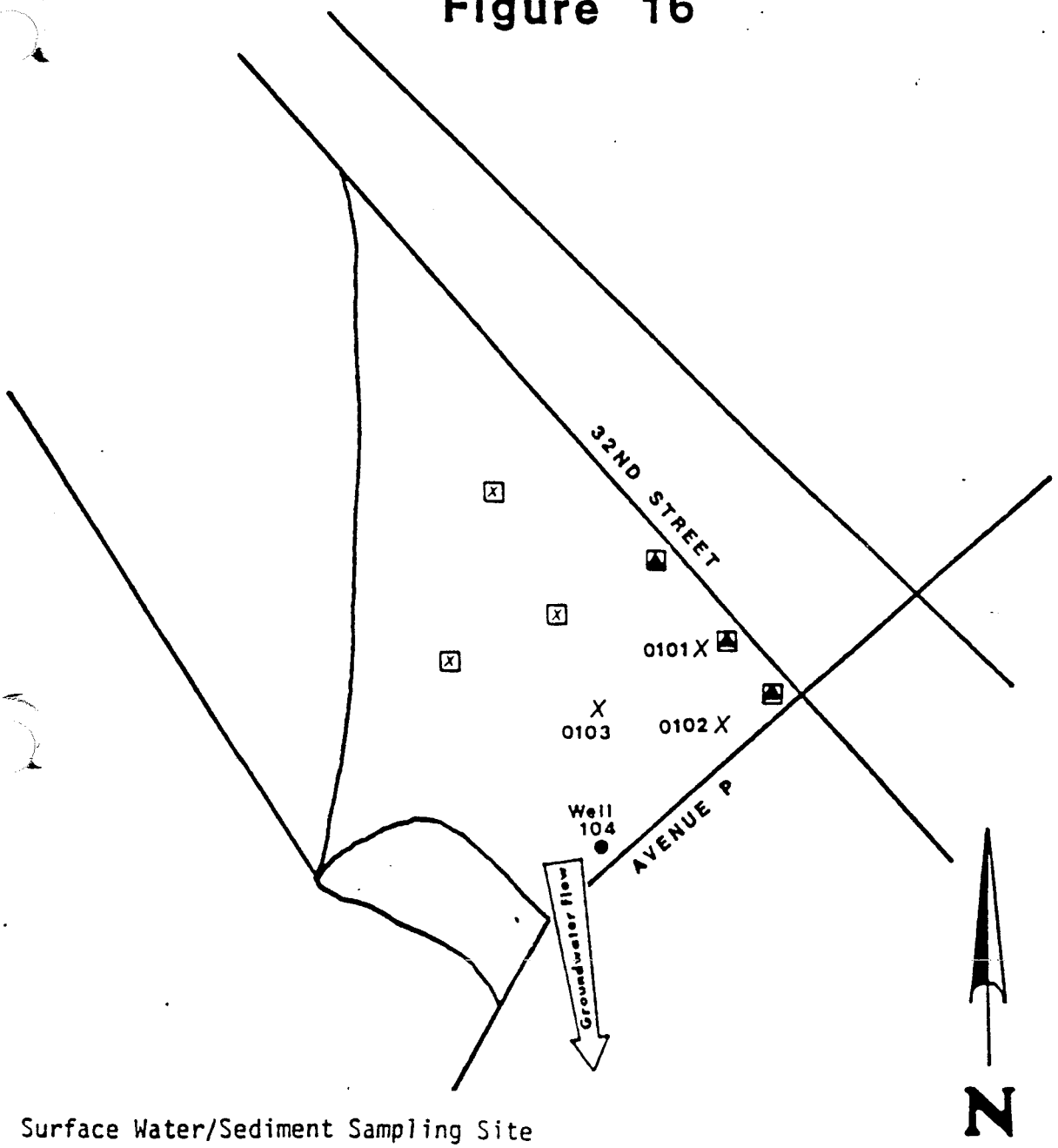
After evaluation of the chemical and geotechnical data it has been concluded by EPS that four of the eleven study areas require confirmation and delineation of current conditions for potential

corrective action. By far the two most significant areas requiring further action are the Former TNT Production Area and the Active Burning Grounds. Both are contaminated sites for which the potential of contaminant migration exists.

The Former TNT Production Area was found to have high concentrations (10-10,000 ug/g) of explosives in its surface soils. Drainage from this site is through underground former redwater lines into Goose Prairie Creek. Explosive compounds were detected at two stations downstream from this site. Additional testing at this site under varying stream flow conditions is recommended, as well as potential decontamination measures.

The Active Burning Grounds was determined to have three sources of contamination which have varying degrees of migration potential and which warrant further investigation. The first of these is the Rocket Motor Washout Pond presently used for the disposal of industrial effluent collected from the 150+ sumps of production Plants 2 and 3. Groundwater surrounding this pond contains high concentrations of several chlorinated organic compounds. Additionally, this area has been used for the disposal of barium-containing compounds. Barium has migrated into Harrison Bayou and off post, but at concentrations below the limit for drinking water designated by the Texas Department of Health. Two concurrent actions are recommended here: (1) Installation of additional wells to delineate the boundaries of the problem and to evaluate the need for remedial cleanup. (2) Take immediate steps (including interim pilot plant operations) to stop this method of

Figure 16



- ▲ Surface Water/Sediment Sampling Site
- X Soil Sampling Site
- ● Well Installed During Project
- ▲ Existing AEHA Well (*AEHA No.)
- ▲ Proposed Surface Water/Sediment Sampling Site
- ● Proposed Well Location
- X Proposed Soil Sampling Location

APPROX SCALE 1:3400

Inert Burning Grounds

SOURCE: ENVIRONMENTAL PROTECTION SYSTEMS, INC. - 1983

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

disposal and start removing existing contaminated surface and subsurface water. The second problem is the potential existence of buried TNT wastes. The highest concentrations of explosives in groundwater at LHAAP were found here at Wells 39 and 49 and the location of the contaminated water indicates a source other than the Rocket Motor Washout Pond. It is recommended that surface and subsurface soil samples be taken in suspect areas to confirm and delineate this potential problem. The third problem in this area is the runoff presently generated from the open burning process. Considering the variety of materials disposed here and the runoff pathway, it is recommended that these areas be redesigned to capture all runoff, and that runoff effluent be properly treated along with other wastes from LHAAP.

Two other areas of concern are proposed as sites for additional investigation if their operational status is changed. These sites do not presently have demonstrated potential for contaminant migration; however, because of evidence generated during this survey an increase and realignment of sampling points and further analysis is necessary to possibly downgrade these areas to the no contamination potential status. The Old Landfill is one of these areas, and because some explosives contamination was found in a stream associated with this site, as well as the fact that the site has only one downgradient monitoring well, it is recommended that several additional wells be installed and monitored. The Inert Burning Grounds is the other site of concern. Low levels of explosives were found in the monitoring well associated with this location. Surface water runoff was not monitored

in this area during the study, and such monitoring is now recommended to evaluate this migration pathway potential.

1.0 INTRODUCTION

1.1 BACKGROUND

Environmental Protection Systems, Inc. (EPS) was contracted to perform a contamination survey at Longhorn Army Ammunition Plant (LHAAP) by Thiokol Corporation, the plant operator. The survey was conducted under the technical direction of the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA).

Environmental Protection Systems, Inc. was selected as the prime contractor on 18 March 1982 and issued Thiokol P.O. No. 16651.

1.2 OBJECTIVE OF THE CONTAMINATION SURVEY

The objective of this study was to perform an environmental contamination survey to determine if any industrial chemicals, explosives, or any other toxic and hazardous materials, are migrating beyond the boundaries of Longhorn Army Ammunition Plant (LHAAP) by means of surface or subsurface routes, or if the potential for such migration exists.

1.3 PROJECT ORGANIZATION AND TIMETABLE

On 18 March 1982 Environmental Protection Systems, Inc. (EPS) entered into a contract to conduct a contamination survey at LHAAP with Thiokol Corporation, the present contract operator of the facility. EPS, employing the services of the geotechnical firm of Larry M. Jacobs and Associates, Inc., proceeded in May, 1982, after approval of EPS's safety plan, with the installation of 32 new monitoring wells at the project site. The firm of Collins Surveying and Mapping was retained to

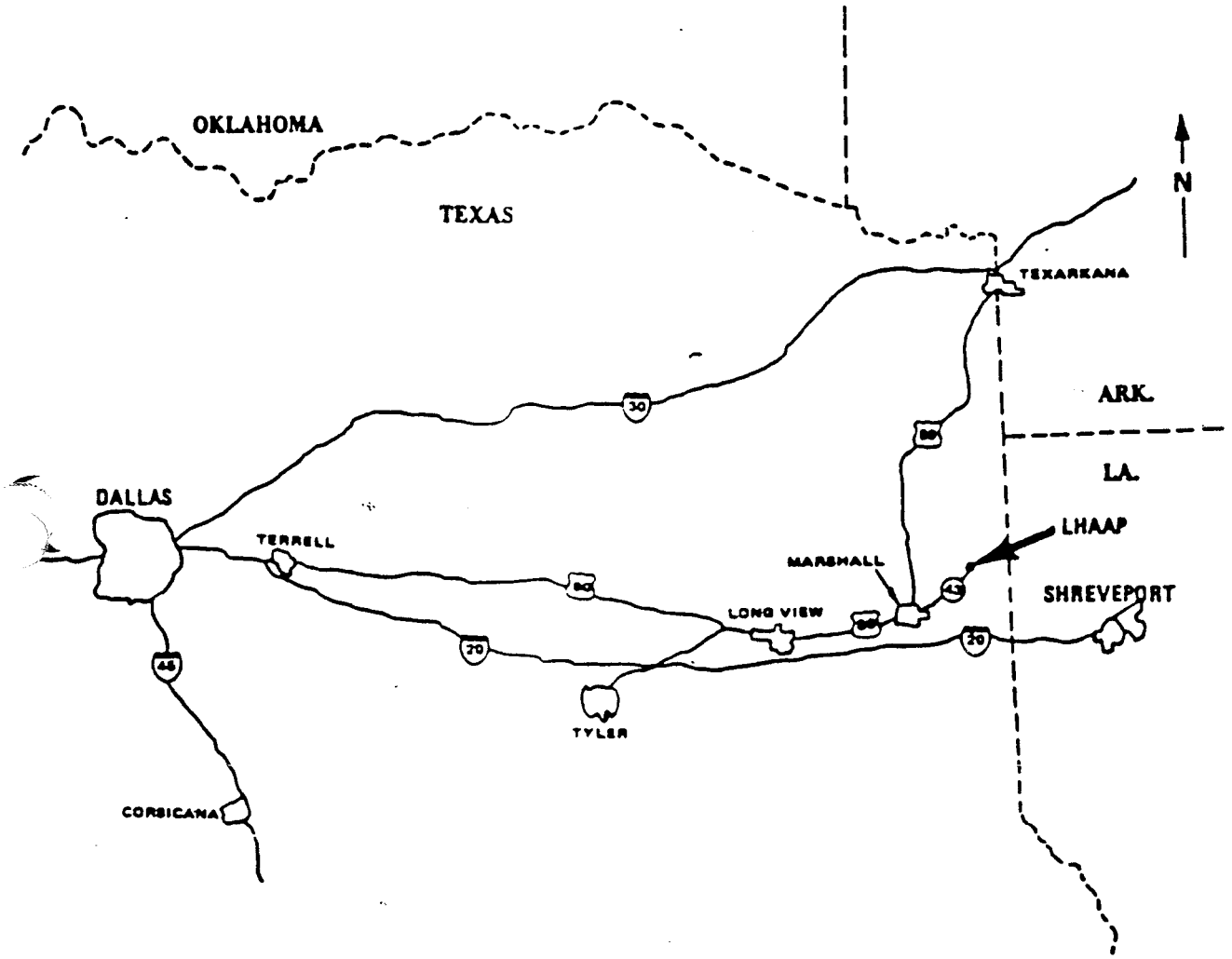
topographically survey the locations of the 32 wells installed under the initial purchase order and of 21 AEHA monitoring wells previously existing at LHAAP.

During the initial few months of the contract period, EPS prepared a comprehensive quality assurance document to meet the quality control requirements of the initial scope of work. EPS submitted validation data for over 50 specific analytes in both soil and water for specific site approval of its laboratory facilities. A final geotechnical report and physical survey report were also produced during this period. After a comprehensive review of EPS's quality assurance document and supporting validation data by USATHAMA, certification was granted to EPS during the first week of November 1982. The sampling effort for all sample matrix types was conducted from 16 November 1982 to 21 November 1982. Analyses of water samples were conducted through mid-December 1982, and soil and sediment analyses were completed in January 1983. In April 1983 a contamination analysis report was prepared and transmitted to Thiokol and USATHAMA. On 5 May 1983 results of the contamination survey were presented to the management of USATHAMA for comments and suggestions.

1.4 LOCATION OF LHAAP

LHAAP occupies 3,437 hectares (8,493 acres) between State Highway 43 at Karnack, Harrison County, Texas, and the edge of Caddo Lake. The nearest major communities are Marshall, Texas, located approximately 22 km (14 miles) southwest of the installation, and Shreveport, Louisiana, located approximately 64 km (40 miles) to the east (Figure 1). The small towns

Figure 1



LHAAP SITE LOCATION

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

of Karnack and Uncertain lie, respectively, on the western and northern borders of the installation.

1.5 GENERAL ENVIRONMENTAL SETTING OF LHAAP

LHAAP is situated in the West Gulf Coastal Plain Section of the Coastal Plain Physiographic Province. The installation lies on the north flank of the Sabine Uplift which is bordered on the west by the East Texas Basin.

This region is commonly called the Pineywoods, a deep inland extension of the Gulf Coastal Plain that extends into Texas, Louisiana, Arkansas, and Oklahoma. The area is characterized by mixed pine-hardwood forests that cover gently rolling to hilly terrain. LHAAP is surrounded by such forests and agricultural land. Its northeastern border is formed by Caddo Lake and Goose Prairie Bay. Parts of the installation, particularly those areas bordering Caddo Lake and surrounding Harrison Bayou, are undeveloped and support a variety of plant and animal life.

All surface waters drain northeastwardly into Caddo Lake (the major water body in the area) through Goose Prairie Creek, Central Creek (Caddo Lake Bayou), Harrison Bayou, and Saunders Branch of Martins Creek. All of the potentially contaminated areas are situated along these four major drainage routes (see Section 3.2).

The terrain of the installation is gently sloping with an average slope of 3 percent toward the northeast. Most of the land has a slope of 3 percent or less, but slopes as steep as 12 percent are common in the

northwest and west regions and along the Harrison Bayou floodplain. Elevations vary from a high of 102 m (335 ft) to a low of 52 m (170 ft) above sea level.

LHAAP is located in a region of moist, subhumid to humid, mild climate. The average annual rainfall is 117 cm (46 inches). Precipitation is fairly evenly distributed throughout the year; however, December through May could be considered the heavier rain season. Frequently, summer and fall are drought seasons. Precipitation almost always occurs as rainfall; snowfall is a rare occurrence.

1.6 HISTORY OF LHAAP

LHAAP is a government-owned, contractor-operated (GOCO) industrial installation under the jurisdiction of the U.S. Army Armament, Munitions, and Chemical Command (AMCCOM) with the primary mission to load, assemble, and packout pyrotechnic and illuminating/signal ammunition and solid propellant rocket motors. The Longhorn Division of Thiokol Corporation is the current operating contractor.

On 19 October 1942 the initial operation of LHAAP began with the first production of TNT flake by Monsanto Chemical Company, the first contract operator of the ammunition plant in the Production Plant 1 area (Figure 2). Production of TNT continued through World War II until 15 August 1945. The plant was maintained as a government-owned government-operated (GOGO) facility on a standby status until 1 February 1952. The Universal Match Corporation operated the plant from that time until 31 August 1956. During this period LHAAP produced pyrotechnic ammunition in the Plant 2 area.

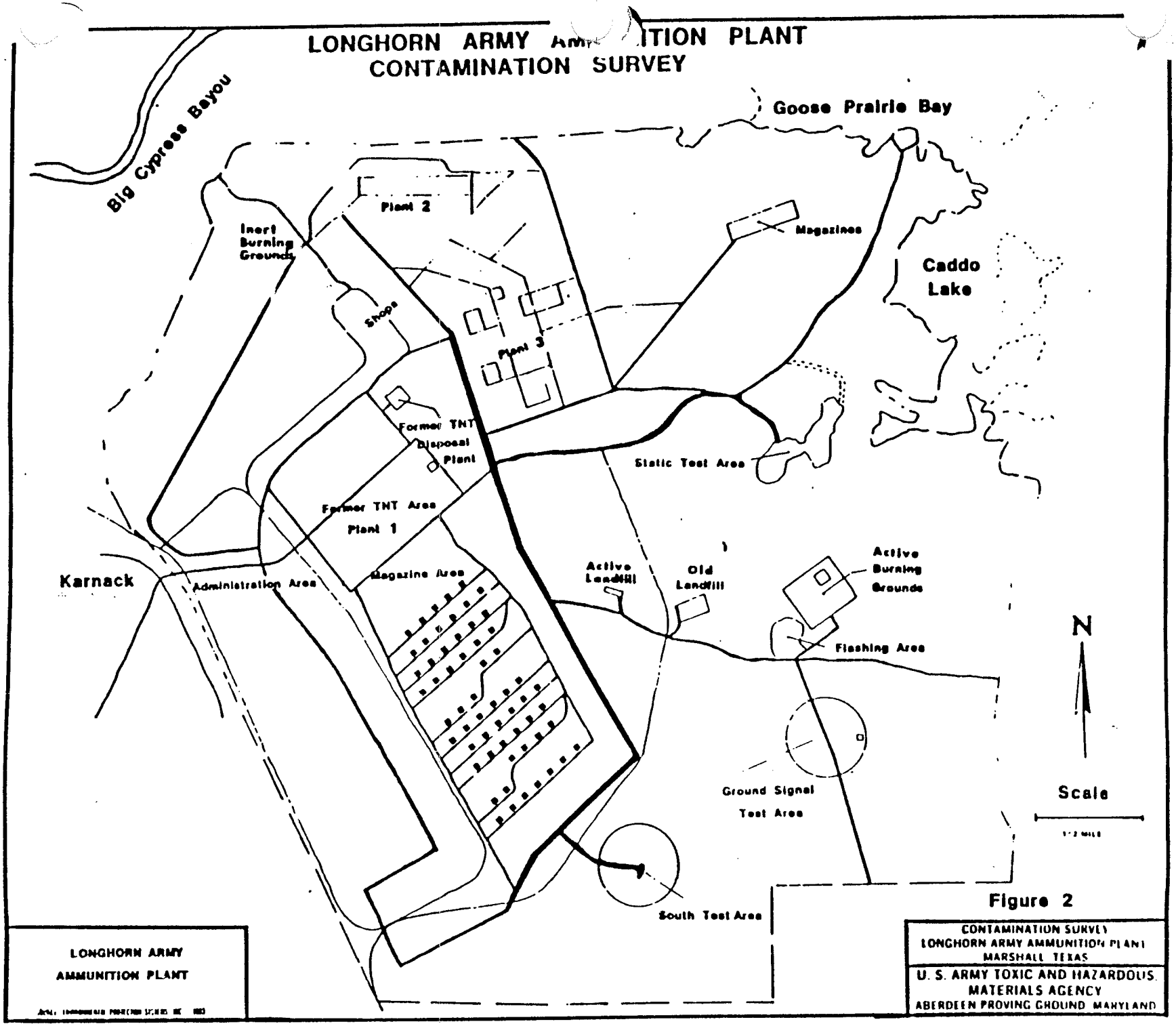


Figure 2

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From November 1955 to the present, Thiokol Corporation has been the operator of the Plant 3 area rocket motor facility. Thiokol assumed total installation operation with the departure of Universal Match Corporation in 1956. From 1955 to 1965, the primary mission was the production of rocket motors. Subsequently, the added mission of pyrotechnic and illuminating ammunition was reestablished.

2.0 SAMPLING AND ANALYSIS

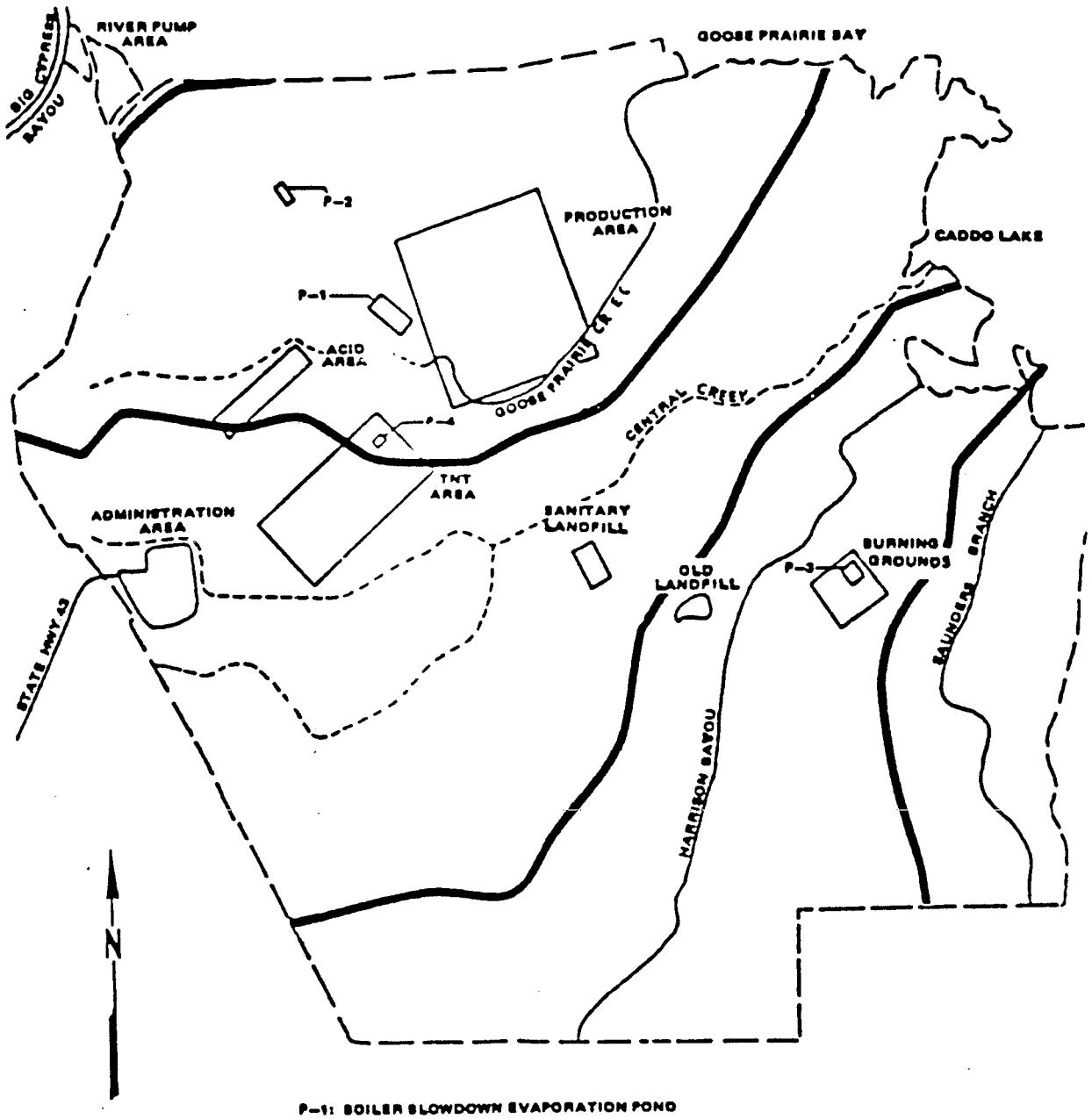
2.1 LOCATION AND TYPE OF SAMPLING POINTS

During the contamination study conducted by EPS, 32 monitoring wells were installed within the boundaries of LHAAP. In addition to the wells installed by EPS, 21 of the existing AEHA wells were also sampled, bringing the total number of wells used during the survey to 53 (Figure 3). Table 1 provides a description of each groundwater site and a list of the analyses required for samples from each well.

The investigation into the surface water quality involved 21 stations which were located in the four major drainage systems running through the ammunition plant into Caddo Lake (Figure 4). Table 2 provides a description of each sampling site location and lists the parameters tested for samples collected at each site. Three of the 21 surface water samples were collected from impoundments inside the installation: the former TNT incineration plant foundation, which was filled with water (Station 004), the TNT pumphouse pond (Station 005), and the rocket motor casing washout pond (Station 014). All of the surface water sites, except Station 004 (which had no sediments due to the presence of a concrete slab), were also sampled to determine the quality of sediments present (Table 2, Figure 4).

The surface and near-surface potentially contaminated soils were investigated at eight general areas, with a number of samples collected in each area (Figure 5). Table 3 provides a description of each of the

Figure 10



DRAINAGE BASINS

AND

HOLDING PONDS

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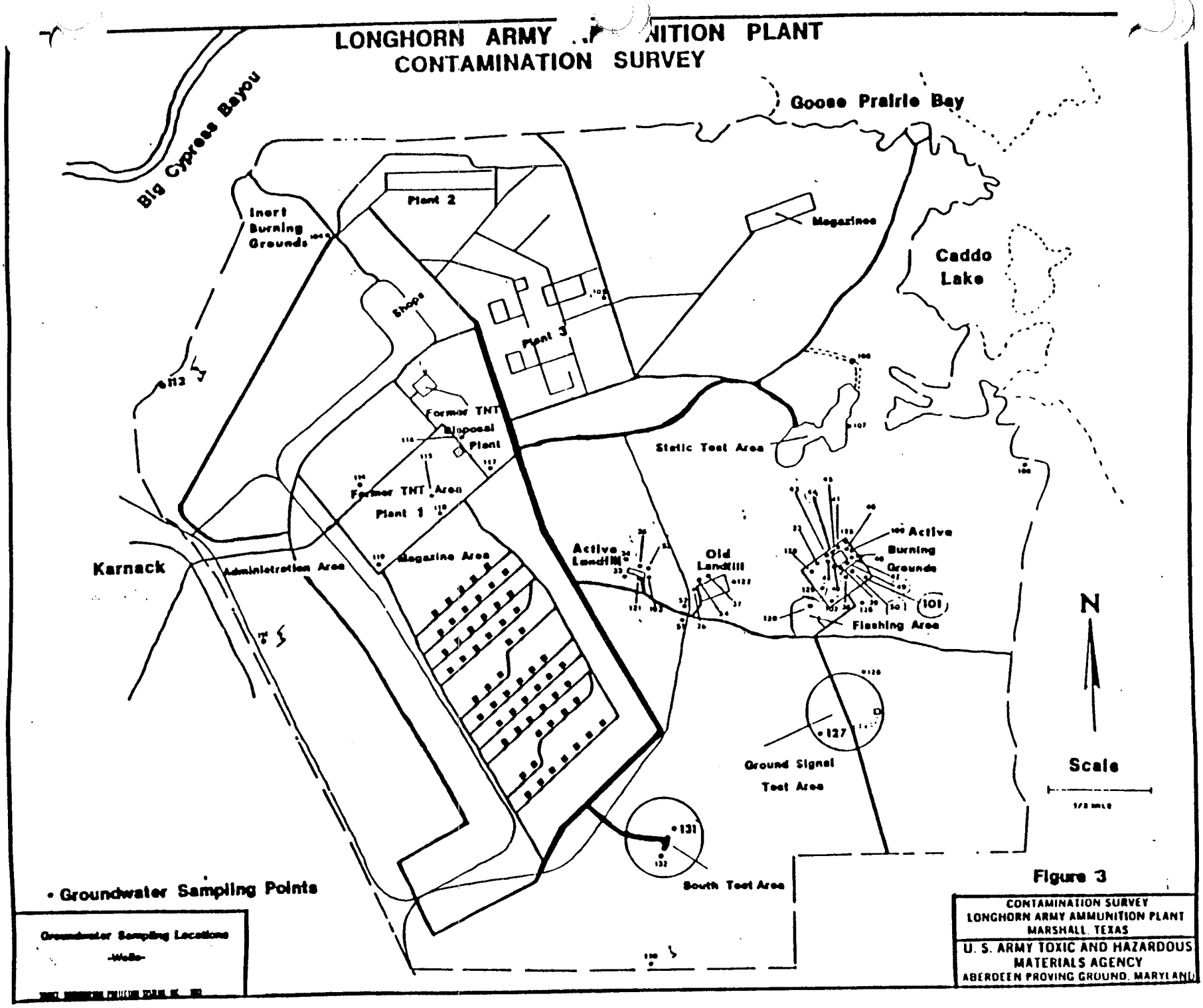
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY


LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION SURVEY
Goose Prairie Bay
Big Cypress Bayou
Inert Burning Grounds
Plant 2
Magazines
Caddo Lake
Shops
Plant 3
Former TNT Disposal Plant
Former TNT Area
Plant 1
Static Test Area
Karnack
Administration Area
Magazine Area
Active Landfill
Old Landfill
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LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS
U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

00099038

Table 1

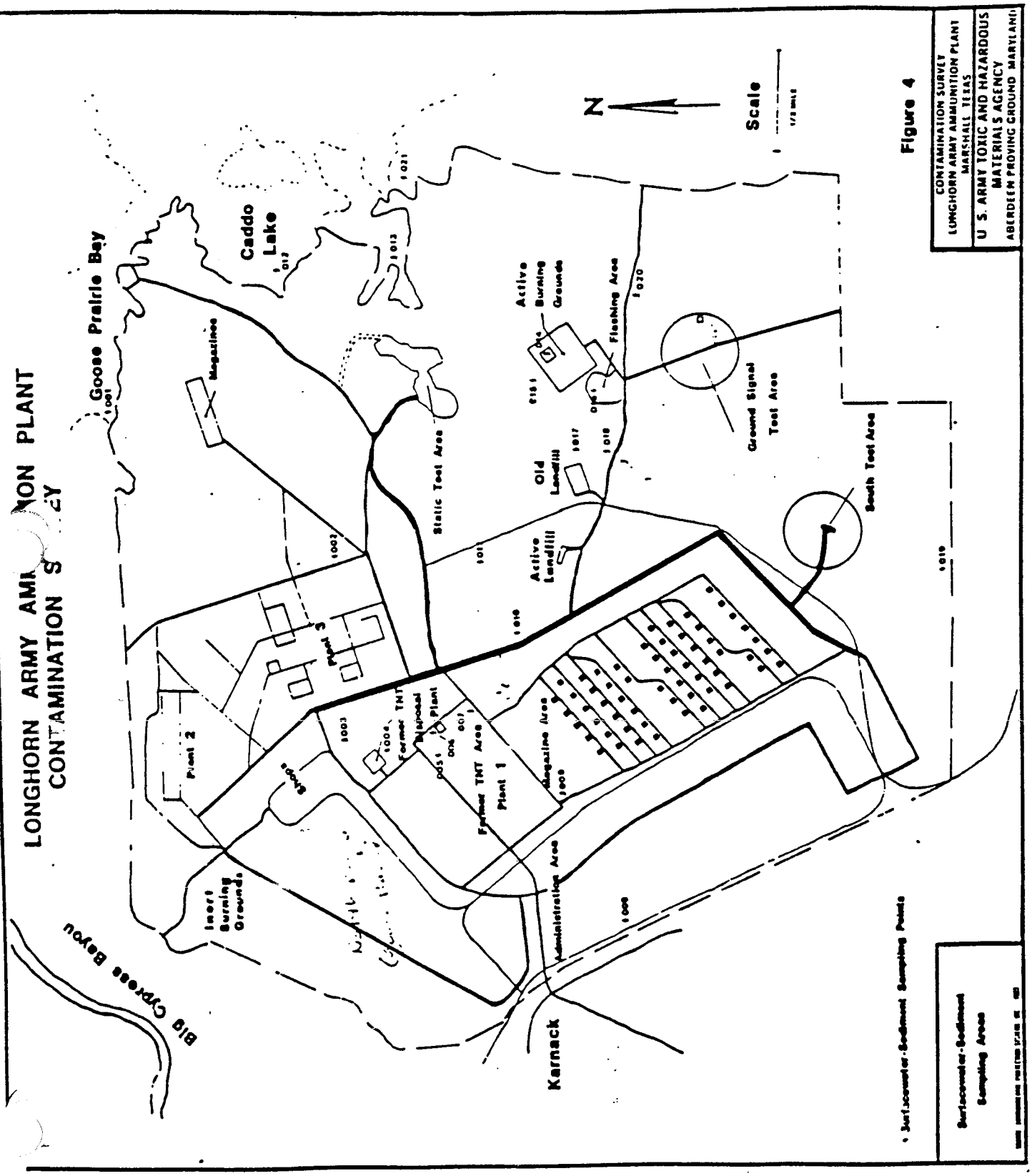
Groundwater Sampling Locations and Analytical Requirements

Well No.	Analytical Categories*	Location
101	1,2,3,4,5,6	SE Corner of Burning Grounds.
102	1,2,3,4,5,6	SW Corner of Burning Grounds.
103	1,2,3,4,5,6	E of Active Landfill.
104	1,2,3,4,5,6	E of Inert Burning Grounds.
105	1,2,3	E of Plant 3, near Independence Ave.
106	1,2,3,6	NW of Igniter area.
107	1,2,3,4,5	E of Static Test Area.
108	1,2,3,4,5,6	SSE of Harrison Bayou inlet into Caddo Lake.
109	1,2,3,4,5	NE Side of Burning Grounds.
110	1,2,3,4,5,6	S Boundary, E of Harrison Bayou.
111	1,2,3,4,5,6	SW Boundary, W of Ave. P.
112	1,2,3,4,5,6	W Boundary, W of Classification Yard.
	1	NE of TNT Waste Disposal Plant.
	1	WNW of TNT Area, near 1st St.
	1	TNT Area, near Ave. K.
116	1	NE of TNT Area, near Ave. D.
117	1	ENE of TNT Area, near Ave. D and 18th St.
118	1	SE of TNT Area, near 18th St.
119	1	SSW of TNT Area, near 18th St.
120	1,2,3,4,5,6	NW Corner of Burning Grounds.
121	1,2,3,6	SSW of Active Landfill.
122	1,2,3,4,5,6	E of Old Landfill.
123	1,2,3,6	WNW of Burning Grounds.
124	1,2,3,4,5,6	NNW of Burning Grounds.
125	1,2,3,4,5,6	NNE of Burning Grounds.
126	1,2,3,4,5,6	SE of Burning Grounds.
127	1,2,3	WNW of Ground Signal Test Area.
128	1,2,3,4,5	NE of Ground Signal Test Area.
129	1,2,3,4,5	SW Side of Burning Grounds.
130	1,2,3,4,5	WNW of Ground Signal Test Area.
131	1,2,3,4,5	NE of South Test Area.
132	1,2,3	SE of South Test Area.

Table 1
(Continued)

Well No.	Analytical Categories*	Location	AEHA Well No.
33	1,2,3,4,5,6	Existing 2" well at Active Landfill	BH20
34	1,2,3,4,5,.6	Existing 2" well at Active Landfill	BH19
35	1,2,3,6	Existing 2" well at Active Landfill	BH18
36	1,2,3,6	Existing 2" well at Old Landfill	BH16
37	1,2,3,4,5,6	Existing 2" well at Old Landfill	BH14
38	1,2,3	Existing 2" well at Burning Grounds	BH22
39	1,2,3,4,5	Existing 2" well at Burning Grounds	BH5
40	1,2,3	Existing 2" well at Burning Grounds	BH7
41	1,2,3	Existing 2" well at Burning Grounds	BH3
42	1,2,3	Existing 2" well at Burning Grounds	BH1
	1,2,3,4,5	Existing 2" well at Burning Grounds	BH8
	1,2,3,4,5	Existing 2" well at Burning Grounds	BH9
45	1,2,3,4,5	Existing 2" well at Burning Grounds	BH10
46	1,2,3,4,5	Existing 2" well at Burning Grounds	BH4
47	1,2,3,4,5	Existing 2" well at Burning Grounds	BH2
48	1,2,3,4,5	Existing 2" well at Burning Grounds	BH6
49	1,2,3,4,5	Existing 2" well at Burning Grounds	BH11
50	1,2,3,4,5	Existing 2" well at Burning Grounds	BH21
51	1,2,3,4,5	Existing 2" well at Old Landfill	BH12
52	1,2,3,4,5	Existing 2" well at Old Landfill	BH13
53	1,2,3,4,5	Existing 2" well at Active Landfill	BH17

*See Table 4 for parameters included in each category.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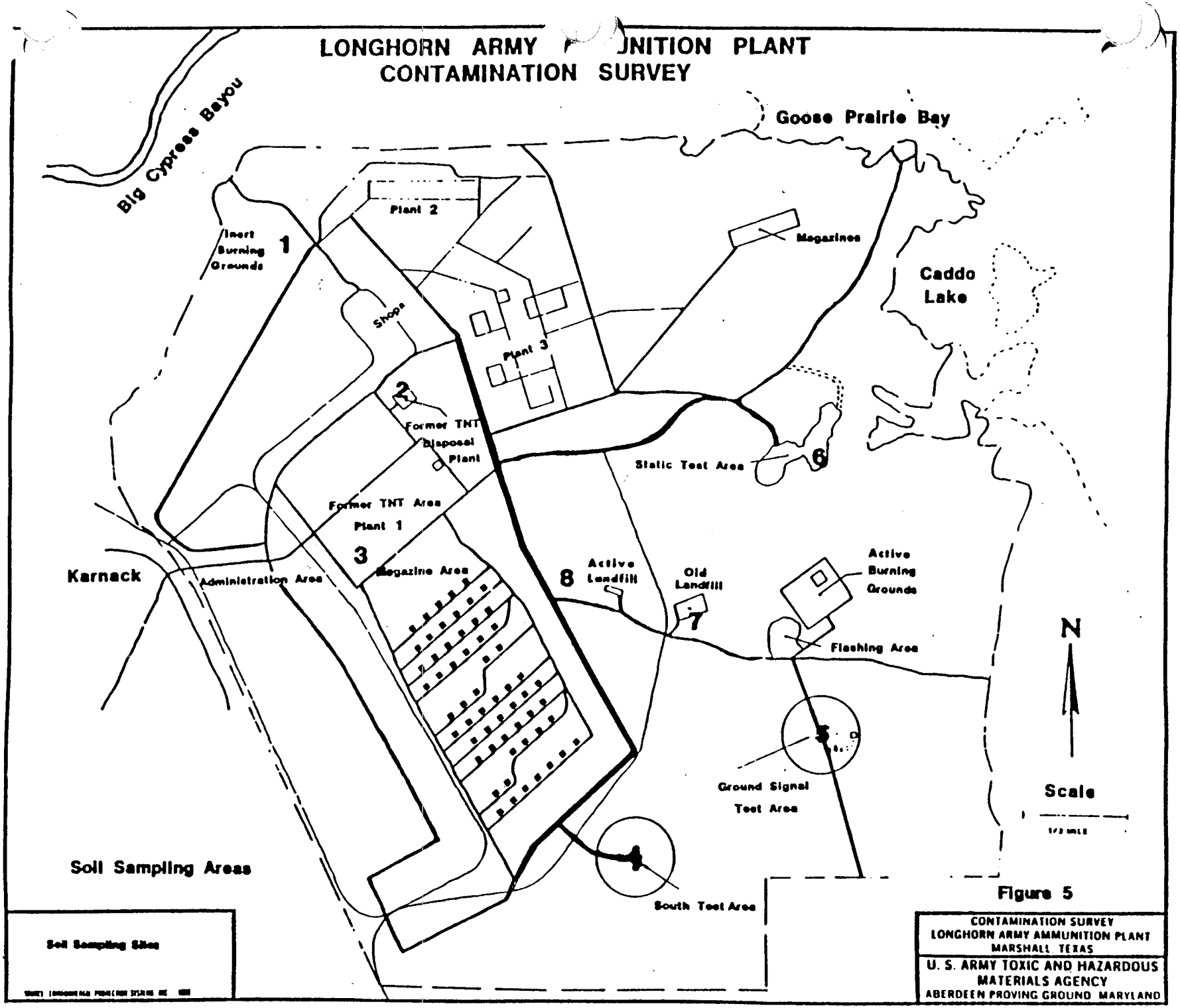
CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL TEXAS
U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND MARYLAND
Surface water-Sediment Sampling Points
Surface water-Sediment Sampling Areas

Table 2

Surface Water and Sediment Sampling Locations and Analytical Requirements

Station	Water Analyses*	Sediment Analyses*	Location
001	1,2,3,4,5,6	1,2,3,4,5,6	Goose Prairie Ck Inlet into Caddo Lake
002	1,2,3	1,2,3	Goose Prairie Creek, E of Plant 3
003	1,6	1	Goose Prairie Creek, W of Plant 3
004	1,2,3	-	Foundation of TNT Waste Disposal Plant
005	1,2,3	1,2,3	Pumphouse Pond in TNT Area
006	1	1	NE of TNT Area
007	1	1	S of TNT Area, Near Avenue N
008	1	1	S of TNT Area, Near Avenue E
009	1,2,3,4,5,6	1,2,3,4,5	At W Boundary, S of Admin. Area
010	1,2,3	1,2,3	Central Creek, E of Avenue p
011	1,2,3,4,5,6	1,2,3,4,5	NW of Active Landfill
012	1,2,3,4,5,6	1,2,3,4,5,6	Central Creek Inlet into Caddo Lake
013	1,2,3,4,5,6	1,2,3,4,5,6	Harrison Bayou Inlet into Caddo Lake
014	1,2,3,4,5	1,2,3,4,5	Rocket Motor Casing Washout Pond
015	1,2,3,4,5,6	1,2,3,4,5	NW of Burning Ground
016	1,2,3,4,5	1,2,3,4,5	NW of Flashing Area
017	1,2,3,4,5,6	1,2,3,4,5	E of Old Landfill
018	1,2,3	1,2,3	Harrison Bayou, S of Avenue Q
019	1,2,3,4,5,6	1,2,3,4,5	At S Boundary, Harrison Bayou
020	1,2,3,4,5,6	1,2,3,4,5,6	Saunders Branch Inlet into Caddo Lake
021	1,2,3	1,2,3	Saunders Branch, S of Longpoint Rd.

* Numbers refer to analytical categories elucidated in Table 4.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Karnack
Administration Area
Static Test Area
6
8
Active Landfill
Old Landfill
7
Active Burning Grounds
Flashing Area
5
Ground Signal Test Area
4
South Test Area
N
Scale
Soil Sampling Areas
Soil Sampling Sites
Figure 5
CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL TEXAS
U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND MARYLAND

00099043

Table 3

Soil Sampling Locations and Analytical Requirements

Area Number	Area Name	Sample Type	Number of Sample Points*	Analytical Category***
010	Inert Burning Grounds	1 ft Core	3	1,2,3,(4,5)**
020	TNT Waste Disposal Plant	1 ft Core	3	1
030	Former TNT Production Area	1 ft Core	8	1
040	South Test Area	1 ft Core	3	1,2,3,(4,5)**
050	Ground Signal Test Area	1 ft Core	3	1,2,3,(4,5)**
060	Static Test Area	1 ft Core	3	1,2,3,(4,5)**
070	Old Landfill	5 ft Core	5	1,2,3,(4,5)**
080	Suspected TNT Burial Site	5 ft Core	3	1

* Each area has the number of sample points specified above and identified, for example, as 0101, 0102, and 0103, or 0701T, 0701B, 0702T, 0702B, etc.

** GC/MS and HPLC was performed only on the composite sample (identified, for example, as 010C) made up of equal portions taken from each of the sample points in an area. For area 070, for example, a composite sample was made up of equal portions taken from each of the upper sections of the 5 ft cores and one made from the lower sections (identified at 070CT and 070CB, respectively).

*** See Table 4 for parameters included in each category.

soil sampling areas and a summary of the analytical requirement for each sampling area.

Three background groundwater monitoring wells (110, 111, and 112) were installed at locations removed from activities conducted at LHAAP at assumed upgradient sites along the LHAAP perimeter (Figure 3). One other monitoring well (108) was also installed in a remote area not directly associated with LHAAP activities. Chemical data for groundwater samples from these four wells is presented in Appendix A. Lithological and geohydrological information about these wells is presented in Appendix G.

Background soil samples were collected during a preliminary site survey at random locations assumed to be free of contamination in the administration area. Chemical data for these soil samples is presented in Appendix G.

2.2 WELL INSTALLATION AND SOIL SAMPLING

Hollow stem augers with an inner diameter of 3 1/4 inches and an outer diameter of 6 5/8 inches were used to drill the borings. The drilling tools, AW rods, bits, and augers were washed with approved water* prior to being used at each well site.

The borings were terminated a minimum of 15 ft below the depth at which water was first encountered in the bore hole. After the auger was advanced to the required depth and the last soil sample was removed, the

*The source of the approved water was the main well of the Uncertain, Texas Water System.

2-inch PVC well casing with 15 ft of well screen was inserted through the hollow stem of the auger. The auger was then pulled from the bore hole and a 20-ft section of 6-inch PVC casing was inserted. The sand pack material was placed through the 6-inch PVC casing to fill the annulus betweeen the 2-inch well screen and the sides of the bore hole. The 6-inch PVC casing was used to prevent caving or fallback into the bore hole as the sand pack material was placed. The 6-inch PVC casing could also be moved vertically to prevent clogging or bridging of the sand between the 6-inch PVC casing and 2-inch PVC well casing and well screen. Due to the shallowness of the bore holes, and the generally cohesive soils present (or soils with apparent cohesion), the 6-inch PVC casing could be removed once the sand pack was in place with no significant caving or fallback into the hole. Then bentonite pellets or powdered bentonite was poured into the bore hole to make the required seal.

Protective steel casings were installed at each monitoring well site and were installed within 2 weeks after each well was installed. The well PVC riser pipes were covered with plastic sheeting until the protective casings were placed. The grout was placed manually into the bore hole, and placement of the grout was monitored closely. Pumping was not required because of the relatively shallow grout placement. The wells were developed as described in the geotechnical report (Larry M. Jacobs & Associates, 1982), which also includes additional detailed geotechnical data not presented in this report.

Soil samples were collected with a standard splitspoon sampler. Initially, a coupling was used to connect an 18-inch and 24-inch barrel

together, which produced a modified sampler capable of being driven 3.0 ft. This allowed additional soil samples to be retained from several boring sites. The normal 18-inch or 24-inch barrel was used after confidence in the soil conditions had increased. Soil samples were collected at 5-ft intervals and/or at major strata intervals.

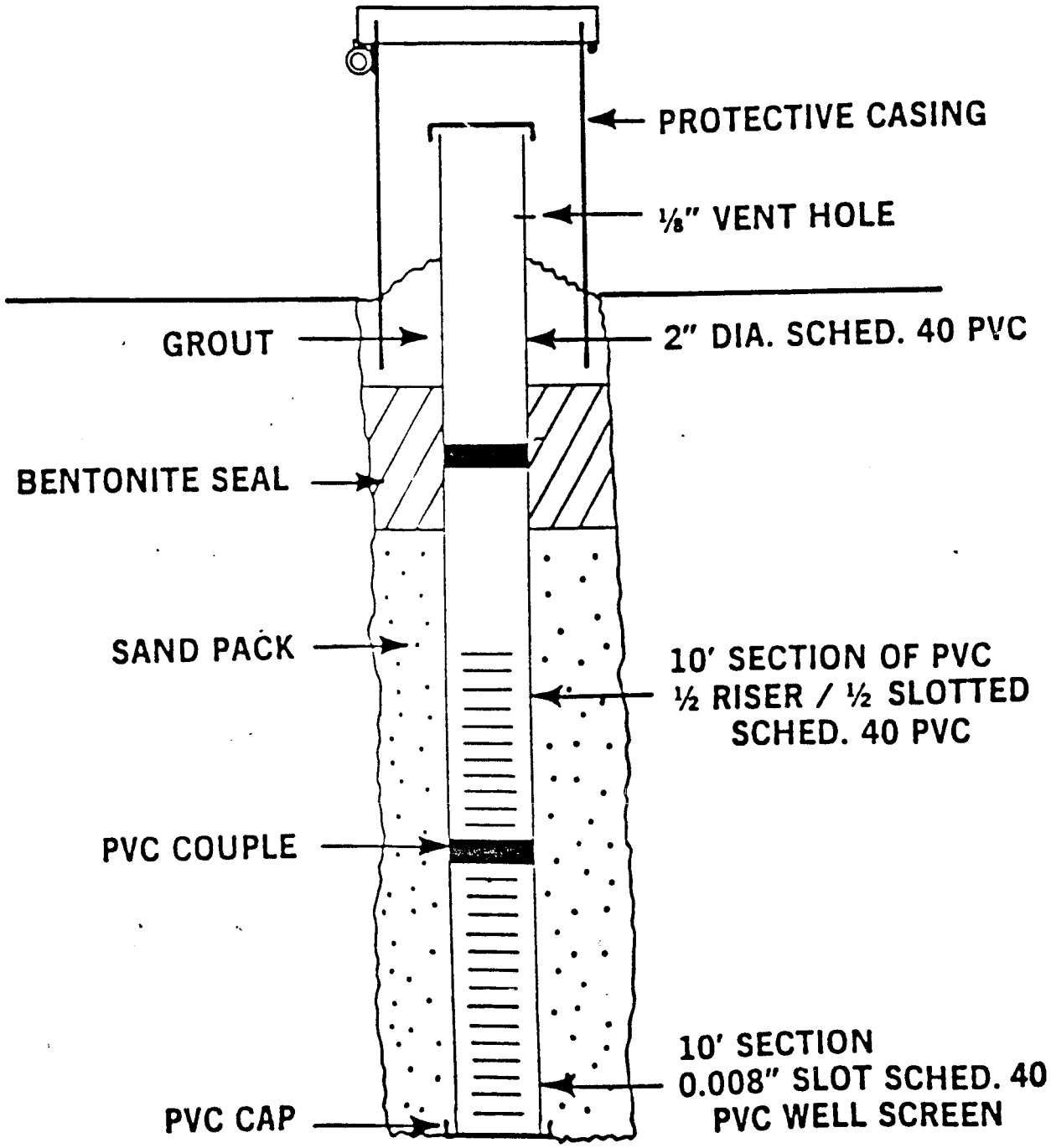
Detailed boring logs containing the required soil classification data and drilling operation remarks were prepared in the field during the soil sampling and installation of the wells. Condensed boring logs are shown in Appendix D and include the Unified Soils Classification of the soil strata, the blow count required to drive the splitspoon sampler, the percentage of material finer than the No. 200 sieve, and additional data needed for the analysis of the aquifer permeability. A detailed sketch of the well, including the well screen, bentonite seal, and water levels, is also shown on each condensed boring log figure (Appendix D). A typical monitoring well profile is provided in Figure 6.

2.3 TOPOGRAPHIC SURVEY METHODS

The topographic surveying of the well locations at LHAAP was conducted by Collins Surveying & Mapping (CSM). All work was conducted in accordance with, and to the tolerances prescribed in, the contamination survey scope of work.

The surveying crew established a control network (both horizontal and vertical) by closed traverse techniques, turning all angles twice and balancing all traverses by transit rule. Horizontal control was established to the nearest meter using the Texas State Plane Coordinate

Figure 6



TYPICAL MONITORING WELL PROFILE

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY

System (North Central Zone). All horizontal coordinates for well points were projected from U.S. Army Corps of Engineers Monument C-20 based on azimuth from U.S. Army Corps of Engineers Monument C-19. The locations of these monuments are shown on the base map included with the final survey report from CSM. Vertical control to the nearest tenth of a foot was established using the U.S. National Geodetic Survey vertical datum of 1929, projected from U.S. Army Corps of Engineers monuments established in 1982. All well points were located by measurement of angle and distance from the nearest control point.

2.4 SAMPLING METHODS

Prior to sampling at all sites at LHAAP, EPS produced a Field Sampling Protocol and Sampling Log Book which was used by all active participants in the sampling program. The sampling methods used were those prescribed by the U.S. Army Toxic and Hazardous Materials Agency in the initial scope of work and, additionally, those presented in EPS's quality assurance document.

Extreme care was taken to prevent potential cross contamination between the sampling sites visited. Accordingly, EPS prepared 53 PVC bailers, which were permanently installed in the monitoring wells, and thus one bailer was specifically restricted for use at a given site. All well sampling was preceeded by the removal of five times the standing water volume in each of the well casings. Field modifications to this procedure were necessary for some of the wells which exhibited very slow recharge characteristics. In these cases the well was first bail-dried, then revisited on the next day, at which time a calculation was made of

he standing water volume in the well. If it was determined that the recharge rate and existing standing volume on the second day were not adequate to meet the sampling volume needs prescribed in the field sampling protocol manual, the well was left unbailed and allowed to recharge for a third day, at which time the well was totally evacuated and all of the water collected was used for the various analyses. By means of a specially prepared bottom-emptying device all water collected in a bailer was placed immediately into bottles which were specifically prepared for each of the analytical categories being investigated at each site.

Surface water was collected directly in the sample bottle, which had been pre-cleaned according to the procedure outlined in the USATHAMA scope of work. This was accomplished by lowering the bottle to the appropriate depth in a weighted carrier and allowing it to fill naturally.

Sediment samples were collected with a coring device. At each station a series of samples was taken across the width of the stream bed to produce a single composite sample.

Soil samples were collected with a thin narrow-blade shovel which was used to dig a hole one foot deep, after which a layer of the undisturbed edge of the hole was removed with the shovel and placed into a 1 gal glass container. All soil samples collected at each site within a sampling area were made up of five random subsamples from the generalized sampling site vicinity.

2.5 SAMPLE HANDLING

The procedures for handling samples in the field after collection were outlined in the Field Sampling Protocol and Sampling Log Book. Field samples were not chemically preserved; however, after labeling, samples were placed into a refrigerated truck, maintained at 4.0 ^{o}C, for temporary storage and transport to EPS's laboratories.

As the first check to insure proper sample collection the field log book contained a list of the samples to be taken at each station. The actual field labels themselves, which were prepared for each site in advance, provided a second check of sampling adequacy. Finally all samples were logged onto a master manifest which was prepared prior to departure from LHAAP to insure that all samples were present and met all criteria stated in EPS's approved quality control document.

All samples were handled with Class I chain of custody at all times after collection, which means they were either maintained under lock and key or were in the personal sight of the sampler, project manager, or analyst who had checked them out for analysis. A chain of custody form was specifically prepared for this contract and one form was signed for each page of the overall manifest prepared upon checking in the samples at LHAAP and into EPS's two laboratories.

All water samples collected at LHAAP were placed directly into containers specifically associated with one of the six analytical categories being investigated during this survey. All containers conformed with USATHAMA-approved specifications. At those stations randomly determined

to be duplicate sample stations, a full series of duplicate samples were collected and placed into individual sampling containers specific to the analytical category being investigated. All containers had affixed to them both a stick-on label and a tie-on tag with identical identification information. In addition to containing the general sample identification information, the field tag contained coded information which designated the exact matrix of interest, and a specific analytical category code for rapid identification and routing within the laboratory. A color coding scheme was developed for the stick-on labels to quickly identify those samples to be transported to each of EPS's two laboratories and those samples identified as having short holding times. The sampling labels used during this survey were designed to allow the removal of the sampling site location information and the insertion of a specific sequence and batch number which facilitated the laboratory control of samples and the FQAC's ability to insert blind spikes, replicates, and blanks which were indistinguishable from actual field samples.

2.6 PARAMETERS

As per the scope of work prepared by USATHAMA the parameters investigated during this survey fell into six main analytical categories. These were (1) explosive analysis, (2) anion analysis, (3) analysis for metals, (4) organic screening analysis by GC/MS, (5) organic screening analysis by GC/EC, and (6) organic screening analysis by HPLC (Table 4). EPS certified 34 quantitative and semiquantitative parameters, as well as an additional 24 parameters associated with the screening tests (Table 5). All of the analytical methods employed by EPS were completely documented in the extensive quality assurance document produced for certification.

Table 4

Analytes Determined for the Longhorn
Army Ammunition Plant Contamination Survey

Analytical Category	Analyte	Matrix
1	1,3 Dinitrobenzene (1,3-DNB)	All
	2,4,6-Trinitrotoluene (2,4,6-TNT)	All
	1,3,5-Trinitrobenzene (1,3,5,-TNB)	All
	2,4-Dinitrotoluene (2,4-DNT)	All
	2,6-Dinitrotoluene (2,6-DNT)	All
	Nitrobenzene (NB)	All
2	Nitrates	All
	Nitrites	All
	Phosphates	All
	Sulfates	All
	Chloride*	All
	Fluoride*	All
	Chromate*	All
	Cyanide*	All
3	Aluminum	All
	Antimony	All
	Barium	All
	Cadmium	All
	Chromium	All
	Lead	All
	Manganese	All
	Strontium	All
	Mercury*	All
	Copper*	All
	Zinc*	All
	Arsenic*	All
	Beryllium*	All
	Silver*	All
	Thallium*	All
4	GC/MS (Volatiles)	W
	GC/MS (Acid fraction)	All
	GC/MS (Base/neutral fraction)	All
5	HPLC (Screen of general organic compounds)	All
6	GC/EC (Screen for pesticides, organochlorines, PCB's, and related compounds)	All

* Semi-quantitative determination
W=Surface water and groundwater
All=Surface water, Groundwater, soil and sediment

Table 5

EPS Certified Methods
and Associated Detection Limits

Analyte	Test Name	Matrix	Cert. Level	Method Number	Tested Range	Detection Limit
Mercury	HG	WA	QN	1D	0.5-10 ug/l	1.3 ug/l
Copper	CU	WA	QN	1M	10-200 ug/l	23.9 ug/l
Zinc	ZN	WA	QN	1M	10-200 ug/l	27.1 ug/l
Beryllium	BE	WA	SQ	1M	10-200 ug/l	10 ug/l
Nickel	NI	WA	SQ	1M	10-200 ug/l	30 ug/l
Silver	AG	WA	SQ	1M	10-200 ug/l	10 ug/l
Manganese	MN	WA	QN	1M	10-200 ug/l	12.1 ug/l
Strontium	SR	WA	QN	1M	25-500 ug/l	25 ug/l
Aluminum	AL	WA	QN	1M	10-200 ug/l	10 ug/l
Thallium	TL	WA	SQ	1M	50-1000 ug/l	50 ug/l
Lead	PB	WA	QN	1B	5-100 ug/l	7.49 ug/l
Chromium	CR	WA	QN	1B	5-100 ug/l	6.64 ug/l
Cadmium	CD	WA	QN	1B	0.25-5 ug/l	0.28 ug/l
Antimony	SB	WA	QN	1B	10-200 ug/l	10.2 ug/l
Arsenic	AS	WA	SQ	1B	5-100 ug/l	6 ug/l
Barium	BA	WA	QN	1B	10-200 ug/l	11.4 ug/l
Selenium	SE	WA	SQ	1B	5-100 ug/l	6 ug/l
Mercury	HG	SO	QN	2D	0.5-10 ug/g	2.7 ug/g
Chromium	CR	SO	QN	1N	0.5-10 ug/g	0.6 ug/g
Cadmium	CD	SO	QN	1N	0.5-10 ug/g	0.5 ug/g
Copper	CU	SO	QN	1N	0.5-10 ug/g	0.5 ug/g
Zinc	ZN	SO	QN	1N	0.5-10 ug/g	0.5 ug/g

Table 5
(Continued)

Analyte	Test Name	Matrix	Cert. Level	Method Number	Tested Range	Detection Limit
Beryllium	BE	SO	SQ	1N	0.5-10 ug/g	0.5 ug/g
Nickel	NI	SO	SQ	1N	0.5-10 ug/g	0.5 ug/g
Silver	AG	SO	SQ	1N	0.5-10 ug/g	0.5 ug/g
Manganese	MN	SO	QN	1N	0.25-5 ug/g	0.25 ug/g
Aluminum	AL	SO	QN	1N	0.25-5 ug/g	0.36 ug/g
Strontium	SR	SO	QN	1N	0.5-10 ug/g	0.5 ug/g
Thallium	TL	SO	SQ	1N	2.5-50 ug/g	3 ug/g
Lead	PB	SO	QN	1J	0.5-10 ug/g	0.89 ug/g
Arsenic	AS	SO	SQ	1J	0.25-10 ug/g	0.3 ug/g
Barium	BA	SO	QN	1J	0.5-10 ug/g	0.99 ug/g
Antimony	SB	SO	QN	1J	0.5-10 ug/g	0.76 ug/g
Selenium	SE	SO	SQ	1J	0.5-10 ug/g	0.5 ug/g
Nitrate	NO3	WA	QN	2P	500-10000 ug/l	500 ug/l
Nitrite	NO2	WA	QN	2P	250-5000 ug/l	250 ug/l
Phosphate	PO4	WA	QN	2P	125-2500 ug/l	125 ug/l
Sulfate	SO4	WA	QN	2P	500-10000 ug/l	580 ug/l
Chloride	CL	WA	SQ	2P	500-10000 ug/l	500 ug/l
Fluoride	F	WA	SQ	2P	500-10000 ug/l	500 ug/l
Chromate	CRO4	WA	SQ	2P	500-10000 ug/l	500 ug/l
Thiocyanate	SCN	WA	SQ	2P	500-10000 ug/l	500 ug/l
Cyanide	CYN	WA	SQ	2P	500-10000 ug/l	600 ug/l
Nitrate	NO3	SO	SQ	7U	5-100 ug/g	5 ug/g
Nitrite	NO2	SO	QN	7U	5-100 ug/g	5 ug/g
Sulfate	SO4	SO	QN	7U	25-500 ug/g	25 ug/g

Table 5
(Continued)

Analyte	Test Name	Matrix	Cert. Level	Method Number	Tested Range	Detection Limit
Chloride	CL	SO	SQ	7U	5-100 ug/g	7 ug/g
Fluoride	F	SO	SQ	7U	5-100 ug/g	5 ug/g
Chromate	CRO4	SO	SQ	7U	5-100 ug/g	5 ug/g
Thiocyanate	SCN	SO	SQ	7U	5-100 ug/g	10 ug/g
Cyanide	CYN	SO	SQ	7U	5-100 ug/g	5 ug/g
1,3-Dinitrobenzene	13DNB	WA	QN	7V	0.5-10 ug/l	1.68 ug/l
2,4,6-Trinitrotoluene	246TNT	WA	QN	7V	0.5-10 ug/l	1.46 ug/l
1,3,5-Trinitrobenzene	135TNB	WA	QN	7V	0.5-10 ug/l	1.08 ug/l
2,4-Dinitrotoluene	24DNT	WA	QN	7V	0.5-10 ug/l	0.89 ug/l
2,6-Dinitrotoluene	26DNT	WA	QN	7V	0.5-10 ug/l	1.20 ug/l
Nitrobenzene	NB	WA	QN	7V	0.5-10 ug/l	0.76 ug/l
1,3-Dinitrobenzene	13DNB	SO	QN	7W	0.5-10 ug/g	0.50 ug/g
2,4,6-Trinitrotoluene	246TNT	SO	QN	7W	0.5-10 ug/g	0.73 ug/g
1,3,5-Trinitrobenzene	135TNB	SO	QN	7W	0.5-10 ug/g	0.71 ug/g
2,4-Dinitrotoluene	24DNT	SO	QN	7W	0.5-10 ug/g	0.5 ug/g
2,6-Dinitrotoluene	26DNT	SO	QN	7W	0.5-10 ug/g	0.61 ug/g
trobenzene	NB	SO	QN	7W	0.5-10 ug/g	1.15 ug/g
p,p'-DDT	PPDDT	WA	SQ	2F	0.05-1 ug/l	0.05 ug/l
Dieldrin	DLDRN	WA	SQ	2F	0.05-1 ug/l	0.09 ug/l

Table 5
(Continued)

Analyte	Test Name	Matrix	Cert. Level	Method Number	Tested Range	Detection Limit
Alpha-BHC	ABHC	WA	SQ	2F	0.05-1 ug/l	0.09 ug/l
Heptachlor	HPLC	WA	SQ	2F	0.05-1 ug/l	0.05 ug/l
Lindane	LIN	WA	SQ	2F	0.05-1 ug/l	0.09 ug/l
Toxaphene	TXPHEN	WA	SQ	2F	2.5-50 ug/l	4 ug/l
PCB 1016	PCB016	WA	SQ	2F	0.52-11 ug/l	0.6 ug/l
PCB 1260	PCB260	WA	SQ	2F	0.52-11 ug/l	1 ug/l
p,p'-DDT	PPDDT	SO	SQ	6V	0.05-1 ug/g	0.09 ug/l
Dieldrin	DLDRN	SO	SQ	6V	0.05-1 ug/g	0.05 ug/g
Alpha-BHC	ABHC	SO	SQ	6V	0.05-1 ug/g	0.05 ug/g
Heptachlor	HPLC	SO	SQ	6V	0.05-1 ug/g	0.05 ug/g
Lindane	LIN	SO	SQ	6V	0.05-1 ug/g	0.05 ug/g
Toxaphene	TXPHEN	SO	SQ	6V	2.5-50 ug/g	4 ug/g
PCB 1016	PCB016	SO	SQ	6V	0.52-11 ug/g	0.6 ug/g
PCB 1260	PCB260	SO	SQ	6V	0.52-11 ug/g	0.7 ug/g
Benzene	C6H6	WA	SQ	2J	0.5-10.4 ug/l	1 ug/l
Chloroform	CHCL3	WA	SQ	2J	0.5-10 ug/l	1 ug/l
Trichloro-ethene	TRCLE	WA	SQ	2J	0.5-10.4 ug/l	1 ug/l
Trichloro-fluoromethane	CCL3F	WA	SQ	2J	0.5-10 ug/l	2 ug/l
Pentachloro-phenol	PCP	WA	SQ	1X	0.43-22.4 ug/l	2 ug/l
2-Chlorophenol	2CLP	WA	SQ	1X	0.46-20.6 ug/l	0.7 ug/l
2,4-Dichloro-phenol	24DCLP	WA	SQ	1X	0.46-22.2 ug/l	1 ug/l
2-Fluorophenol	2FP	WA	SQ	1X	1.02-20.4 ug/l	6 ug/l
Pentafluoro-phenol	PFP	WA	SQ	1X	1.15-23 ug/l	4 ug/l

Table 5
(Continued)

Analyte	Test Name	Matrix	Cert. Level	Method Number	Tested Range	Detection Limit
Phenol-D6	PHEND6	WA	SQ	1X	1.07-21.4 ug/l	2 ug/l
Di-N-Butyl-phthalate	DNBP	WA	SQ	1Z	0.502-20.4 ug/l	2 ug/l
Diethylphthalate	DEP	WA	SQ	1Z	0.53-20.4 ug/l	2 ug/l
Nitrobenzene	NB	WA	SQ	1Z	0.49-20.2 ug/l	1 ug/l
1-Fluoro-naphthalene	1FNAP	WA	SQ	1Z	1.07-21.4 ug/l	2 ug/l
2-Fluorobiphenyl	2FBP	WA	SQ	1Z	1.09-21.8 ug/l	2 ug/l
Pentachloro-phenol	PCP	SO	SQ	1Y	0.43-11.2 ug/g	1 ug/g
2-Chlorophenol	2CLP	SO	SQ	1Y	0.46-10.3 ug/g	0.7 ug/g
2,4-Dichloro-phenol	24DLCP	SO	SQ	1Y	0.45-11.1 ug/g	1 ug/g
2-Fluorophenol	2FP	SO	SQ	1Y	0.51-10.7 ug/g	3 ug/g
Pentafluoro-phenol	PFP	SO	SQ	1Y	0.575-11.5 ug/g	3 ug/g
Phenol-D6	PHEND6	SO	SQ	1Y	0.535-10.7 ug/g	3 ug/g
Di-N-Butyl-phthalate	DNBP	SO	SQ	2A	0.51-10.4 ug/g	0.7 ug/g
Diethyl-phthalate	DEP	SO	SQ	2A	0.51-10.6 ug/g	1 ug/g
Nitrobenzene	NB	SO	SQ	2A	0.49-10.1 ug/g	0.6 ug/g
1-Fluoro-naphthalene	1FNAP	SO	SQ	2A	0.535-10.7 ug/g	2 ug/g
2-Fluorobi-phenyl	2FBP	SO	SQ	2A	1.09-21.8 ug/g	2 ug/g

SO = Soil and sediment
WA = Water
QN = Quantitative
SQ = Semi-quantitative

All procedures, which were thoroughly tested prior to the collection and analysis of actual field samples, worked well during the analytical phase of the survey and no modifications of established procedures were required.

2.7 ANALYTICAL METHODS

2.7.1 EXPLOSIVES

EPS developed, tested, and employed a new method for extraction and analysis of explosives in soil and water samples. Specifically, analysis of explosives in water involved the use of C-18 bonded phase enrichment columns for extraction and concentration. A small aliquot of methanol was used for elution and the eluent was analyzed with a Hewlett-Packard Model 1084B Liquid Chromatograph. This method provided rapid extraction, low detection limit, and multi-compound analysis of all explosives identified for this project. Analysis of explosives in soil was conducted by HPLC on methanol extracts of dried samples.

2.7.2 ANIONS

Anion analysis for this survey employed a Dionex Model 10 ion chromatograph.

Preparation of water samples required only filtration through a 0.45 micron filter prior to injection. To analyze for all of the anions three discrete runs were needed for each water sample.

Soil samples were extracted in a carbonate-bicarbonate eluent, with a

soak time of 12 hrs, following an initial mixing and a 30-min agitation in an ultrasonic bath. Then the extract was analyzed.

2.7.3 METALS

Analysis of metals in soil and water samples for this survey employed flame and flameless techniques of atomic absorption on a Perkin-Elmer Model 5000 atomic absorption spectrophotometer. U.S. Environmental Protection Agency procedures (U.S.E.P.A., 1979) were used for all metals analyses.

2.7.4 GC/MS SCREEN

GC/MS screening of water and soil samples employed a Hewlett Packard Model 5992A Quadrupole Gas Chromatograph/Mass Spectrometer. All analyses were conducted in accordance with EPA Methods 624 and 625. The extraction of soil samples followed procedures outlined in Interim Methods for the Sampling and Analysis of Priority Pollutants in Sediment and Fish Tissue (U.S.E.P.A., 1981b).

2.7.5 GC/EC SCREEN

GC/EC screening of water and sediment samples for pesticides and PCBs employed a Hewlett Packard Model 5880A Programmable Gas Chromatograph with EC detector. Analyses were conducted as described in EPA Method 608, with soil extraction techniques being conducted in accordance with Interim Methods for the Sampling and Analysis of Priority Pollutants in Sediment and Fish Tissue (U.S.E.P.A., 1981b).

2.7.6 HPLC SCREEN

Screening for organic compounds by HPLC was conducted simultaneously with

xplosives analysis on the Hewlett Packard Model 1084B Liquid Chromatograph and employed methods previously outlined in Section 2.7.1.

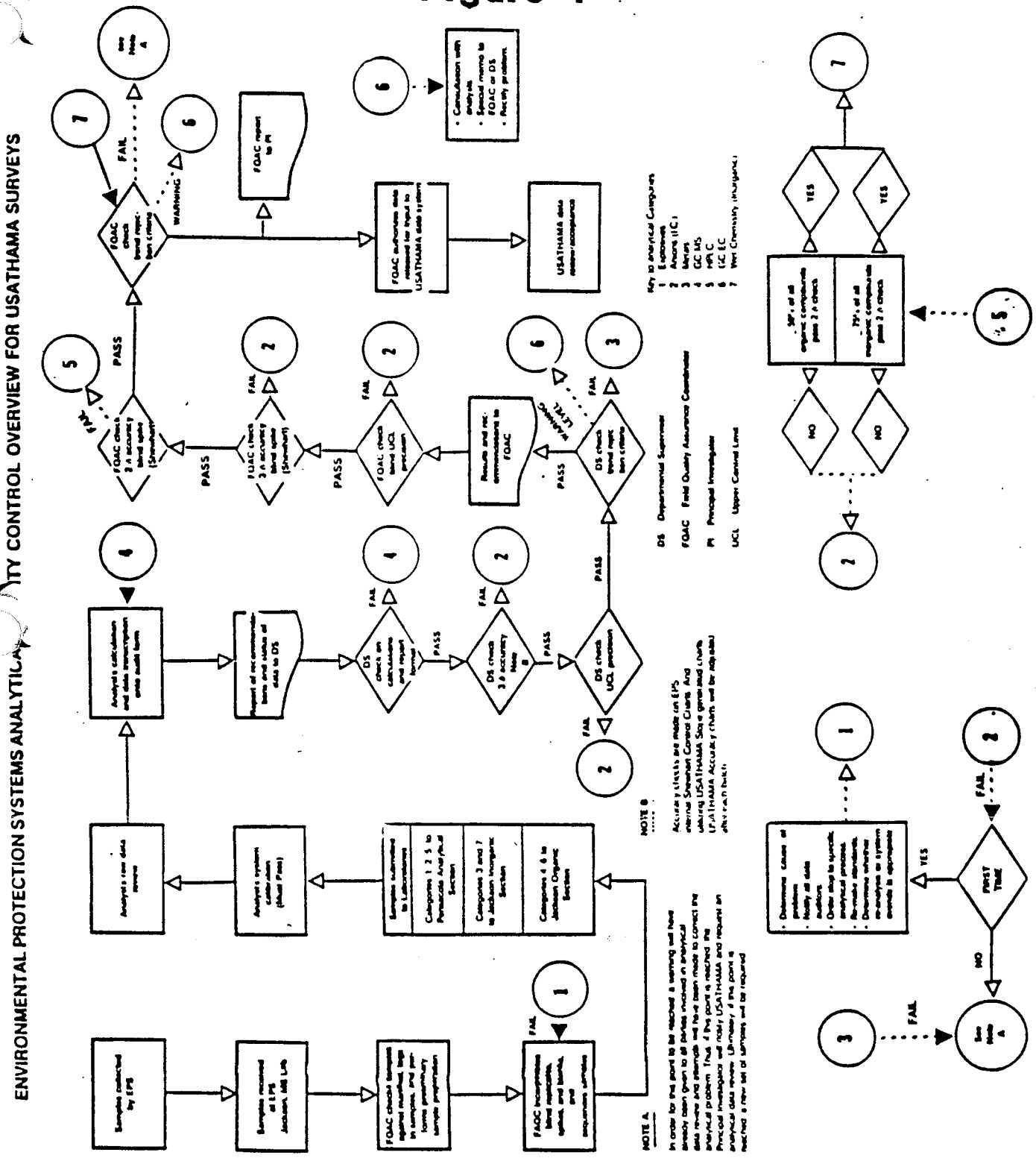
2.8 QUALITY CONTROL

Quality control was exercised from the initiation of this project and during all phases of operation. Quality control for this survey was a multi-tiered program involving the chemical analytical branch of USATHAMA and the USATHAMA project manager in addition to the internal quality control measures exercised by EPS and its subcontractors.

Quality control began with the use of time-proven and well-documented techniques to carry out not only the sampling and analytical portions but also the geotechnical, surveying, and mapping portions of this project. The specific quality control program associated with the analytical portion of this project (Figure 7) consisted of the documentation and testing of the procedures to be employed in the investigation of the chemical constituents expected to be present in samples collected at LHAAP.

EPS designed the quality control program using guidelines provided in USATHAMA's Quality Assurance Plan dated August 1980, and produced a comprehensive quality assurance document which not only outlined the steps taken to insure quality control throughout the analytical process, but also demonstrated and documented the ability of our laboratories, personnel, and equipment to conduct this analytical effort and produce high quality data to be used for decision making by USATHAMA and Thiokol. All methods used for this survey underwent a detailed validation

Figure 7



EPS Analytical

QC Overview

SOURCE: ENVIRONMENTAL PROTECTION SYSTEMS, INC. - 1983

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

procedure outlined in USATHAMA's quality control program and were certified as acceptable by USATHAMA before initiation of the field work.

Analytical laboratory standards were prepared from standard analytical reference material (SARM) obtained from USATHAMA spiked at 0.5, 1, 2, 5, and 10 times the limits of detection prescribed in the scope of work. Quantitative certification required analysis in duplicate over four days of each analyte at all spiking levels in specially prepared laboratory water. An additional fifth day of evaluation was required using background water believed to be typical of uncontaminated water from the LHAAP area. This background water was unchlorinated water obtained from the municipal well of Uncertain, Texas. Quantitative validation of methods for soil analyses required four days at the same spiking levels (0.5X, 1X, 2X, 5X, and 10X), with SARMs added to uncontaminated soil from the LHAAP area as the background matrix. Semi-quantitative data for all parameters in water and soil underwent the same analytical procedure as previously described for quantitative certification, however, demonstration of the methods was restricted to a one-day analytical event.

All data generated during the methods validation phase of this project was entered into the Tektronix 4051 Graphic Computing System, and, using statistical tape provided by USATHAMA, all detection limits, slopes, correlation coefficients, and standard error of the estimate calculations were made. The detection limits were calculated according to statistical methods outlined in Hubaux and Vos (1970). The calculated slopes of the linear regression were used as a measure of accuracy and the standard

error of the estimate was selected as the statistic to measure the precision of each of the validated methods.

Quality control for the sampling and analytical process included the extraordinary cleaning of field sample containers, the preparation of specific labels for each of the field samples to be collected, the documentation in sampler-specific log books of the exact conditions under which samples were collected, and the preparation of an overall manifest to insure that all samples were collected and labeled properly and present for shipment from LHAAP. The quality control continued through the use of strict chain of custody documentation from the field to the laboratory, where the Field Quality Assurance Coordinator (FQAC) inserted blind replicate spikes and standards into the sample sequence and placed discrete laboratory numbers on each sample to insure their proper sequencing and anonymity to the analyst. All spiking, sequencing, and introduction of blanks and duplicates was conducted by the FQAC in a room separated from the main analytical laboratory. Each analytical lot-sized group of samples (batch) to be analyzed for a quantitatively or semi-quantitatively certified analyte contained at least one blind spike and one reference sample and either one blank or one replicate. Each batch was equivalent to a sample lot as defined and described in USATHAMA's quality assurance program. Specific batch-by-batch data control sheets were used by EPS to monitor the quality and maintain strict control on the availability of data associated with each batch of samples analyzed. A three-tiered approach to in-laboratory quality control was exerted which included a preliminary analyst review, a departmental supervisor review, and the Field Quality Assurance Coordinator's overall review of the data (Figure 7).

2.9 ANALYTICAL RESULTS

Appendixes A, B, and C present tabular summaries of analytical data produced by this survey. The tables are organized according to the following format: (1) results for well samples (Appendix A) are presented according to the specific area of concern under investigation; (2) results for surface water and sediments (Appendix B) are presented by drainage basin, starting with the most upstream site and proceeding across LHAAP to Caddo Lake; (3) results for soil samples (Appendix C) are presented in groups which represent distinct areas of concern.

All analytical results were produced in batches which met the strict quality control requirements established in EPS's quality assurance document. Several anomalous samples (less than five percent of all samples) were encountered during this survey, and these were reanalyzed for the metals which showed aberrant results and found to be special conditions which were not addressed in the quality assurance document. The resolution to these anomalies has been presented in the LHAAP Contamination Analysis Report (EPS, 1983).

A detailed review of the analytical results produced during this survey is presented in Section 4, with specific reviews of each of the 11 areas of concern. Additionally, the results of samples collected from the four major streams running across LHAAP and from Caddo Lake are presented and reviewed in Section 5 of this report.

2.9.1 TEXAS DEPARTMENT OF HEALTH DRINKING WATER STANDARDS

Table 6 presents the drinking water standards now used by the Texas

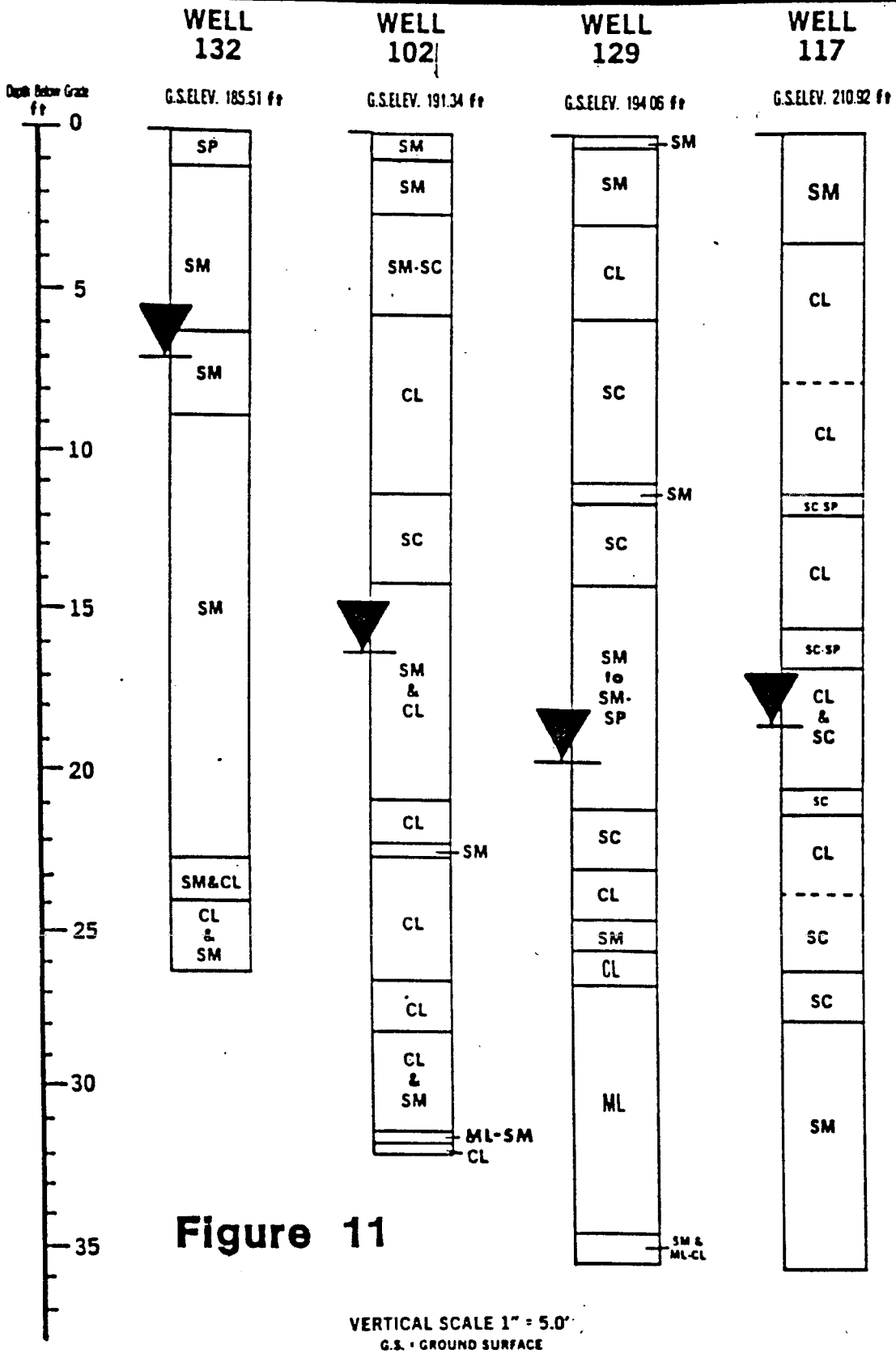


Figure 11

VERTICAL SCALE 1" = 5.0'
G.S. = GROUND SURFACE

TYPICAL SOIL STRATIFICATION

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY

Table 6

Texas Department of Health Drinking Water Standards
Maximum Allowable Limits

Parameter	Limit (mg/l)	Limit (ug/l)	Limit (other)
Inorganic			
Arsenic	0.05	50	
Barium	1	1,000	
Cadmium	0.010	10	
Chromium	0.05	50	
Lead	0.05	50	
Mercury	0.002	2	
Nitrate (as N)	10	10,000	
Selenium	0.01	10	
Silver	0.05	50	
Organic			
Endrin	0.0002	0.2	
Lindane	0.004	4	
Methoxychlor	0.1	100	
Toxaphene	0.005	5	
2,4-D	0.1	100	
2,4,5-TP (Silvex)	0.01	10	
Total trihalomethanes	0.1	100	
Secondary Constituents			
Copper	1	1,000	
Iron	0.03	30	
Manganese	0.05	50	
Zinc	5	5,000	
Chloride	300	300,000	
Sulfate	300	300,000	
Hydrogen Sulfide	0.05	50	
Foaming agents	0.5	500	
Total Dissolved Solids	1,000	1,000,000	
pH			>7.0
Color			15 color units
Odor			3 threshold odor number
Corrosivity			Noncorrosive

From Texas Department of Health, Division of Water Hygiene, Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for Public Water Supply Systems (Adopted 30 Nov 1977, Revised 1 Nov 1980).

Department of Health to evaluate the quality of drinking water within the state. The results presented in Sections 4 and 5 of this report have been evaluated with respect to these standards. Ultimately, most surface water and groundwater of LHAAP enters Caddo Lake, which is increasingly being used as a drinking water supply; thus, the application of this standard is very appropriate.

2.9.2 U.S. ENVIRONMENTAL PROTECTION AGENCY CRITERIA

Table 7 presents a comprehensive listing of the final water quality criteria for aquatic life and human health established by the U.S. Environmental Protection Agency. Data produced during this survey were compared to these criteria, which served as a guideline for evaluating the existing water quality at LHAAP.

2.9.3 U.S. ARMY CRITERIA FOR MUNITION COMPOUNDS

Table 8 presents the recommended interim environmental criteria for munition compounds prepared by the U.S. Army Medical Bioengineering Research and Development Laboratory. Results of explosives analyses for surface water and groundwater samples were evaluated in light of these criteria.

Tab

U.S. Environmental Protection Agency
Water Quality Criteria and Detection Limits

Parameter	Aquatic Life Criteria*		Human Health Criteria**	Detection Limit+
	Fresh Water	Salt Water		
Acenaphthene	1,700 ug/l(A)	970 ug/l(A); 710 ug/l(Ch)	20 ug/l (O)	3 ug/l
Acrolein	68 ug/l(A); 21 ug/l (Ch)	55 ug/l(A)	320 ug/l (T)	2 ug/l
Acrylonitrile	7,550 ug/l(A)	7,550 ug/l(A)	0.58 ug/l (C)	100 ug/l
Aldrin	3 ug/l max (A)	1.3 ug/l max (A)	0.00074 ug/l (C)	0.003 ug/l
Dieldrin	0.0019 ug/l (24 hr)	0.0019 ug/l (24 hr)	0.00071 ug/l (C)	0.006 ug/l
Antimony	9,000 ug/l(A),	9,000 ug/l(A);1600 ug/l(Ch)	146 ug/l (T)	3 ug/l
Arsenic	440 ug/l (max)	508 ug/l(A)	0.022 ug/l (C)	53 ug/l
Asbestos	———	———	300,000 fbr/l (C)	100,000 fbr/l
Benzene	5,300 ug/l(A)	5,100 ug/l(A)	6.6 ug/l (C)	0.2 ug/l
Benzidine	2,500 ug/l(A)	———	0.0012 ug/l (C)	0.05 ug/l
Beryllium	130 ug/l(A); 5.3 ug/l(Ch)	———	0.037 ug/l (C)	0.3 ug/l
Cadmium	0.012 ug/l (24 hr)	4.5 ug/l 24 hr	10 ug/l (T)	4 ug/l
	1.5 ug/l (max)	59 ug/l (max)	———	———
Carbon Tetrachloride	35,200 ug/l(A)	50,000 ug/l(A)	4.0 ug/l (C)	0.007 ug/l
Chlordane	0.0043 ug/l (24 hr)	0.004 ug/l (24 hr)	0.0046 ug/l (C)	0.4 ug/l
	2.4 ug/l (max)	0.09 ug/l (max)	———	———
Chlorinated Benzenes:	250 ug/l(A)	129 ug/l(A,Ch)	———	———
monochlorobenzene	———	———	488 ug/l (T)	0.03 ug/l
	———	———	20 ug/l (O)	———
1,2,4,5-tetrachlorobenzene	———	———	38 ug/l (T)	———
pentachlorobenzene	———	———	74 ug/l (T)	———
hexachlorobenzene	———	———	0.0072 ug/l (C)	0.001 ug/l
Chlorinated Ethanes:				
1,2-dichloroethane	118,000 ug/l(A);20,000 ug/l(Ch)	113,000 ug/l(A)	9.4 ug/l (C)	0.006 ug/l
1,1,1-trichloroethane	18,000 ug/l(A);	31,200 ug/l(A)	184000 ug/l (T)	0.005 ug/l
1,1,2-trichloroethane	18,000 ug/l (A)	1,800 ug/l(A);9400 ug/l(Ch)	6 ug/l (C)	0.006 ug/l
1,1,2,2-tetrachloroethane	9,320 ug/l(A);2,400 ug/l (Ch)	9,020 ug/l (A)	1.7 ug/l (C)	0.006 ug/l
pentachloroethane	7,240 ug/l(A);1100 ug/l (Ch)	390 ug/l(A);281 ug/l(Ch)	———	———
hexachloroethane	980 ug/l(A);540 ug/l(Ch)	940 ug/l(A)	19 ug/l (C)	0.001 ug/l
Chlorinated Napthalenes	1,600 ug/l(A)	7.5 ug/l(A)	———	0.015 ug/l
Chlorinated Phenols:				
3-monochlorophenol	500,000 ug/l(A)	———	0.1 ug/l (O)	———
4-monochlorophenol	500,000 ug/l(A)	29,700 ug/l(A)	0.1 ug/l (O)	———

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Table
(Continue

Parameter	Aquatic Life Criteria* Fresh Water	Aquatic Life Criteria* Salt Water	Human Health Criteria**	Detection Limit+
2,5-dichlorophenol	500,000 ug/l(A)	———	0.5 ug/l (O)	———
2,6-dichlorophenol	500,000 ug/l(A)	———	0.2 ug/l (O)	———
3,4 dichlorphenol	500,000 ug/l(A)	———	0.3 ug/l (O)	———
2,4,5-trichlorophenol	500,000 ug/l(A)	———	2600 ug/l (T)	———
	———	———	1 ug/l (O)	———
2,4,6-trichlorophenol	970 ug/l(Ch)	———	12 ug/l (C)	5 ug/l
	———	———	2 ug/l (O)	———
2,3,4,6-tetrachlorophenol	500,000 ug/l(A)	———	1 ug/l (O)	———
2,3,5,6-tetrachlorophenol	———	440 ug/l(A)	1800 ug/l (O)	———
2-methyl-4-chlorophenol	———	———	1800 ug/l (O)	———
3-methyl-4-chlorophenol	500,000 ug/l(A)	———	3000 ug/l (O)	8.3 ug/l
3-methyl-6-chlorophenol	500,000 ug/l(A)	———	20 ug/l (O)	———
Chloroalkyl Ethers:	238,000 ug/l(A)	———	———	———
bis (2-chloroisopropyl) ether	———	34.7 ug/l (T)	0.9 ug/l	———
bis (chloromethyl) ether	———	———	0.000038 ug/l (C)	0.4 ug/l
bis (2-chloroethyl) ether	———	———	0.3 ug/l (C)	0.5 ug/l
Chloroform	28,900 ug/l(A); 1,240 ug/l(Ch)	1.9 ug/l (C)	0.006 ug/l	———
2-Chlorophenol	4,380 ug/l(A)	———	0.1 ug/l (O)	2 ug/l
Chromium VI	0.29 ug/l (24 hr)	18 ug/l (24 hr)	50 ug/l (T)	7 ug/l
	21 ug/l (max)	1260 ug/l (max)	———	———
Chromium III	2200 ug/l (max)	———	170000 ug/l (T)	7 ug/l
Copper	5.6 ug/l (24 hr)	4 ug/l (24 hr)	1000 ug/l (O)	6 ug/l
	12 ug/l (max)	23 ug/l (max)	———	———
Cyanide	3.5 ug/l (24 hr)	———	200 ug/l (T)	5 ug/l
	52 ug/l (max)	———	———	———
DDT	0.001 ug/l (24 hr)	0.001 ug/l (24 hr)	0.00024 ug/l (C)	0.016 ug/l
	1.1 ug/l (max)	0.13 ug/l (max)	———	———
Dichlorobenzenes	1120 ug/l(A); 763 ug/l(Ch)	1,970 ug/l(A)	400 ug/l (A)	0.009 ug/l
Dichlorobenzidine	———	———	0.103 ug/l (C)	0.1 ug/l
1,1-Dichloroethylene	11,600 ug/l(A)	224,000 ug/l(A)	0.33 ug/l (C)	0.006 ug/l
2,4-Dichlorophenol	2,000 ug/l(A); 365 ug/l(Ch)	———	0.3 ug/l (O)	2.1 ug/l
Dichloropropanes	23,000 ug/l(A); 5700 ug/l(Ch)	10,300 ug/l(A); 3,040 ug/l(Ch)	———	———
Dichloropropenes	6,060 ug/l(A); 244 ug/l(Ch)	790 ug/l(A)	87 ug/l (T)	0.006 ug/l
2,4-Dimethylphenol	2,120 ug/l(A)	———	400 ug/l (O)	1.7 ug/l
2,4-Dinitrotoluene	330 ug/l(A); 230 ug/l(Ch)	590 ug/l(A)	1.1 ug/l (C)	0.06 ug/l
1,2-Diphenylhydrazine	270 ug/l(A)	———	0.4 ug/l (C)	10 ug/l
Endosulfan	0.056 ug/l (24 hr)	0.0087 ug/l (24 hr)	74 ug/l (T)	0.005 ug/l
	0.22 ug/l (max)	0.034 ug/l (max)	———	———

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Table
(Continued)

Parameter	Aquatic Life Criteria* Fresh Water	Aquatic Life Criteria* Salt Water	Human Health Criteria**	Detection Limit+
Endrin	0.0023 ug/l (24 hr) 0.18 ug/l (max)	0.0023 ug/l (24 hr) 0.037 ug/l (max)	1 ug/l (T)	0.009 ug/l
Ethylbenzene	32,000 ug/l(A)	430 ug/l(A)	1400 ug/l (T)	10 ug/l
Fluoranthene	3,980 ug/l(A)	40 ug/l(A); 16 ug/l(Ch)	42 ug/l (T)	0.05 ug/l
Haloethers	360 ug/l(A); 122 ug/l(Ch)	———	———	0.06 ug/l
Halomethanes	11,000 ug/l (A)	12,000(A); 6,400 ug/l(Ch)	#1.9 ug/l (C)	0.01 ug/l
Heptachlor	0.0038 ug/l (24 hr) 0.52 ug/l (max)	0.0036 ug/l (24 hr) 0.053 ug/l (max)	0.00278 ug/l (C)	0.002 ug/l
Hexachlorobutadiene	90 ug/l(A); 9.3 ug/l(Ch)	32 ug/l (A)	4.47 ug/l (C)	0.001 ug/l
Hexachlorocyclohexane				
alpha-BHC	100 ug/l(A)	0.34 ug/l(A)	0.092 ug/l (C)	0.002 ug/l
beta-BHC	100 ug/l(A)	0.34 ug/l	0.163 ug/l (C)	0.004 ug/l
gamma-BHC (lindane)	0.08 ug/l (24 hr) 2 ug/l (max)	0.16 ug/l (max)	0.186 ug/l (T)	0.002 ug/l
tech BHC	———	———	0.123 ug/l (C)	0.004 ug/l
Hexachlorocyclopentadiene	7.0 ug/l(A); 5.2 ug/l(Ch)	7.0 ug/l	206 ug/l (T) 1 ug/l (O)	0.001 ug/l
Isophorone	117,000 ug/l(A)	12,900 ug/l(A)	5,200 ug/l (T)	5 ug/l
Lead	0.75 ug/l (24 hr) 74 ug/l (max)	668 ug/l(A); 25 ug/l(Ch)	50 ug/l (T)	42 ug/l
Mercury (Total Recoverable)	0.00057 ug/l (24 hr) 0.0017 ug/l (max)	0.025 ug/l (24 hr) 3.7 ug/l (max)	0.144 ug/l (T)	0.4 ug/l
Napthalene	2,300 ug/l(A); 620 ug/l(Ch)	2,350 ug/l(A)	———	2.5 ug/l
Nickel	56 ug/l (24 hr) 1100 ug/l (max)	7.1 ug/l (24 hr) 140 ug/l (max)	13.4 ug/l (T)	15 ug/l
Nitrobenzene	27,000 ug/l(A)	6,680 ug/l(A)	19800 ug/l (T) 30 ug/l (O)	5 ug/l
Nitrophenols	230 ug/l(A)	4,850 ug/l(A)	———	———
2,4-dinitro-o-cresol	———	———	13.4 ug/l (T)	———
dinitrophenol	———	———	70 ug/l	7 ug/l
Nitrosamines:	5,850 ug/l(A)	3,300,00 ug/l(A)	———	———
N-nitrosodimethylamine	———	———	0.014 ug/l (C)	0.3 ug/l
N-nitrosodiethylamine	———	———	0.008 ug/l (C)	———
N-nitrosodi-n-butylamine	———	———	0.064 ug/l (C)	———
N-nitrosopyrrolidine	———	———	0.160 ug/l (C)	———
N-nitrosodiphenylamine	———	———	49 ug/l (C)	1 ug/l
Pentachlorophenol	55 ug/l(A); 3.2 ug/l(Ch)	53 ug/l(A); 34 ug/l(Ch)	1010 ug/l (C)	10 ug/l

00099071

Table 7
(Continued)

Parameter	Aquatic Life Criteria* Fresh Water	Aquatic Life Criteria* Salt Water	Human Health Criteria**	Detection Limit+
Phenol	10,200 ug/l(A); 2,560 ug/l(Ch)	5,800 ug/l(A)	3500 ug/l (T)	———
Phthalate esters:	940 ug/l(A); 3 ug/l (Ch)	2,944 ug/l(A)		
dimethyl phthalate	———	———	313000 ug/l (T)	0.11 ug/l
diethyl phthalate	———	———	350000 ug/l (T)	0.13 ug/l
dibutyl phthalate	———	———	34000 ug/l (T)	0.02 ug/l
di-2-ethylhexyl phthalate	———	———	15000 ug/l (T)	0.04 ug/l
PCB's	0.014 ug/l (24 hr)	0.03 ug/l (24 hr)	0.00079 ug/l (C)	0.04 ug/l
PAH's (polynuclear aromatic hydrocarbons)	———	300 ug/l (max)	0.028 ug/l (C)	0.04 ug/l
Selenium	35 ug/l (24 hr)	54 ug/l (24 hr)	10 ug/l (T)	75 ug/l
	260 ug/l (max)	410 ug/l (max)	———	———
Silver	1.2 ug/l (max)	2.3 ug/l (max)	50 ug/l (T)	7 ug/l
TCDD	———	———	2.1x10 ug/l (C)	0.003 ug/l
Tetrachloroethylene	5,280 ug/l(A); 840 ug/l(Ch)	10,200 ug/l(A); 450 ug/l(Ch)	8 ug/l (C)	0.007 ug/l
Thallium	1,400 ug/l(A); 40 ug/l(Ch)	2,130 ug/l(A)	13 ug/l (T)	1 ug/l
Toluene	17,500 ug/l(A)	6,300(A); 5,000 ug/l(Ch)	14,300 ug/l (T)	10 ug/l
Toxaphene	0.013 ug/l (24 hr)	0.07 ug/l (max)	0.0071 ug/l (C)	0.4 ug/l
	1.6 ug/l (max)	———	———	———
Trichloroethylene	45,000 ug/l(A)	2,000 ug/l(A)	27 ug/l (C)	0.005 ug/l
Vinyl Chloride	———	———	20 ug/l (C)	0.01 ug/l
Zinc	47 ug/l (24 hr)	58 ug/l (24 hr)	5000 ug/l (O)	2 ug/l
	180 ug/l (max)	170 ug/l (max)	———	———

* Criteria as published in Fed. Reg. 45: 79318 and Fed. Reg. 46: 40919. Criteria for hardness-related metals assumes 50 mg/l $CaCO_3$ = most strigent criteria. 24 hr = 24 hour average value; max = value not to be exceeded at any time.

** Criteria as published in Fed. Reg. 45: 79318 and Fed. Reg. 46: 40919. Basis for criteria designated as follows: A=acute toxicity; C=carcinogenicity at the 10^{-5} risk level; Ch=chronic toxicity; O=Organoleptic effect; T=toxicity.

\+ Detection limits as published in Fed. Reg. 44: 69464.

For the following halomethanes: Chloromethane, dichloromethane, bromomethane, tribromomethane, bromodichloromethane, dichlorodifluoromethane, trichlorofluoromethane, or combinations of these compounds.

00099072

Table 8

Interim Environmental Criteria for Munition Compounds Recommended by U.S. Army Medical Bioengineering Research and Development Laboratory*

Munition Compound	Aquatic Life Criteria	Human Health Criteria
White Phosphorus (WP)	Interim criterion for the protection of aquatic life should be equal to or less than 0.01 ug/l	Data are insufficient to derive an interim criterion for human protection from exposure to WP
Nitrocellulose	No interim or final criteria for the protection of aquatic organisms recommended	No interim or final env. criteria recommended
Trinitroglycerin	10.0 ug/l for protection of aquatic organisms	22.8 ug/l @ 10^{-5} (ECR) 2.28 ug/l @ 10^{-6} (ECR) 0.23 ug/l @ 10^{-7} (ECR)
RDX	300 ug/l for protection of aquatic organisms	33.68 ug/l
2,4-Dinitrotoluene (DNT)	62 ug/l for protection of aquatic organisms	740 ng/l @ 10^{-5} (ECR) 74.0 ng/l @ 10^{-6} (ECR) 7.4 ng/l @ 10^{-7} (ECR)
2,4,6-Trinitrotoluene (TNT)	At this point data are insufficient for recommending an interim environmental criterion for the protection of aquatic organisms; however, for the purpose of assessing technology, a value of not greater than 60 ug/l would seem appropriate	44.24 ug/l
HMX	Insufficient data to recommend criteria	Insufficient data to recommend criteria

* In letter, SGRD-UBG-E, U.S. Army Medical Bioengineering Research and Development Laboratory (USAMBRDL), 20 August 1980. Criteria are subject to change when USAMBRDL completes its research or when any new scientific data becomes available. This table is an update of the scientific data base needed to anticipate future effluent limitations for munition compounds.

ECR = Estimated cancer risk; levels which may result in incremental increase of cancer over a lifetime.

3.0 HYDROGEOLOGY AND LITHOLOGY

3.1 GENERAL PHYSIOGRAPHY AND TOPOGRAPHY

LHAAP is located on a deep inland extention of the Gulf Coastal Plain which is commonly called the Pineywoods. The ammunition plant itself is characterized by having a pine-hardwood forest which covers its gently rolling hilly terrain. Streams on the installation generally flow north or northeast into the Caddo Lake system.

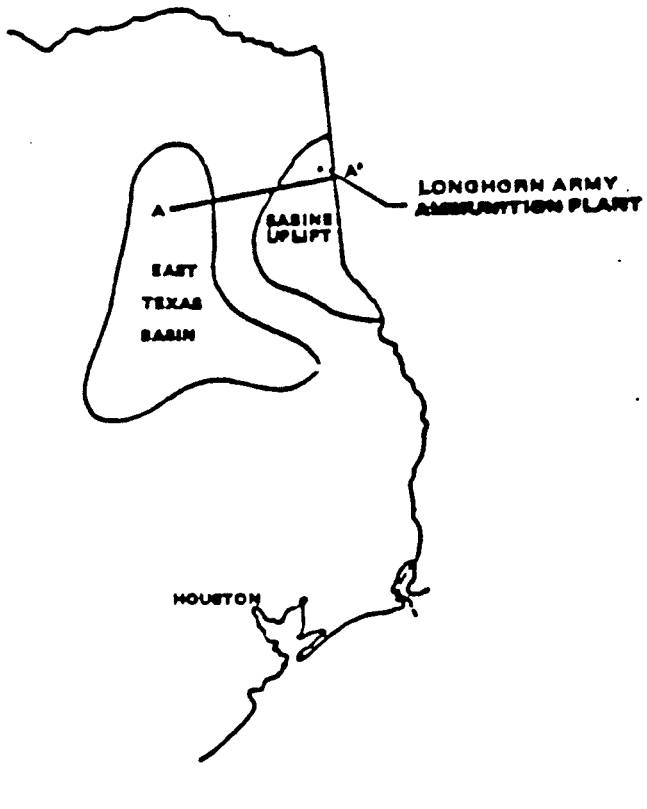
Situated on the gently sloping land southwest of Caddo Lake, the ammunition plant has average slopes of less than 3 percent towards the northeast. However, slopes as great as 12 percent, are common along the northwest and western regions and along the Harrison Bayou floodplain. Elevations at the ammunition plant vary from a high of approximately 335 ft to a low of 170 ft above sea level.

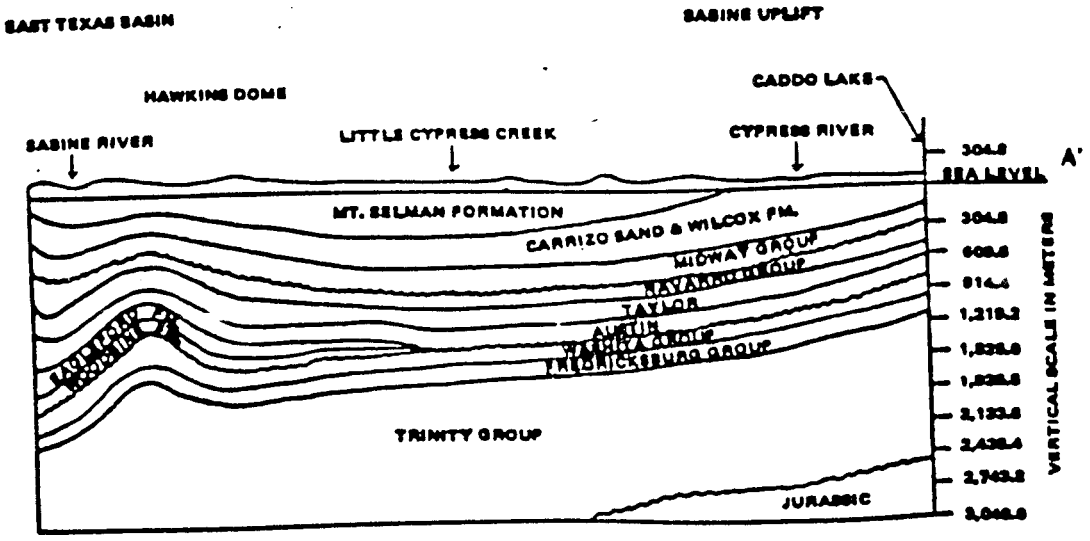
The installation lies on the north flank of the Sabine Uplift, which is bordered on the west by the East Texas Basin (Figure 8). The Carrizo Sand-Wilcox Formation, which is approximately 400 ft thick, outcrops over the entire ammunition plant and is underlain by the Midway Geologic Unit. Additional information about the geology of the project area is included in Figure 9.

3.2 SURFACE WATER

Surface waters of LHAAP flow into the four major creeks and bayous (Figure 10) that drain into Caddo Lake, which is a part of Big Cypress

Figure 8



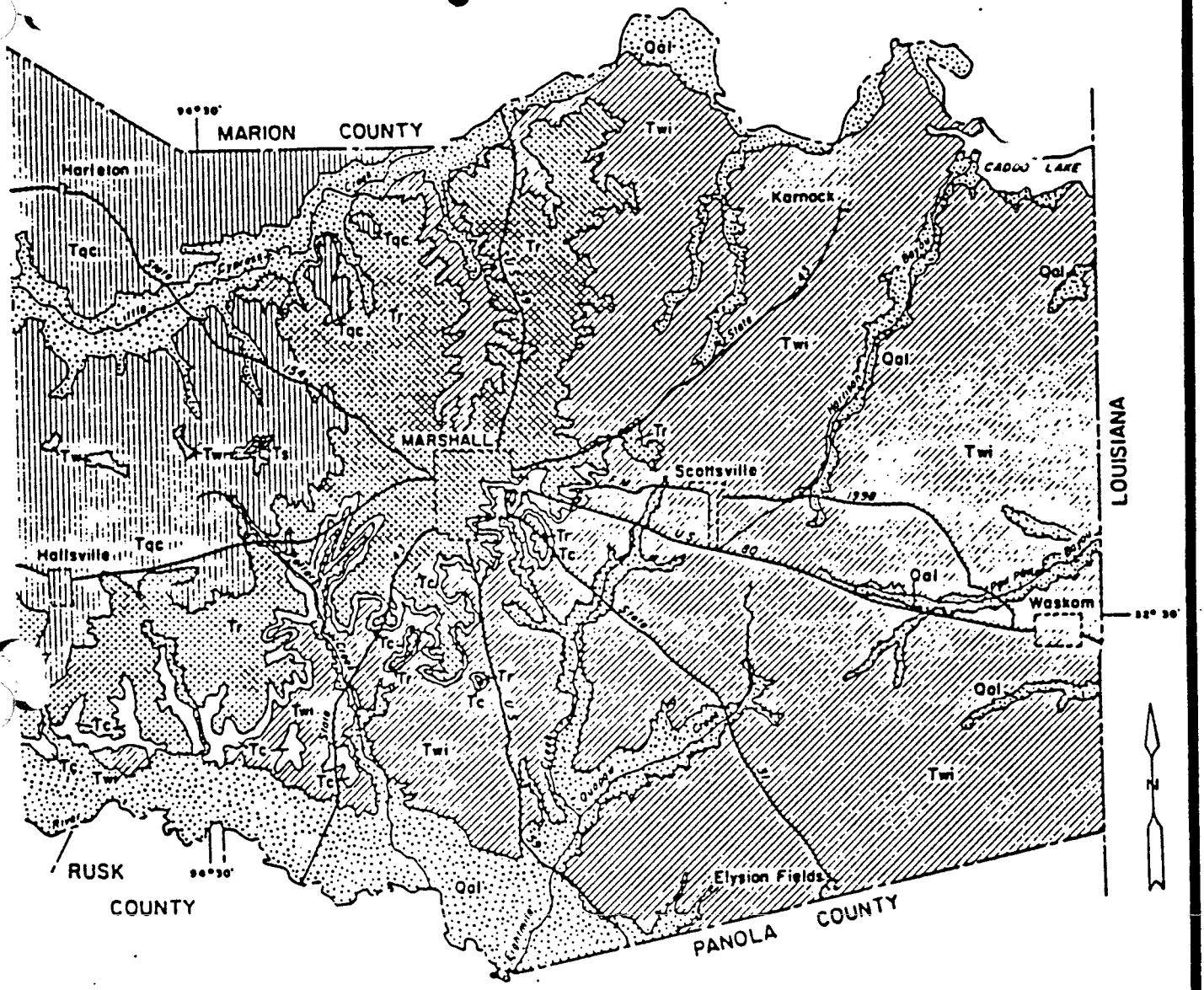


GEOLOGIC STRUCTURE

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

Figure 9



EXPLANATION

QUATERNARY

Pleistocene and Recent

Oal — Alluvium
Clay, silt, and sand. Yields small quantities of fresh water

Ts — Sparta Sand
Sand and sandy clay. Yields small quantities of fresh water

Tw — Weches Greensand
Sand, iron ore in outcrop. Yields small quantities of fresh water

TERTIARY

Eocene

Tqc — Queen City Sand
Sand, silt, and clay, iron ore in outcrop. Yields moderate quantities of fresh to slightly saline water

Tr — Reklaw Formation
Clay and sand, iron ore in outcrop. Capable of yielding at least small quantities of fresh to slightly saline water

Tc — Carrizo Sand
Sand, silt, and clay. Yields small to moderate quantities of fresh to slightly saline water

Twi — Wilcox Group
Sand and clay, iron ore in outcrop. Yields small to moderate quantities of fresh to slightly saline water

Geologic Map

U.S. Geological Survey in cooperation with the Texas Water Development Board and the Harrison County Commissioners Court

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

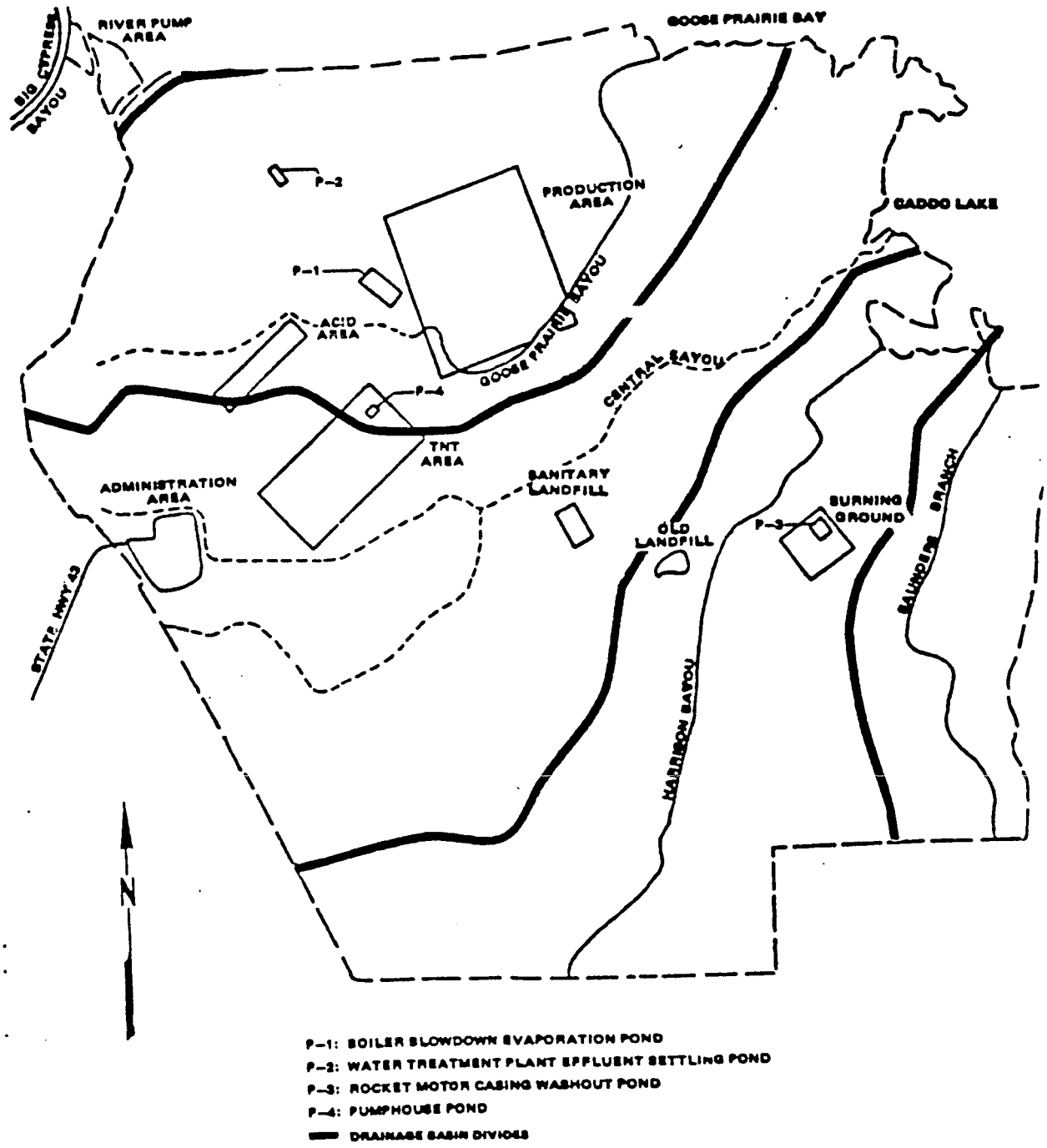


Figure 4. Drainage Basins and Holding Ponds

Bayou. The spillway elevation of Caddo Lake is approximately 168.9 ft. The water elevation of the lake varied from 168.7 to 169.3 ft during the drilling and well installation operation.

A very small section of LHAAP at the northwest corner of the installation drains directly into Big Cypress Bayou which enters Caddo Lake to the east. East of Caddo Lake Big Cypress Bayou resumes, and at Shreveport, Louisiana, joins the Red River, which flows southeast across Louisiana and enters the Mississippi River at Simmesport, Louisiana.

Saunders Branch flows onto LHAAP near the southeast corner and flows northward to Caddo Lake. Approximately 11 percent of the heavily wooded eastern section of the installation is drained by Saunders Branch. The eastern edge of the Ground Signal Test Area drains into this system.

Harrison Bayou enters LHAAP on the southern edge and drains 30 percent of the surface of the ammunition plant. The Harrison Bayou drainage system receives runoff from the South Test Area, the western edge of the Ground Signal Test Area, the Old Landfill, the Flashing Area, Active Burning Grounds and portions of the Static Test Area.

Central Creek (or Caddo Lake Bayou) enters LHAAP on its western edge just south of the town of Karnack. Approximately 29 percent of the surface drainage from the ammunition plant enters Caddo Lake via this drainage course. Areas which drain directly into Central Creek include the Former TNT Production Area, the Central Magazine area, the Active Landfill site, and portions of the Static Test Area.

The headwaters of Goose Prairie Creek are located near the northwest corner of LHAAP and consist of one larger creek and several smaller tributaries. Goose Prairie Creek flows along the northern edge of the installation and drains approximately 30 percent of LHAAP, including the Former TNT Disposal Plant, the Inert Burning Grounds, sections of the Former TNT Production Area, and the active rocket motor production Plant 3.

3.3 SOIL TYPES

Soils at LHAAP are generally fine-grained clays, silt, and fine sand soils in varying combinations and have two origins. The soils are either residual soils formed by the decomposition of the Carrizo Sand-Wilcox Formation or alluvial soils deposited along bayou floodplains. Figure 11 shows the typical soil stratifications present at LHAAP. Well 132 is located in the South Test Area near Harrison Bayou and the soils present near Well 132 are representative of the soil types present in the bayou floodplains or near the major bayous or streams. Well 117 is located in the Former TNT Production Area, and Wells 102 and 129 are located in the Active Burning Grounds. The soils present in Wells 102, 117, and 129 are representative of the range of residual soil types present at LHAAP.

The residual soils consist of very silty sand, sandy clay, and clay soils of low to very low permeability (1×10^{-5} ft/min or less) overlying the water-bearing layers of more-permeable (greater than 1×10^{-5} ft/min) silty sands and thinly-bedded silty sand and clay. The water-bearing layers are generally underlain by clay layers, sand-clay mixtures, and

silty sand layers. It appears that the overlying clay layers and water-bearing layers are discontinuous in the residual soils.
The alluvial soils are found predominately along the bayous, creeks, and floodplains. Based on the soil boring information collected during the well installations, the soils present near Harrison Bayou consist of layers of slightly silty to silty sand mixtures.

The laboratory analysis of soil samples included 24 grain size tests, 5 mechanical analyses (hydrometer tests) (ASTM Method D422), and 8 Atterberg limits tests (ASTM Methods D423 and D424). Additionally, 21 samples were washed through a No. 200 sieve to determine the percentage of fines (ASTM Method D1140) and 12 samples were washed through a No. 400 sieve to determine the amount of coarse silt.

The grain size curves are shown in Appendix D, and the percentage of fines passing through No. 200 and No. 400 sieves are shown in Table 9. These tests indicated that the mixtures of silty sand soils tested can be divided into two general soil types: uniformly graded silty sand containing less than 30 percent fines, and uniformly graded silty sand and sandy silt soils containing more than 30 percent fines. Most of the soils contained substantial amounts of fine sand and coarse silt and generally contained more fines than the field visual estimates indicated. Some fine sand and silt mixtures with a field visual unified soil classification of SM were re-classified as ML after sieve testing because they were found to contain large amounts of coarse silt. The boring logs in Appendix D show the unified soil classifications which were revised based on the results of the laboratory tests.

Table 9

Grain Size Analysis

Well No.	Sample No.	Depth (ft)	Percent Finer No. 200 Sieve	Percent Finer No. 400 Sieve
101	4A	15.5 - 16.0	74.0	
102	4	15.0 - 15.5	71.2	
	4A	16.0 - 20.0	50.6	
	5	20.0 - 20.5	32.7	22.5
	7A	30.5 - 31.0	63.6	
103	3	10.5 - 11.0	60.3	
	3A	11.0 - 11.5	22.0	16.3
	4	15.0 - 15.5	55.7	
	4B	16.5 - 17.0	45.9	33.5
	5	20.0 - 20.5	86.0	
	5B	21.0 - 21.5	93.9	
107	4A	16.0 - 16.5	29.0	16.4
	4B	17.0 - 17.5	34.4	
	5	20.5 - 21.0	24.5	13.0
	5A	21.0 - 21.5	28.1	
108	2	6.0 - 6.5	68.5	
	3A	10.5 - 11.0	48.7	
	4B	17.5 - 18.0	37.6	
	5	21.0 - 21.5	3.9	3.4
109	5	20.5 - 21.0	23.0	21.3
	5B	22.5 - 23.0	53.2	
	6A	26.5 - 27.0	26.3	9.1
120	3	10.0 - 10.5	38.4	
122	3	15.5 - 16.0	70.4	
	3A	16.0 - 16.5	65.6	
123	2	5.5 - 6.0	32.2	
	3	10.5 - 11.0	25.4	18.5
	3C	12.5 - 13.0	58.6	
124	2	5.8 - 6.4	66.4	
	2A	6.4 - 7.0	60.7	
	3	10.5 - 11.25	14.2	
	5A	21.5 - 22.0	33.4	
	6A	26.0 - 26.5	41.3	
125	3	10.5 - 11.0	46.7	31.0
	4	15.5 - 16.0	89.9	
	4B	17.5 - 18.0	98.1	
	5	20.0 - 20.5	80.3	
	5A	22.0 - 22.5	38.0	21.0
	6A	26.0 - 26.5	93.8	
129	5	20.3 - 21.0	12.4	11.7
	6	25.2 - 26.0	31.2	
	7	30.5 - 31.0	74.4	
	7A	31.5 - 32.0	61.9	
	8A	34.5 - 35.0	65.7	
130	3	11.0 - 11.5	38.8	
132	4	10.5 - 11.0	22.4	

Results of the laboratory Atterberg limits tests are presented in Table 10. The Atterberg limits indicated that the Unified Soil Classification category for the clay soils at LHAAP is predominantly CL. These soils had low to medium plasticity and contained varying amounts of sand and silt.

3.4 SUBSURFACE WATER

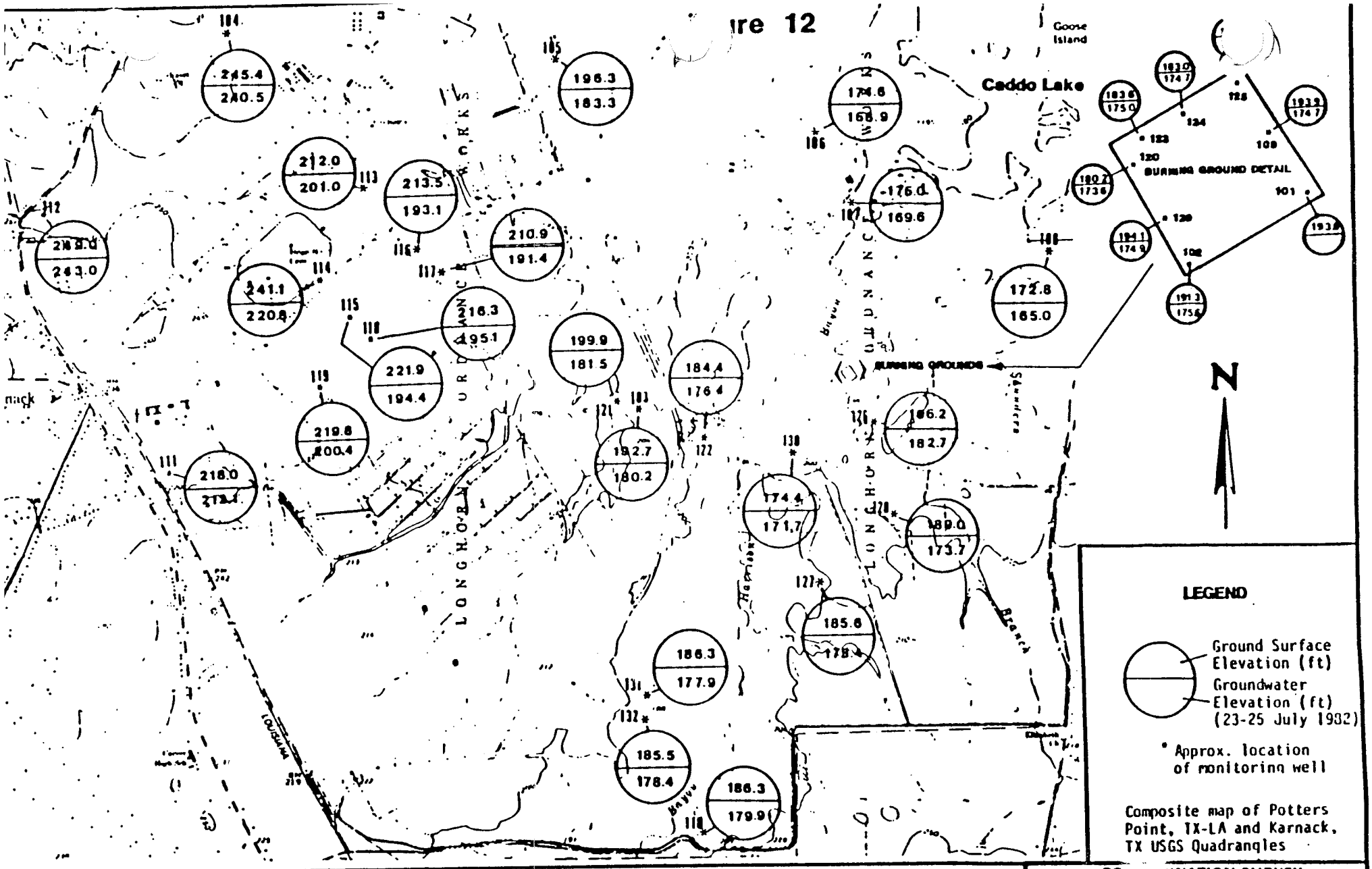
The aquifers, or water-bearing layers, of the LHAAP area were identified at 32 monitoring wells (Figure 12). They varied from slightly silty fine sand to silty sand and/or silty sand thinly bedded with clay layers. In areas where residual soils are present, the water-bearing layers are thinner and are overlain by discontinuous layers of soils with low to very low permeablility (silt-sand mixtures, sandy clay, or clay). In the alluvial deposits more-permeable soils (silty sand soils, and some clay soils) overlie thicker aquifers which are underlain by soils of low permeability.

The percent of fines in the sand or silty sand aquifers ranged from 3.9 percent to 32.0 percent in the wells that had aquifer tests (Table 11). The laboratory sieve tests indicated that the aquifers contain uniformly-graded silty fine sand soils. The aquifers in a few wells (for example 104 and 125) were relatively thin (2 ft or less) and were not well-defined. The maximun aquifer thickness was approximately 15 ft. There were no distinct or continuous aquifers in the different sections of LHAAP; however, the study areas had similar aquifer characteristics of thickness, percent fines, and bedding or non-bedding. This can be seen on the soil profile diagram (Figure 11).

Table 10

Results of Atterburg Limits Test

Well No.	Sample No.	Depth (ft)	Liquid Limit	Plastic Limit	Unified Soil Classification
101	3B	11.0 - 11.5	30	17	CL
101	4B	16.0 - 16.5	39	16	CL
102	5C	22.5 - 25.0	33	33	CL
107	4	15.0 - 15.5	43	16	CL
108	3B	12.5 - 13.0	31	19	CL
109	6	25.8 - 26.5	41	18	CL
122	4A	21.0 - 21.5	44	14	CL
125	6	25.5 - 26.0	59	43	CH-CL


ure 12
Goose Island
Caddo Lake
BURNING GROUND DETAIL
BURNING GROUNDS
LONGHORN ARMY AMMUNITION PLANT
N
LEGEND
Ground Surface Elevation (ft)
Groundwater Elevation (ft) (23-25 July 1982)
* Approx. location of monitoring well
Composite map of Potters Point, TX-LA and Karnack, TX USGS Quadranqles
General Topography
Map of LHAAP Area
CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS
U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

000990084

Table 11

Aquifer Test and Sieve Test Results

Aquifer Test		Sieve Test	
Well No.	Permeability (ft/min)	Percent Finer No. 200 Sieve	Unified Soil Classification*
102	9.9×10^{-5}	32.0	SM & CL
103	2.4×10^{-3}	22.0	SM
107	1.1×10^{-3}	24.5	SM
108	2.7×10^{-3}	3.9	SM-SP
109	8.0×10^{-4}	23.0	SM
122	2.4×10^{-3}	NO SAMPLE	SM
123	1.2×10^{-3}	18.5	SM
124	6.9×10^{-3}	14.2	SM
125	9.1×10^{-3}	38.0	SM
129	9.7×10^{-3}	12.4	SM

* ASTM Designation D2487.
SM = silty sand, sand-silt mixture (12% < % Fines < 50%).
SM-SP = slightly silty sand (5% < % Fines < 12%).
CL = inorganic clays, sandy clays, silty clays of low to medium plasticity.

The layering of soils described above tends to favor lateral movement of groundwater through the silty sand layers having higher permeability. In the areas where the ground surface slopes appreciably, the orientation or slope of the water-bearing layer determines whether or not the groundwater exits as surface water into a stream or remains as groundwater. Groundwater may exit as surface water into the streams in sloping areas because the thinly-bedded residual soils are generally horizontally stratified and are not stratified parallel to the sloping ground surfaces.

Examination of aerial photographs revealed the presence of several small streams which are not shown on the USGS maps of the area. It is not known if, or where, these streams and/or their tributaries intercept the groundwater. The effect of these streams intercepting the groundwater at intermediate points could be a substantially increased seepage rate with a resulting reduced time required for in-ground contaminants to enter the surface water system.

3.5 AQUIFER TESTING METHODS

Aquifer tests were conducted at ten wells located in the Burning Grounds, Active Landfill, and the Old Landfill. It should be noted that although water was present in Well 101 at the time of its installation and shortly thereafter when samples were collected for laboratory analysis, no water was present there later at the time when aquifer tests were performed (indicating a temporarily-diminished water table). The permeability of the aquifer at each well was determined by using the slug test method of analysis (Bouwer and Rice, 1976). This was accomplished by monitoring

the rate of rise of water in a well after a slug of water was removed. The equations used to calculate the permeabilities are shown in Figure 13 and the well-geometry variables used in the equations are shown in Figure 14, with actual values recorded at Well 122 presented as an example.

To perform this test the water level in a well was first lowered by quickly bailing water out using the bailer in each well. A water level measuring device (manufactured by Slope Indicator) was used to measure the water levels as the water rose back up to or near the initial level. The difference between the initial static water level at time zero and the measured water levels was plotted against the elapsed time for each measurement on semilog paper (Figure 15). The test was run twice at each well, and often 3 or 4 times, to generate better data by increasing the initial change in head.

The early time data for some of the well tests (Wells 108, 109, 122, 123) departed from the straight line trend on the semilog plot because the water level was initially lowered beneath the aquifer by bailing and the water rose at a constant rate up to the bottom of the aquifer. During most tests the late time data also departed from the straight line trend, probably because of the delayed yield phenomenon, which is commonly encountered when wells penetrate unconfined aquifers. The delayed yield is caused by a small amount of slow drainage through the stratified sediments above the water table. This causes the time (t_j) to increase disproportionately to the change in water level (head) when the value of the head difference (y) is less than 1 ft.

Figure 13

$$K = \frac{r_e^2 \ln(R_e/r_w)}{2L_e} \frac{1}{t} \ln \frac{y_o}{y_t}$$

$$\ln(R_e/r_w) = \left[\frac{1.1}{\ln(H/r_w)} + \frac{A + B \ln[(D - H)/r_w]}{L_e/r_w} \right]^{-1} \quad \text{if } H < D$$

$$\ln(R_e/r_w) = \left[\frac{1.1}{\ln(H/r_w)} + \frac{C}{L_e/r_w} \right]^{-1} \quad \text{if } H = D$$

Where:

K = permeability (ft/min)

R_e = effective radial distance over which the head difference, y, is dissipated (ft)

r_e = radius of casing or equivalent radius of casing and sand pack (ft)

r_w = radial distance between well center and undisturbed aquifer (ft)

L_e = height of perforated, screened, uncased, or otherwise open section of well through which groundwater enters (ft)

A, B, C = dimentionless coefficients

D = total saturated thickness to impermeable layer (ft)

H = saturated thickness penetrated by well casing (ft)

y_o = y at t_o (ft)

y_t = y at time t (ft)

t = time since y_o (minutes)

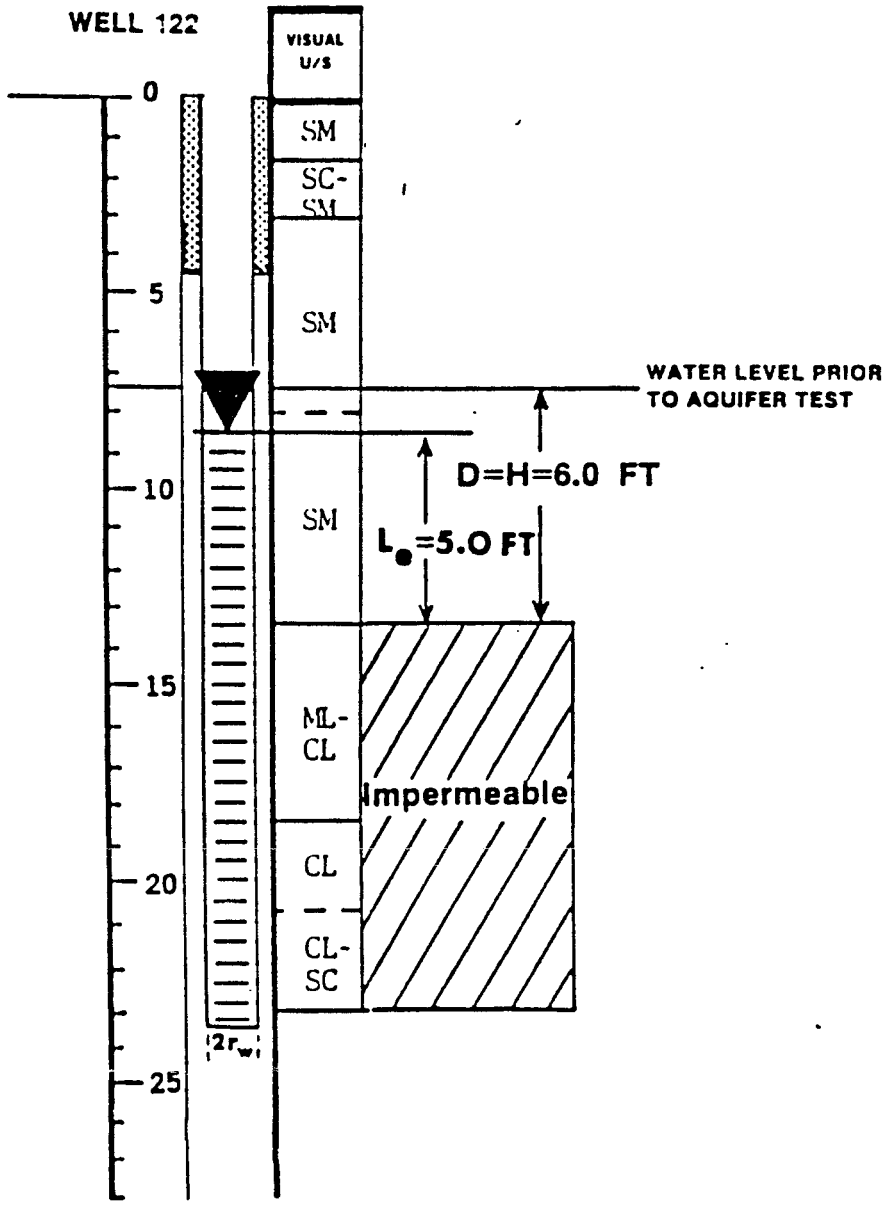
ln = logarithm, base e

Slug Test Equations

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

FIGURE 14



y_o = 3.0 FT
y_t = 0.5 FT
t = 2.3 MIN
r_e = 0.1 FT
r_w = 0.083 FT

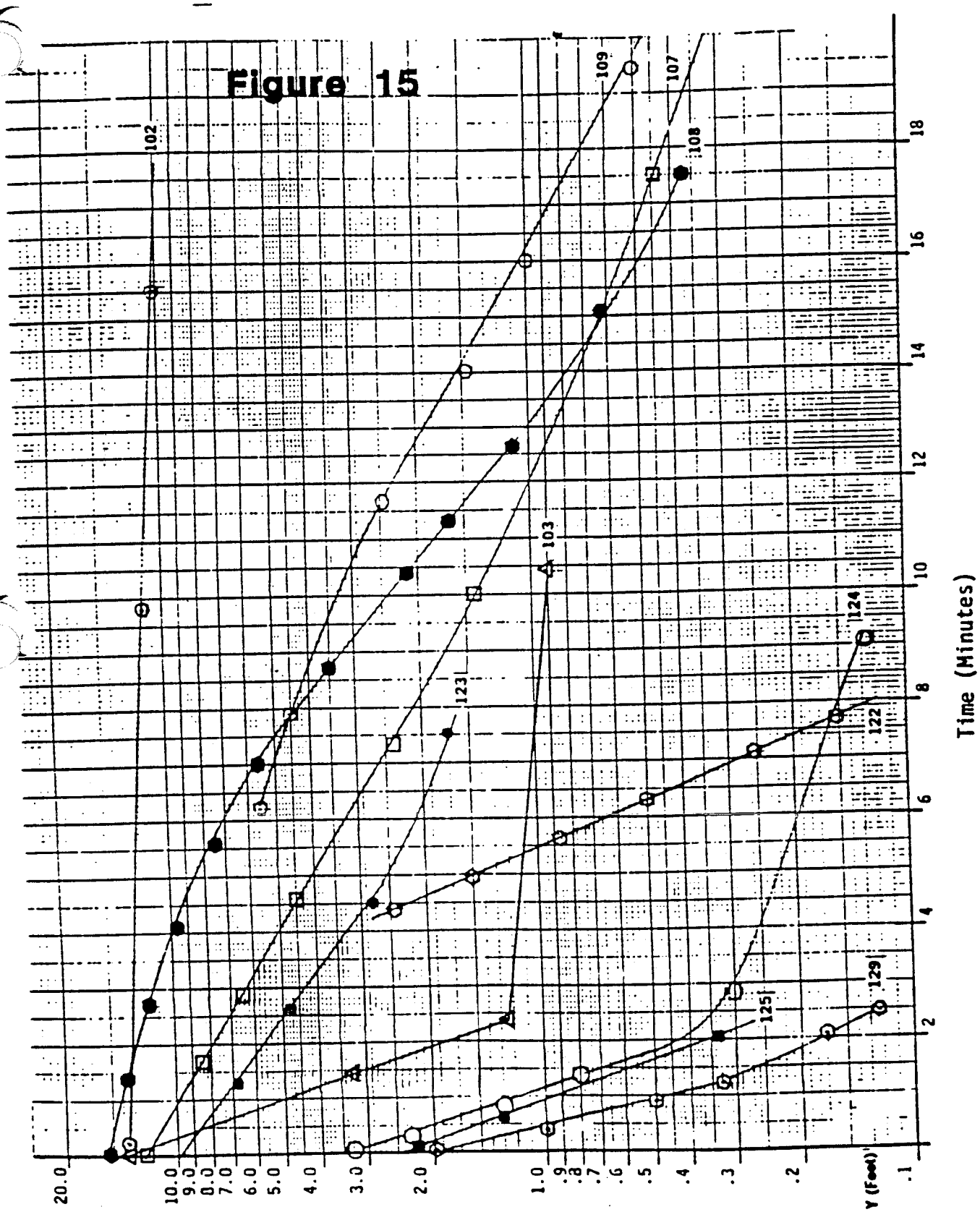
XAMPLE OF TYPICAL MONITORING WELL GEOMETRY SHOWING VALUES FOR SLUG TEST CALCULATIONS

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

SOURCE: ENVIRONMENTAL PROTECTION SYSTEMS INC., 1983

Figure 15



Slug Test Data

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY

3.6 GROUNDWATER FLOW RATE AND DIRECTION

The flow rate of groundwater is dependent upon the permeability and porosity of the soil in the aquifer and the hydraulic gradient. The permeability of each aquifer was determined by the test described in Section 3.5 or by correlating the laboratory grain size test results with aquifer test results. The results of the aquifer tests (calculated permeabilities) and the grain size test information for soil samples of the tested aquifers are shown in Table 11. The information in Table 11 was used to estimate the permeability of the aquifers in all the study areas where aquifer tests were not run. The permeabilities of the tested aquifers were similar and ranged from 1.1×10^{-3} ft/min in Well 107 to 9.7×10^{-3} ft/min in Well 129. However, Wells 102 and 109 had lower permeabilities of 9.9×10^{-5} ft/min and 5.6×10^{-4} ft/min, respectively. The appreciably lower permeabilities calculated for the aquifer at Well 102 is due to the aquifer consisting of silty sand thinly bedded with clay. The reason for the lower permeability of the aquifer in well 109 is not as apparent. It appears that the aquifer consists of silty sand which contains more fines that the aquifers in the other wells.

The hydraulic gradient of the groundwater is defined as the change in water elevation over a given distance. The gradients were calculated using well water elevations, estimates of water elevations in streams and bayous, and distances to major waterways. Water elevations and distances to streams were obtained from USGS maps of the LHAAP area (Karnack and Potters Point Quadrangles) or by field observations and estimates. The estimated groundwater gradients were selected by comparing them to the measured groundwater gradients that ranged from 0.002 to 0.014.

Soil porosity was based on the estimated in-place soil density and specific gravity. An average porosity of 35 percent was used in all seepage velocity calculations.

Groundwater seepage velocity was calculated using the following formula:

$$V = \frac{i\ K}{n}$$

Where:

V = Seepage Velocity

i = Hydraulic Gradient = $\frac{\text{Water Elevation Difference}}{\text{Distance}}$

K = Aquifer Permeability

n = Soil Porosity

The groundwater flow rate and direction have been determined for the 10 study areas where monitoring wells were installed. The groundwater flows from the wells downgradient towards the creeks and bayous and/or their tributaries. Once the groundwater reaches the drainage system it either becomes surface water and rapidly flows off LHAAP or flows as groundwater through the stream bed at a reduced rate. Groundwater flow directions determined for this study were based on field data and field observations modified by engineering judgement. The groundwater flow rates are summarized in Table 12 along with the minimum calculated time for the groundwater to exit as surface water.

The calculated minimum and maximum seepage rates for the LHAAP area are 0.2 and 190 ft/yr.

Table 12

Groundwater Flow Rates and Directions

Study Area	Well Number	Elevation of Water Level* (ft)	Flow Rate Vmin-Vmax (ft/yr)	Direction	Length of Drainage Path++ (ft)	Minimum-Maximum Time to Exit as Surface Water (yr)
Inert Burning Grounds	104	240.53	0.5-15.0	S to tributary of Goose Prairie Ck.	1000	67-2000
Former TNT Waste Disposal Plant	113	201.03	2.2-15.0	NE or E to Goose Prairie Ck.	1000	67-454
Former TNT Production Area	114,115,116, 117,118,119	190 to 195**	0.2-4.5	NE to Goose Prairie Ck. or E to Central Ck.	2000	444-10000
South Test Area	131,132	178 ±	9.0-30.0	E to tributary of Harrison Bayou	90	3-10
Ground Signal Test Area	127,128	174 ±	7.5-60.0 (127) 0.5-5.0 (128)	W to Harrison Bayou (127) E to Saunders Br. (128)	1500 1000	25-200 200-2000
Active Burning Grounds	101,102,109, 120,123,124, 125,126,129	174.4 to 178.4***	9.0-190	W & NW From Wells 120 & 123 to Harrison Bayou	300	1.6-33
			38-135	W from Well 125 to Harrison Bayou	1300	10-35
			3.0-7.5	NW from Well 102 to 129	500	67-133
			76-106	NW from Well 129 to 120	450	4-6

00099093

Table 2
(Continued)

Study Area	Well Number	Elevation of Water Level* (ft)	Flow Rate Vmin-Vmax (ft/yr)	Direction	Length of Drainage Path++ (ft)	Minimum-Maximum Time to Exit as Surface Water (yr)
Flashing Area	130	171.7	1.5-15.0	NW to freshwater meadow in Harrison Bayou floodplain	200	13-133
Old Landfill	122	176.4	10.8-36.0	E to Harrison Bayou	45+ 300	1-4 3-28
Active Landfill	103,121	180.2, 181.5	10.8-36.0	N to Central Ck. or E to Harrison Bayou	3000	83-278
Static Test Area	107	169.6	10.5-21.0	E to Harrison Bayou	85	4-8

* Prior to well development between 23 and 25 July 1982.

** Well 114 water level elevation = 220.8 ft.

*** Well 126 water level elevation = 182.7 ft.

\+ After rain, groundwater exits as surface water at edge of floodplain.

++ Length of drainage path is the distance from the well to the perennial surface watercourse or to adjacent well.

00099094

4.0 DETAILED REPORTS FOR STUDY AREAS

4.1 INERT BURNING GROUNDS

4.1.1 LOCATION

The Inert Burning Grounds are located just northwest of the intersection of 32nd Street and Avenue P (Figure 2).

4.1.2 HISTORY AND PRESENT ACTIVITIES

This location in the northwest section of LHAAP was used in the late 1940s and early 1950s as a site for burning of inert materials identified as trash, ashes, scrap lumber, and waste from burned TNT. There are also reports of bulk TNT being burned in this area. The Universal Match Corporation used this area to burn photo flash powder and other discarded materials from their industrial operations. In the early 1950s the burning operation was transferred to the Flashing Area and ultimately to the Active Burning Grounds. Aerial photographs indicate that this area may have been used as late as the 1960s, but a description of the activities which may have taken place at that time is unavailable. Presently the area has a stand of pine forest growing on it and no ammunition plant activities are conducted at this site.

4.1.3 SAMPLING METHODS

Investigations as to the potential for contamination in this area were carried out through collection and analysis of groundwater from Well 104 and through the collection and analysis of three soil samples in the general location of the Inert Burning Grounds (Figures 3 and 16). The

closest surface water or sediment samples to this site were collected approximately 4,000 ft to the southeast in Goose Prairie Creek.

4.1.4 LITHOLOGY AND GEOHYDROLOGY

In Well 104 no large water-bearing layers were observed when drilling the boring. It appears that a layer of silty sand overlies a sandy clay layer and a seam of limonitic ironstone is present at a depth of approximately 10 ft below grade because water flowed into the boring during the drilling operation at this level. It is unlikely that the layer of silty sand and the seam of limonitic ironstone is continuous throughout the area because the thickness of the silty sand layer was less than 1 ft and the soil layers were found to be discontinuous beneath LHAAP, therefore, we would not expect a thin soil layer and thin seam of limonitic ironstone to be continuous over a large area.

According to the USGS maps, the groundwater of the Inert Burning Grounds appears to flow south to a tributary of Goose Prairie Creek. The minimum and maximum seepage velocities are as follows for the estimated high and low permeabilities and gradients: V_{min} = 0.5 ft/yr (i = 0.003, K = 1 x 10^{-4} ft/min); V_{max} = 15.0 ft/yr (i = 0.01, K = 1 x 10^{-3} ft/min).

4.1.5 SURFACE WATER DRAINAGE

Surface water originating in the Inert Burning Grounds flows first to the southeast until it enters the mainstream of Goose Prairie Creek which then flows east and eventually into Goose Prairie Bay, an extention of Caddo Lake.

4.1.6 ANALYTICAL RESULTS

Analytical results for groundwater samples (Appendix A) collected at Well 104 show that values for anions and metals were generally at or below concentrations found in the background wells at the installation boundary, and all values except for that of manganese were below allowable levels specified for drinking water by the Texas Department of Health (Table 6). Low concentrations of two explosive-related compounds were detected in this well. Nitrobenzene was present at a concentration of 1.8 ug/l and 1,3,5-TNB had a concentration of 9.7 ug/l. The GC/MS organics screen for priority pollutants and other compounds did not detect any compound with a concentration exceeding established standards or criteria in this well. Additionally, no pesticides were found in water from this well.

Analysis of soil samples from Stations 101 through 103 (Figure 16) indicated that no concentrations of anions, explosives, or other organics determined to be present exceeded background levels (Appendix C). However, slightly elevated levels of barium, lead, manganese, and zinc were detected.

4.1.7 DISCUSSION

The major finding of concern associated with the investigation conducted at the Inert Burning Grounds was the existence of low level contamination of explosives in the groundwater. Because of the generally slow seepage rate for the soils of this site, any groundwater contamination in this area could be expected to be relatively immobile with respect to ground-

ter movement. Based on limited soil sampling and analysis, no apparent widespread soil contamination was detected.

4.1.8 RECOMMENDATIONS

It is recommended that further study in this area may be appropriate. However, this would only be necessary as described below if the operational status or ownership of this area were to change. If such changes should occur, it is suggested that sediment and surface water samples should be collected under low flow conditions at three locations along the southwest side of the extention of 32nd Street (which is a dirt road). These samples should be taken at the intersection of Avenue P and 32nd Street and 300 ft and 1,000 ft northwest of this location in the roadside ditch (Figure 16). Additionally it is suggested that three more soil samples should be collected at the locations indicated on Figure 16 in zones determined to be actively used during the burning operation years based on historical aerial photographs (U.S. EPA, 1981a). These soil sampling sites should be investigated at the surface and 5 ft levels. This sampling and subsequent analysis for explosives would establish the existence of any surface water discharges of explosives from the Inert Burning Grounds area and the possible location of said material in the soil. The additional work is necessary because the limited groundwater data from Well 104 indicates that this area was used in some capacity to dispose of explosives and/or explosive by-product wastes.

4.2 FORMER TNT WASTE DISPOSAL PLANT

4.2.1 LOCATION

The Former TNT Waste Disposal Plant is located northeast of Avenue C midway between 1st Street and 6th Street (Figure 2).

4.2.2 HISTORY AND PRESENT ACTIVITIES

The Disposal Plant was constructed along with the TNT Production Plant (Plant 1) in the early 1940s to receive and treat the waste generated during TNT production. The Disposal Plant consisted of a number of settling, holding, equalization, and evaporation tanks and an incineration facility. The TNT Production Plant and TNT Waste Disposal Plant were not operated after World War II and were razed in 1959. Material and equipment were burned or flashed at the Flashing Area. Presently no activities are conducted at this site.

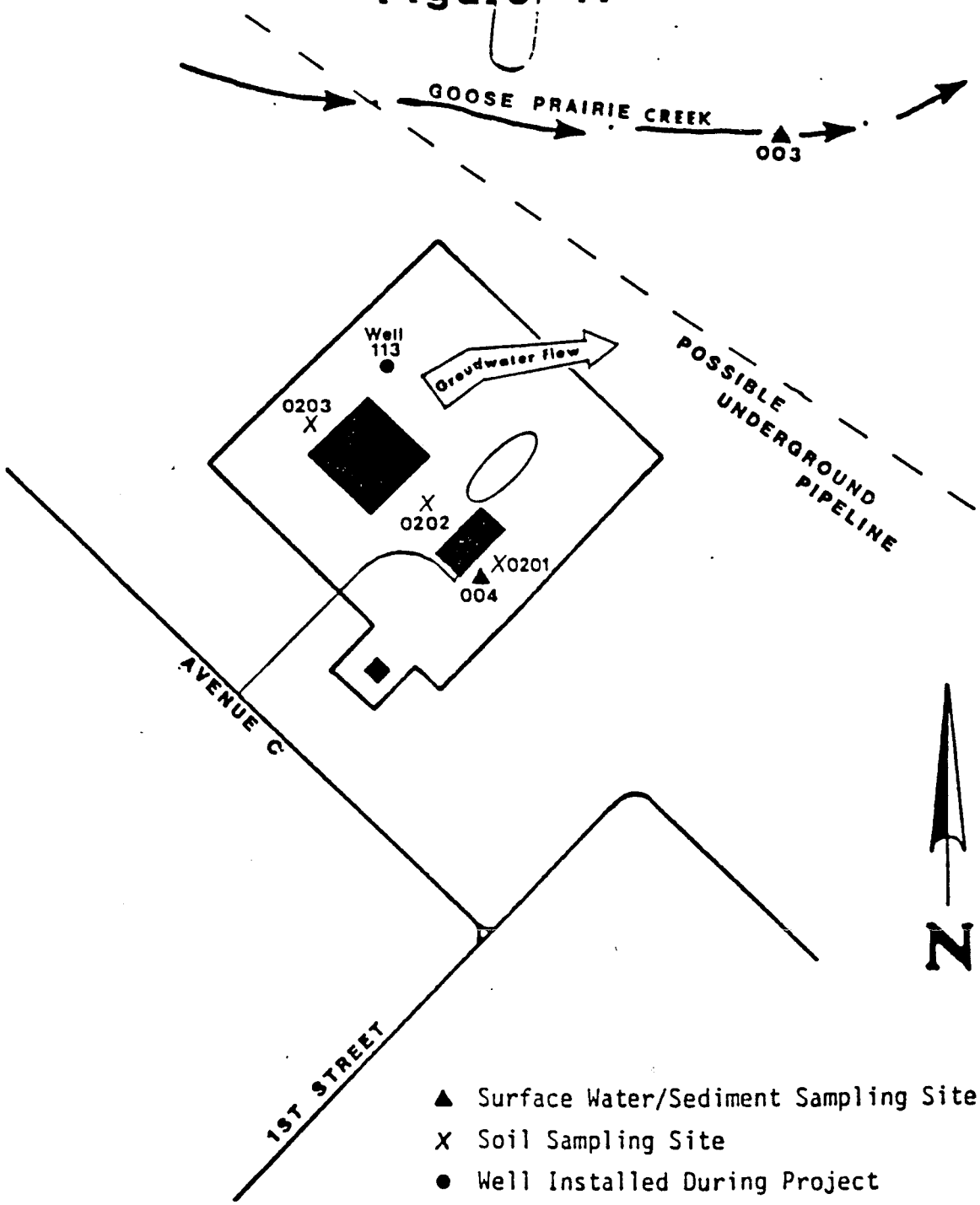
4.2.3 SAMPLING METHODS

Groundwater at the Former TNT Waste Disposal Plant was investigated through the installation and testing of Well 113 (Figures 3 and 17). Soil samples were collected around the foundation at Stations 0201, 0202, and 0203 (Figure 17). Surface water and sediment were collected at Station 003, which is located at Goose Prairie Creek just downstream from the entry point of general surface runoff from the Former TNT Disposal Plant (Figures 4 and 17).

4.2.4 LITHOLOGY AND GEOHYDROLOGY

In Well 113 clayey sands and sandy clay soils overlay the aquifer of thinly bedded silty sand and clay and a layer of slightly clayey silty sand.

Figure 17



▲ Surface Water/Sediment Sampling Site
X Soil Sampling Site
● Well Installed During Project
▲ Existing AEHA Well (*AEHA No.)
▣ Proposed Surface Water/Sediment Sampling Site
◉ Proposed Well Location
⊠ Proposed Soil Sampling Location

Approx Scale 1:5100

Former TNT Waste Disposal Plant

SOURCE: ENVIRONMENTAL PROTECTION SYSTEMS INC. - 1983

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

Based on the USGS maps, the groundwater of the Former TNT Disposal Plant appears to flow to the northeast or east towards Goose Prairie Creek. The minimum and maximum seepage velocities are as follows for the estimated high and low permeabilities and gradients: V_{min} = 2.2 ft/yr (i = 0.003, K = 5.0 x 10^{-4} ft/min); V_{max} = 15.0 ft/yr (i = 0.01, K = 1 x 10^{-4} ft/min).

4.2.5 SURFACE WATER DRAINAGE

Surface water drainage from this site is directly into Goose Prairie Creek by means of natural and potentially manmade swales and ditches located to the northeast of the Former TNT Waste Disposal Plant site.

4.2.6 ANALYTICAL RESULTS

Analytical results for groundwater samples from Well 113 indicated that no explosives were detectable in the aquifer (Appendix A). Also, no explosives were detected in any of the three soil samples collected around the foundation of the Former TNT Waste Disposal Plant (Appendix C). The surface water and sediment samples collected at Station 003 in Goose Prairie Creek were found to contain none of the explosive compounds for which analyses were conducted (Appendix B).

4.2.7 DISCUSSION

Based on the limited analytical data for this site, it appears that no contamination exists here in groundwater or soil. Surface water and sediment data for Goose Prairie Creek also indicated no contamination of surface runoff from this area.

4.2.8 RECOMMENDATIONS

No detectable levels of TNT or other explosives were found within the soils, groundwater, surface water, or sediments associated with this area. Based on an evaluation of this data, it is concluded that no potential for contamination migration from this site is expected and it is recommended that no additional work be conducted at this location.

4.3 FORMER TNT PRODUCTION AREA

4.3.1 LOCATION

The Former TNT Production Area is located northwest of the main magazine area. It is bounded on the southeast by 18th Street, on the northwest by 1st Street, on the northeast by Avenue D, and on the southwest by Avenue E (Figure 2).

4.3.2 HISTORY AND PRESENT ACTIVITIES

From April 1943 until August 1945, a six-line plant with a supporting acid plant produced over 180 million kg (397 million lb) of TNT at this site. All six lines of the plant, A-F, were probably in production throughout this period; however, line F was used as a reserve line and production occurred here only when other lines were inactive during repairs. Redwater from the wash houses associated with each of these lines flowed via underground pipelines to a pumphouse and then on to the TNT Waste Disposal Plant. The TNT production plant was not operated after World War II and was razed in 1959. Presently no industrial activities are conducted in this area.

4.3.3 SAMPLING METHODS

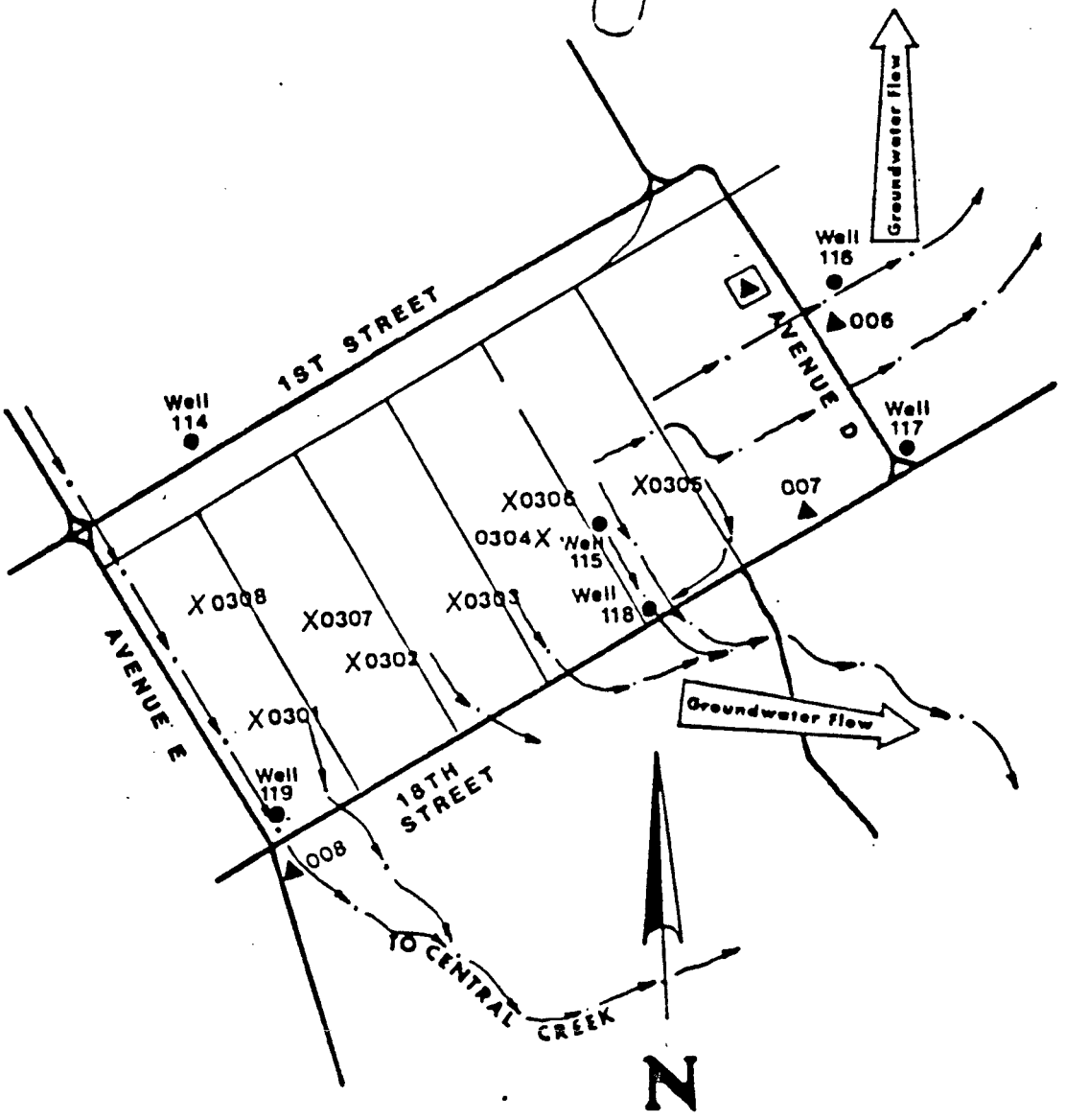
The groundwater associated with the Former TNT Production Area was investigated through the analysis of samples collected at six monitoring wells specifically installed for this project (Wells 114, 115, 116, 117, 118, and 119) (Figures 3 and 18). Surface water samples and sediments were collected from two stream locations (Stations 006 and 008) which are potential points of discharge from the Former TNT Production Area. Sediment and water samples were also collected from a ditch adjacent to the Former TNT Production Area (Station 007) and from a pond which was created during the pumphouse demolition process (Station 005) (Figures 4 and 18). Soil samples were collected at eight stations within the Former TNT Production Area (Figure 18).

4.3.4 LITHOLOGY AND GEOHYDROLOGY

In Wells 114 through 119 sandy clay and clay soils overlie the aquifer of silty sand or silty sand bedded with clay. These soils inhibit surface water infiltration into the aquifers, which are approximately 20 ft below grade.

In this area, the groundwater appears to flow north towards Goose Prairie Creek and/or eastward toward Central Creek. The seepage rates are relatively low in this area due to the low hydraulic gradients calculated for points between well locations. The minimum and maximum seepage velocities of groundwater in the Former TNT Production Area are as follows for estimated high and low permeabilities of the aquifers in Wells 115, 116, and 118: V_{min} = 0.2 ft/yr (i = 0.002, $K = 5 \times 10^{-5}$ ft/min); V_{max} = 4.5 ft/yr (i = 0.003, $K = 1 \times 10^{-3}$ ft/min).

Figure 18



▲ Surface Water/Sediment Sampling Site
X Soil Sampling Site
● Well Installed During Project
▲ Existing AEHA Well (*AEHA No.)
▣ Proposed Surface Water/Sediment Sampling Site
▣ Proposed Well Location
▣ Proposed Soil Sampling Location

APPROX SCALE 1:10900

Former TNT Production Area

SOURCE: ENVIRONMENTAL PROTECTION SYSTEMS, INC. - 1983

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

4.3.5 SURFACE WATER DRAINAGE

Approximately 75 percent of the surface waters which discharge from the Former TNT Production Area would flow naturally into Central Creek, and approximately 25 percent would flow north into Goose Prairie Creek. However, this area has a maze of underground piping and during construction major topographic modifications were made. These modifications included the excavation of portions of the production lines and the mounding of excavated soil between production lines to form a berm. These work together to cause a great deal of the surface drainage to be diverted to the northeast and into Goose Prairie Creek.

4.3.6 ANALYTICAL RESULTS

The analytical results for groundwater samples taken in this area show that no explosives contamination was detectable in the aquifer (Appendix A). Surface water and sediment samples collected at Station 008 (which was located along a drainage course leading to Central Creek) were found to be negative for explosives content (Appendix B). Water samples collected at Station 006 (which was along the main drainage course from this area into Goose Prairie Creek) were found to contain measurable concentrations of three explosives: 2,4,6-TNT (206.9 ug/l), 2,4-DNT (23.4 ug/l), and 2,6-DNT (13.6 ug/l). Sediment samples taken at the same station were determined to contain 0.78 ug/g of 2,4,6-TNT. A concentration of 2.27 ug/l for 2,4,6-TNT was found as far as 0.8 mile from this site in surface water collected at Station 002, indicating a dilution factor of approximately 100 over this stretch of Goose Prairie Creek. The concentration of explosive compounds in the eight soil

samples collected from the Former TNT Production Area (Figure 18) ranged from 0 to over 7,600 ug/g of 2,4,6-TNT. All but one of the eight samples had some explosive contamination (Appendix C).

4.3.7 DISCUSSION

The analytical results generally indicate that the migration of contamination from the Former TNT Production Area is via surface water. None of the well samples showed any detectable levels of explosives contamination. Migration of explosive compounds from this area does not seem to follow this area's natural surface drainage pattern, which would have flow moving to the south into Central Creek. Instead, since production lines were built in manmade depressions which trap surface runoff, the major surface water runoff appears to leave the TNT Production Area via underground manmade pathways.

The level of contamination found in surface waters leaving the Former TNT Production Area and entering the Goose Prairie Creek system should be carefully evaluated. The samples collected during this survey show contamination levels which could be expected after a very heavy rainfall (Figure 19). Surface water and sediment samples were collected at Station 002 and 006 on 20 and 17 November at 1240 and 1620 hours respectively after 5.92 inches of rain had fallen in the previous 4 days.

Based on the heavy rains which preceded surface water sampling conducted for this survey, it is anticipated that surface water data generated may not portray the full extent of contamination and migration problems

associated with this area. Considering the site conditions, a great deal of flushing and dilution had taken place. Even with extensive dilution, the concentrations of TNT in the discharge surface water at Station 006 was greater than four times the limit recommended by the Army Medical Bioengineering Research and Development Laboratory (Table 8).

4.3.8 RECOMMENDATIONS

Additional survey work for this area is recommended. It should include an evaluation of the extent of surface and subsurface soil contamination in this area, and an investigation of the concentrations of explosive-related compounds in the surface water runoff from this area under varying meteorological conditions. A full evaluation of the concentration of explosives at surface water Stations 001, 002, and 006 should be conducted during a storm event. Based on the results of the additional survey work corrective actions should be taken to either remove the source of contamination or to contain the contamination. Additional investigation is required in order to define a permanent solution to this problem.

4.4 SOUTH TEST AREA 27

4.4.1 LOCATION

The South Test Area is located just west of Harrison Bayou near LHAAP's southern boundary (Figure 2).

4.4.2 HISTORY AND PRESENT ACTIVITIES

In 1954 the South Test Area was the site of the first test of the photo flash bomb. In the late 1950s pits were dug along the photo flash bomb

test site and were used to demilitarize illuminating devices. Additionally, the South Test Area was used to demilitarize leaking production items. This area has been relatively inactive since the early 1960s. Presently no disposal or testing activities are carried out in this area.

4.4.3 SAMPLING METHODS

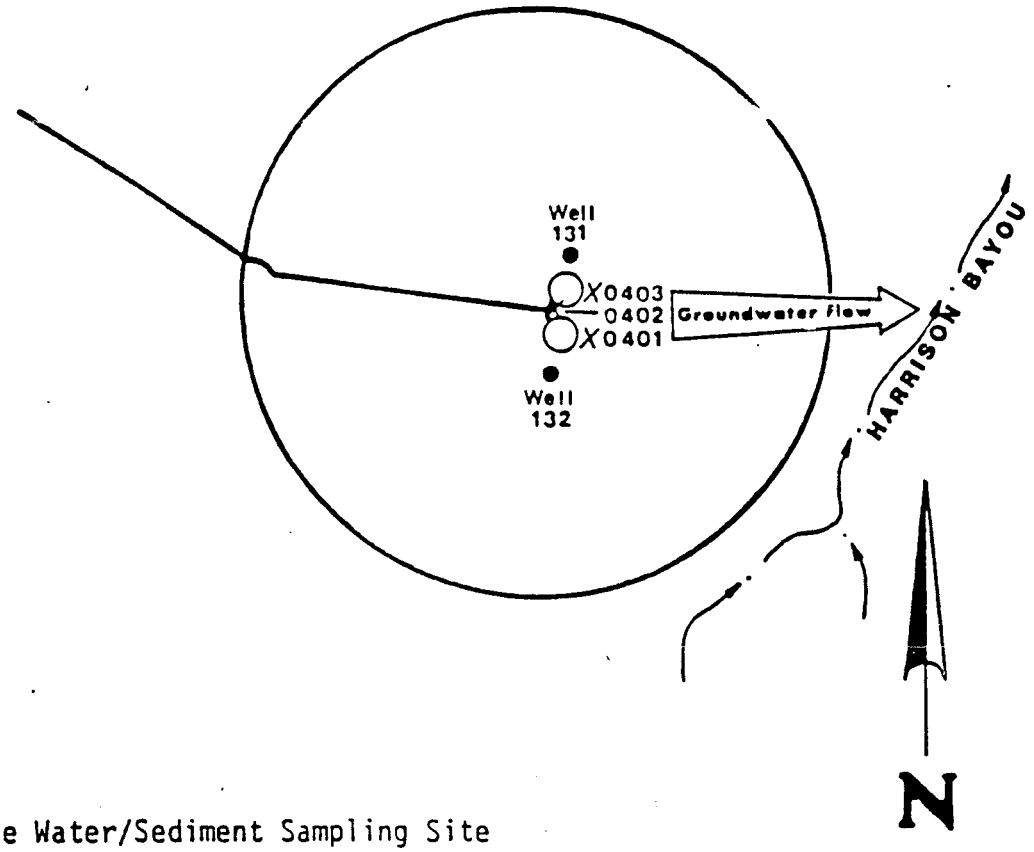
Groundwater contamination at the South Test Area was investigated via the installation of two monitoring wells (131 and 132) (Figures 3 and 19). Three soil samples were collected from the cleared zone associated with the South Test Area (Figure 19). No directly correlatable surface water or sediment samples were collected near this site; however, it is located along the Harrison Bayou floodplain, and Station 019 constituted an upstream sampling site and Station 018 a downstream site.

4.4.4 LITHOLOGY AND GEOHYDROLOGY

In Wells 131 and 132 clay and very silty sand layers overlie the slightly silty to silty aquifer. The groundwater flows eastward towards Harrison Bayou. These two wells are located at the ends of the grass-covered asphalt test pad. This area is located adjacent to the floodplain of Harrison Bayou and the pad area is elevated (filled) over the surrounding area.

The minimum and maximum seepage velocities are as follows for the estimated permeabilities and gradients: V_{min} = 9 ft/yr (i = 0.003, K = 2.0×10^{-3} ft/min); V_{max} = 30 ft/yr (i = 0.004, K = 5.0×10^{-3} ft/min).

Figure 19



- ▲ Surface Water/Sediment Sampling Site
- X Soil Sampling Site
- ● Well Installed During Project
- ▲ Existing AEHA Well (*AEHA No.)
- ▣ Proposed Surface Water/Sediment Sampling Site
- ◉ Proposed Well Location
- ☒ Proposed Soil Sampling Location

APPROX SCALE 1:7240

South Test Area

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

SOURCE: ENVIRONMENTAL PROTECTION SYSTEMS, INC. - 1993

4.4.5 SURFACE DRAINAGE

Surface water drainage in the South Test Area is to the south and southeast directly into Harrison Bayou.

4.4.6 ANALYTICAL RESULTS

Chloride concentrations for water samples from Wells 131 and 132 (Appendix A) in the South Test Area exceeded the maximum allowable limit designated by the Texas Department of Health for drinking water (Table 6). The same was true for the sulfate concentration for the water sample from Well 132. Additionally, the manganese concentration in water from Well 132 was approximately 30 times higher than is allowed by Texas drinking water standards. No explosives were detected in either of the two test wells and only minor organic contamination was discovered in Well 131.

Two of the three soil samples collected at the South Test Area contained measurable levels of 2,4,6-TNT: 10.15 ug/g for Station 0401 and 4.61 ug/g for Station 0402 (Appendix C). All other analytical results for the soil samples collected at this site appeared to be relatively consistent with results for soils at other uncontaminated areas of LHAAP.

4.4.7 DISCUSSION

Considering the proximity of the South Test Area to the Harrison Bayou floodplain and the length of time associated with its inactivity, the analytical results from this survey demonstrate that if any major

contamination did exist within this area it has by now probably migrated from the site. The concentrations of chloride, sulfate, and manganese observed in wells at this site appear to be typical background levels similar to those encountered at most of the other wells sampled during this study (Appendices A and G).

4.4.8 RECOMMENDATIONS

In view of the relatively low concentration of explosives in the soils and the results of the groundwater monitoring, it can be seen that this area currently has a very low potential for contaminant migration. It is recommended that no corrective action is necessary in the South Test Area.

4.5 GROUND SIGNAL TEST AREA 5A:

4.5.1 LOCATION

The Ground Signal Test Area is located in the southeast corner of LHAAP (Figure 2).

4.5.2 HISTORY AND PRESENT ACTIVITIES

Since April 1963, when production of pyrotechnic devices was reactivated at LHAAP this site has been used for materials proofing and surveillance tests. Specifically, the Ground Signal Test Area is used for testing red phosporous smoke wedges, 4.2 illuminating shells, and ammunitions ranging from 40 mm to 155 mm. On several occasions Nike and Sargent rocket motors have been tested here, and XM40EB button bombs have been demilitarized in the southeastern section of the Ground Signal Test Area. Presently testing activities continue on a daily basis at this site.

4.5.3 SAMPLING METHODS

Groundwater samples were collected from Wells 127 and 128, which were installed on the perimeter of the Ground Signal Test Area (Figures 3 and 20). Soil samples were collected at Stations 0501, 0502, and 0503 in this area for the analytical investigation (Figure 20).

4.5.4 LITHOLOGY AND GEOHYDROLOGY

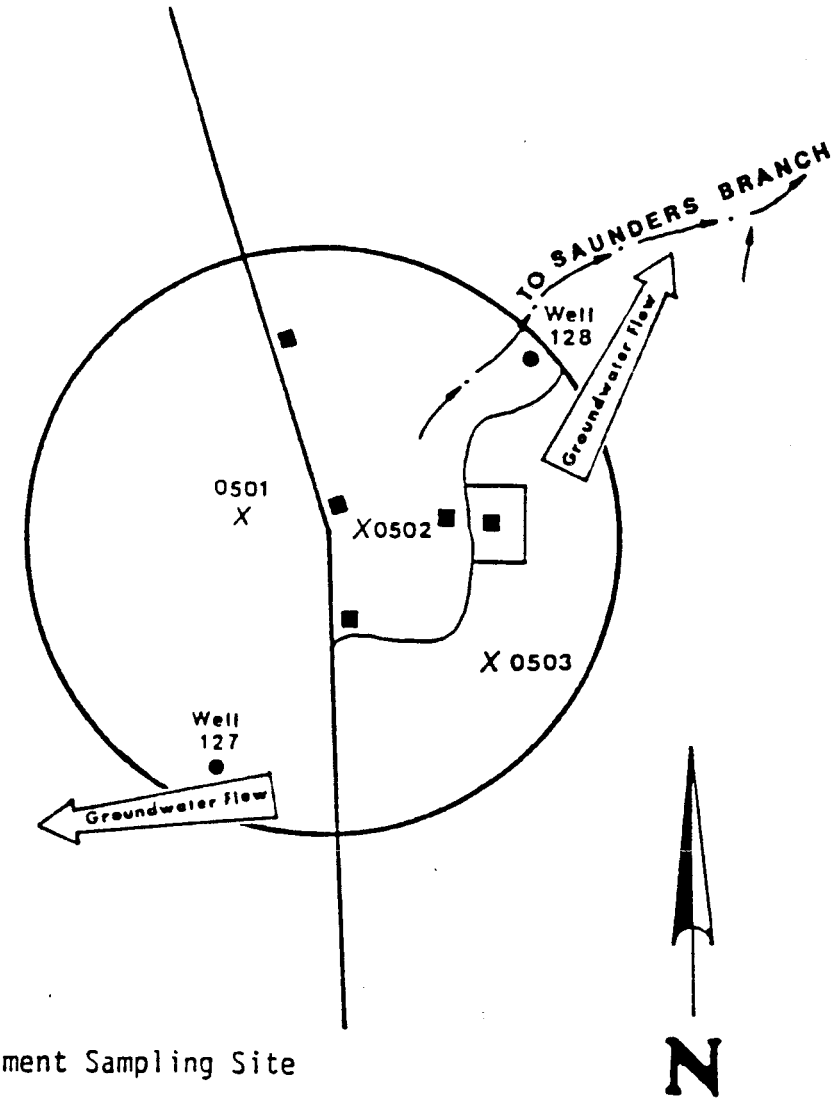
In Wells 127 and 128 silty sand and clayey sand overlie the aquifer. The aquifer in Well 127 consisted of slightly clayey silty sand and silty sand, whereas thinly-bedded silty sand and clay was present in the aquifer of Well 128.

The groundwater flows from the area near Well 127 westward towards Harrison Bayou. On the opposite side of the Ground Signal Test Area the groundwater flows from Well 128 northeastward towards Saunders Branch. The minimum and maximum seepage rates for groundwater near the two wells, using estimated permeabilities and groundwater gradients, are as follows: Well 127 - V_{min} = 7.5 ft/yr (i = 0.005, K = 1 x 10^{-3} ft/min); V_{max} = 60 ft/yr (i = 0.008, K = 5 x 10^{-3} ft/min); Well 128 - V_{min} = 0.5 ft/yr (i = 0.003, K = 1 x 10^{-4} ft/min); V_{max} = 4.8 ft/yr (i = 0.008, K = 4 x 10^{-4} ft/min).

4.5.5 SURFACE WATER DRAINAGE

The Ground Signal Test Area is located on a ridge between Saunders Branch to the east and Harrison Bayou to the west. Based on information from aerial photographs and USGS maps, it is estimated that approximately 70

Figure 20



▲ Surface Water/Sediment Sampling Site
X Soil Sampling Site
● Well Installed During Project
▲ Existing AEHA Well (*AEHA No.)
▲ Proposed Surface Water/Sediment Sampling Site
● Proposed Well Location
X Proposed Soil Sampling Location

APPROX SCALE 1:7240

Ground Signal Test Area

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

SOURCE: ENVIRONMENTAL PROTECTION SYSTEMS, INC., 1989

ercent of this area drains to the east into Saunders Branch; and 30 percent (the western edge of the area) drains into Harrison Bayou.

4.5.6 ANALYTICAL RESULTS

Results from inorganic analyses of water from Wells 127 and 128 (Appendix A) show concentrations of chlorides, sulfates, and manganese which exceed allowable limits for drinking water designated by the Texas Department of Health (Table 6).

The soil samples collected from Stations 0501, 0502, and 0503 in the Ground Signal Test Area showed concentrations of anions and metals similar to those found in background soil samples, and there was no evidence of explosives contamination in any of the soil samples (Appendix C).

4.5.7 DISCUSSION

Based on the limited testing conducted in this rather large area, it appears that no gross contamination conditions exist which pose a threat of migration from LHAAP to outside areas. The concentrations of chlorides, sulfates, and manganese determined for groundwater samples from this area seem to be consistent with most other concentrations of these analytes found throughout LHAAP and are, therefore, considered to be typical background levels (Appendices A and G).

4.5.8 RECOMMENDATIONS

It is recommended that further action may be necessary in the Ground Signal Test Area. The actions outlined below should be performed when

additional investigations are conducted at LHAAP. It is recommended that several samples of sediment and surface water should be collected in the drainage course which drains the southern and eastern half of the Ground Signal Test Area into Saunders Branch. Analyses should be done for barium and chromium to determine if the elevated concentrations found in Saunders Branch are associated with surface runoff from this area.

4.6 ACTIVE BURNING GROUNDS

4.6.1 LOCATION

The Active Burning Grounds are located north of the eastern end of Avenue n the central part of LHAAP (Figure 2).

4.6.2 HISTORY AND PRESENT ACTIVITIES

Since the early 1950s, this area has been used to burn a variety of flammable wastes from throughout LHAAP, including industrial operations waste, laboratory wastes, and chemical-contaminated scrap, transformer oil, and red phosphorous.

In the past, the Active Burning Grounds have also been used as a burial site for industrial wastes. Pits were dug along the western edge of this area and wastes from rocket motors, illuminating mixtures, oxidizing agents (including ammonium perchlorate and sodium nitrate), waste oil, d methylene chloride were all buried here. A third process now carried n in the Active Burning Grounds is the operation of an industrial waste lagoon (designated as the Rocket Motor Washout Pond) in the area's northern corner. This pond is unlined and measures approximately 82 m

(269 ft) x 55 m (180 ft). Additionally, incinerator operation and open burning in cages and pits continue daily at this site.

4.6.3 SAMPLING METHODS

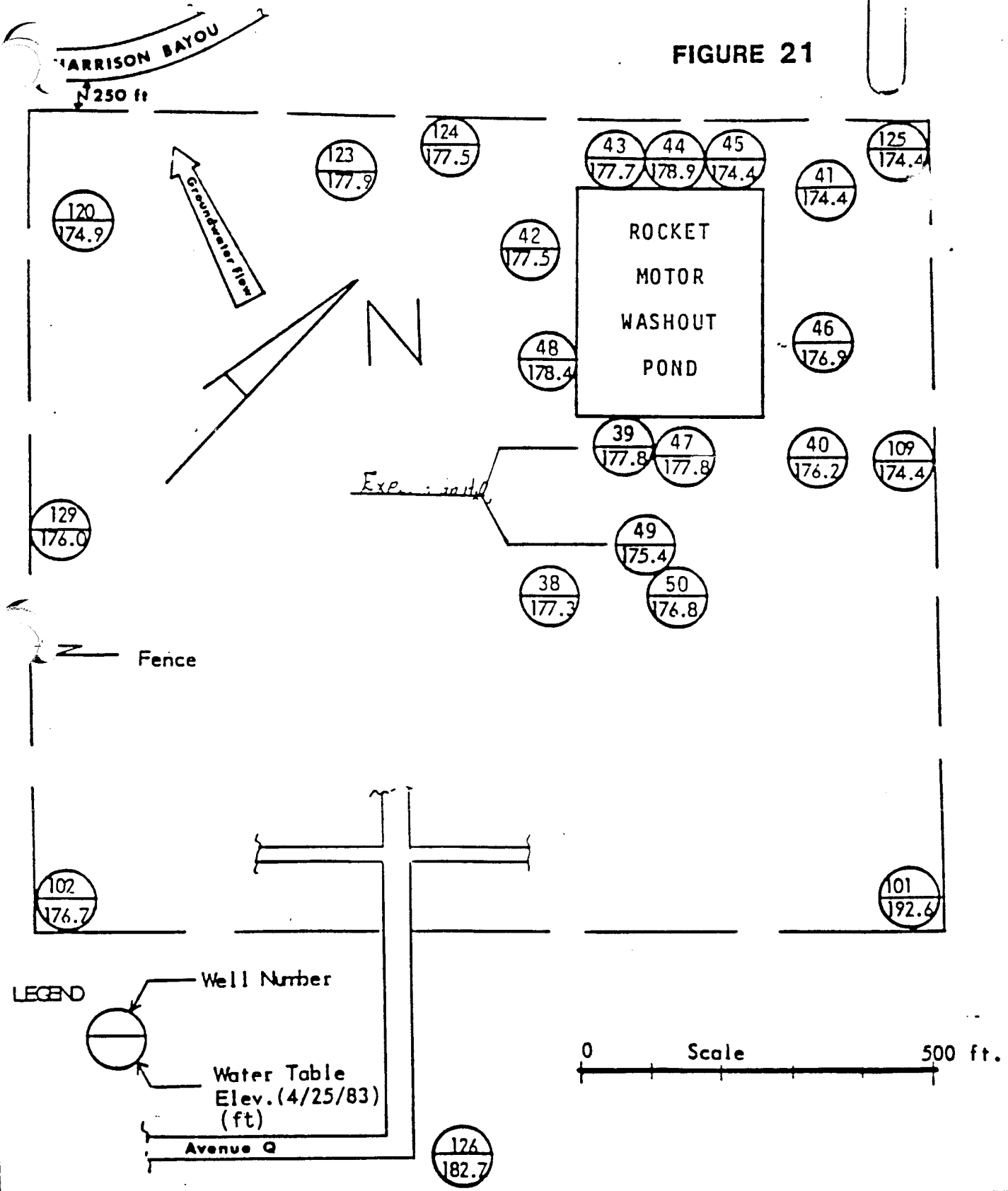
Groundwater quality in the vicinity of the Active Burning Grounds was thoroughly investigated through an intensive sampling program conducted at 22 monitoring wells within this area (Figures 3 and 21). Nine wells (101, 102, 109, 120, 123, 124, 125, 126, and 129) were installed during this survey and 13 existing AEHA wells (38 through 50) were also sampled. Surface water and sediment samples were collected from the Rocket Motor Washout Pond (Station 014) and Harrison Bayou north of the Active Burning Grounds (Station 015). No soil samples were collected within the Active Burning Grounds during this survey.

4.6.4 LITHOLOGY AND GEOHYDROLOGY

Soil types vary considerably in the Active Burning Grounds and the soil layers appear to be discontinuous. Generally, sandy clay and very silty sand soils overlie the aquifers of silty sand. The aquifers are underlain by layers of clay and sandy silt with low permeability. Well tests in the area indicated permeabilities ranging from 9.9×10^{-5} ft/min to 9.7×10^{-3} ft/min.

Figure 21 shows the groundwater level at each well in the Active Burning Grounds area. The water levels indicate a general groundwater flow from east to west across the area towards Harrison Bayou. The interior wells show the mound effect in the area of the Rocket Motor Washout Pond. The

FIGURE 21



ACTIVE BURNING GROUNDS

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

groundwater appears to spread out radially from the pond and moves around the mounded area to the west and northwest toward Harrison Bayou or a tributary, which flows past the area approximately 250 ft from the west corner of the Burning Grounds fenc

The following seepage rates are based on average high and low permeabilities of the soils and estimated gradients in the area from Wells 120 and 123 to Harrison Bayou: V_{min} = 3 ft/yr (i = 0.004, K = 5 x 10^{-4} ft/min); V_{max} = 190 ft/yr (i = 0.014, K = 9 x 10^{-3} ft/min).

The maximum seepage rate from this area will occur from Wells 120 and 123 to Harrison Bayou because the higher-permeability aquifers are present in Wells 120, 123, 124, 125, and 129.

4.6.5 SURFACE WATER DRAINAGE

Surface water associated with the Active Burning Grounds migrates to the west and west-northwest directly into the Harrison Bayou floodplain. Drainage of surface water is aided by the existence of manmade ditches which border the southern and western edges of the Burning Grounds area. Runoff from the open burning sites on the northwestern side of the Burning Grounds are directed via manmade swales directly into the Harrison Bayou floodplain.

4.6.6 ANALYTICAL RESULTS

Analytical results for groundwater samples from the 22 monitoring wells located in the Active Burning Grounds are presented in Appendix A. As

with many of the wells sampled and analyzed at LHAAP, fifteen of the wells associated with the Active Burning Grounds exhibited concentrations of chloride and/or manganese which exceeded allowable limits for drinking water published by the Texas Department of Health (Table 6). Eight wells in this area (all of which were located in the northwestern half of this area) had nitrate concentrations in excess of Texas drinking water limits (Table 6). Wells 101, 102, and 129, had lead concentrations in excess of the Texas drinking water limit (Table 6), with Well 129 having the highest concentration (780 ug/l). Wells 101 and 102 had chromium concentrations greater than the Texas drinking water limit (Table 6). Well 125, located in the northernmost corner of the Burning Grounds, had the highest barium concentration of all wells sampled in this area (2210 ug/l). The barium concentration in this particular well was twice the maximum limit prescribed by the Texas Department of Health (Table 6). Additionally, this well contained 14.28 ug/l of cadmium, which is also in excess of the Texas drinking water limit (Table 6).

Results from GC/MS organic screens demonstrated that groundwater in this area, and in particular from those wells surrounding the Rocket Motor Washout Pond, is contaminated with a variety of organic compounds, many of which are chlorinated. The following 11 wells demonstrated the largest variety, and highest concentrations, of organic compounds: Wells 43, 44, 45, 46, 47, 48, 49, 50, 109, 123, and 125. It should be noted that in many of these wells EPA-established criteria (Table 7) for specific volatile organic compounds were exceeded. Traces of explosive compounds were found in Wells 39, 48, 49, 50, 101, 102, 124, and 125.

However, no explosive compounds were detected in concentrations greater than established criteria or standards.

Surface water Station 015 was immediately downstream from the Active Burning Grounds in Harrison Bayou. Considering that stations sampled upstream in Harrison Bayou contained less than the detectable limits of barium, the 758.00 ug/l of barium found at Station 015 represents a contaminant associated with the Rocket Motor Washout Pond, which has apparently migrated to this point. A barium concentation of 24.00 ug/l was also detected further downstream at the boundaries of LHAAP (Station 013). It should be noted that no volatile organic compounds, explosives, or nitrates were detected at surface water Station 015.

Surface water and sediment samples from the Rocket Motor Washout Pond were collected and analyzed during this survey (Appendix B). Pond waters were found to have high concentrations of the following anions: nitrate (165,500. ug/l) and fluoride (66,000. ug/l). This nitrate concentration exceeds the Texas drinking water standard of 10 ug/l. Additionally, two metals were found in high concentrations in these waters: barium (1620 ug/l) and strontium (14,400.00 ug/l). Surface waters collected from this pond also contained a number of the organic compounds found in the monitoring wells surrounding it (see Appendix B, Table B-5). Sediment samples collected from the bottom of the Rocket Motor Washout Pond had a barium concentration of 1,031.4 ug/g, the highest concentration of barium for any sediment sample collected in this survey.

4.6.7 DISCUSSION

Analytical results for this site indicate two problem areas associated with the Active Burning Grounds. These include the Rocket Motor Washout Pond and the potential burial of explosives residue and/or materials with high nitrate concentration. Visual observations at the Burning Grounds revealed a third activity which might be a source of contamination that could migrate from LHAAP. This third area consists of active burning pits now located on the northwest side of the Active Burning Grounds. These pits are used approximately three times per day to burn a variety of combustible wastes generated at LHAAP. Observations at this site indicate that surface runoff from this burning area has a manmade route through ditches and culverts directly into the Harrison Bayou floodplain.

The concentrations of contaminants found in the wells associated with the Rocket Motor Washout Pond do not present an accurate picture of the areal extent of the contamination problem. All of the wells are located within the fenced Active Burning Grounds, and all of the suspected downgradient wells are within 200 ft of the pond itself. The concentration of barium found in Harrison Bayou at a station just downstream from the Active Burning Grounds is the first indication that contamination originating from within the Active Burning Grounds has reached the Bayou itself. Considering the high levels of dilution associated with this sampling effort, it can be expected that barium concentrations at times will be much higher than those discovered during this survey. The fact that barium was discovered leaving LHAAP at Station 013 farther downstream was the only evidence generated during this survey that a contaminant

associated with activities at LHAAP (namely, the Rocket Motor Washout Pond) was actively migrating from the installation. It is suspected that the barium migrated from the Rocket Motor Washout Pond; however, other sources are possible (e.g. activities associated with Ground Signal Test Area). Since none of the organic compounds found in the wells surrounding the Rocket Motor Washout Pond were detected in the waters of Harrison Bayou (Stations 013 and 015), it can be concluded that either their entry into the aquifer at the Rocket Motor Washout Pond was later than the entry of the barium or that there is differential movement of these materials through the sediments and into the Harrison Bayou floodplain. It is also possible that the meteorological conditions existing during field sampling diluted any organics present to a concentration below the detection limit or these compounds may have been volatilized upon entry into the surface water of the Bayou.

4.6.8 RECOMMENDATIONS

The Active Burning Grounds contain three potential contamination sources of concern, all of which require confirmatory investigation and possible remedial action.

The first, and most obvious, of these sources is the Rocket Motor Washout Pond. This area continues to be used as the site to receive all liquid industrial wastes generated at production Plants 2 and 3. Placement of waste materials into this unlined pond should be stopped immediately. It is recommended that all industrial wastes should receive an advanced form of treatment to remove all organic and inorganic constituents. It is

suggested that pilot tests should be conducted with an activated carbon system to remove all of the organic constituents. After this pre-treatment step, the compatibility of the generated wastes with the existing domestic treatment facility should be investigated as a means of removal of the inorganic nitrogen and phosphorus. It is suggested that the waters contained in the pond should be removed to the pre-treatment facility for cleanup. A further investigation into the movement and existing areal extent of the goundwater contamination associated with this pond should be conducted through the installation of five to eight additional monitoring wells located to the northwest, west, and northeast of the pond. These wells should be located beyond the existing fence line and at distances intermediate between the existing wells and the Harrison Bayou floodplain. It is suggested that these wells be monitored for anions, metals, explosives, and organics parameters. Analytical results for groundwater samples from these wells should be used to evaluate the need for remedial cleanup of existing groundwater.

The second area of concern associated with the Active Burning Grounds is the potential for buried explosive material and material with nitrate-containing compounds. It is suggested that a grid system be established in those areas determined to be most contaminated, and that soil samples from the surface and at depths of 5 ft and 10 ft be collected and analyzed for the presence of explosive compounds and anions.

The third area of concern is the runoff from the active burning pits located in the Burning Grounds. Here it is suggested that additional

analyses be conducted at two sites along the swales leaving the Active Burning Grounds and that the chemical composition of the runoff be determined to establish its potential treatability. It is further suggested that immediate steps should be taken to design a burning pit which eliminates all direct discharges into the Harrison Bayou floodplain by catching all surface runnoff in an appropriate sump for treatment in the new industrial treatment system proposed for LHAAP.

4.7 FLASHING AREA

4.7.1 LOCATION

The Flashing Area is located just north of Avenue Q and southwest and adjacent to the Active Burning Grounds (Figure 2).

4.7.2 HISTORY AND PRESENT ACTIVITIES

This site, often referred to as the Old Burning Grounds, is a potential burial site for bulk TNT, as documented by reports of TNT being uncovered here in 1954. The Flashing Area was also used for burning bulk TNT, photoflash powder, and reject material gathered when LHAAP was operated by Universal Match Corporation. During 1959 all of the materials removed from the TNT production area were burned or flashed at this site. The site was used up to 1980 as an active flashing area to decontaminate recoverable metal by-products. Presently, no activities are conducted at this site by Thiokol.

4.7.3 SAMPLING METHODS

Well 130 was placed in the Flashing Area for a study of potential groundwater contamination (Figures 3 and 22). Sediment and surface water

samples were collected to the northeast of the Flashing Area in a small freshwater wetland meadow which drains this particular area (Figures 4 and 22). No soil samples were collected in this area.

4.7.4 LITHOLOGY AND GEOHYDROLOGY

In Well 130 silty sand and silty clay layers overlie the aquifer of silty sand containing clay seams. Based on the USGS maps and field observations, the shallow groundwater flows to the northwest toward Harrison Bayou into a freshwater meadow located approximately 200 ft northeast of the well. The length of the drainage path and the minimum time required for the groundwater to exit as surface water is reduced because the freshwater meadow intercepts the flow of shallow groundwater. The minimum and maximum seepage velocities, based on estimated permeabilities and gradients, are as follows: V_{min} = 1.5 ft/yr (i = 0.001, K = 1 x 10^{-3} ft/min); V_{max} = 15.0 ft/yr (i = 0.01, K = 1 x 10^{-3} ft/min).

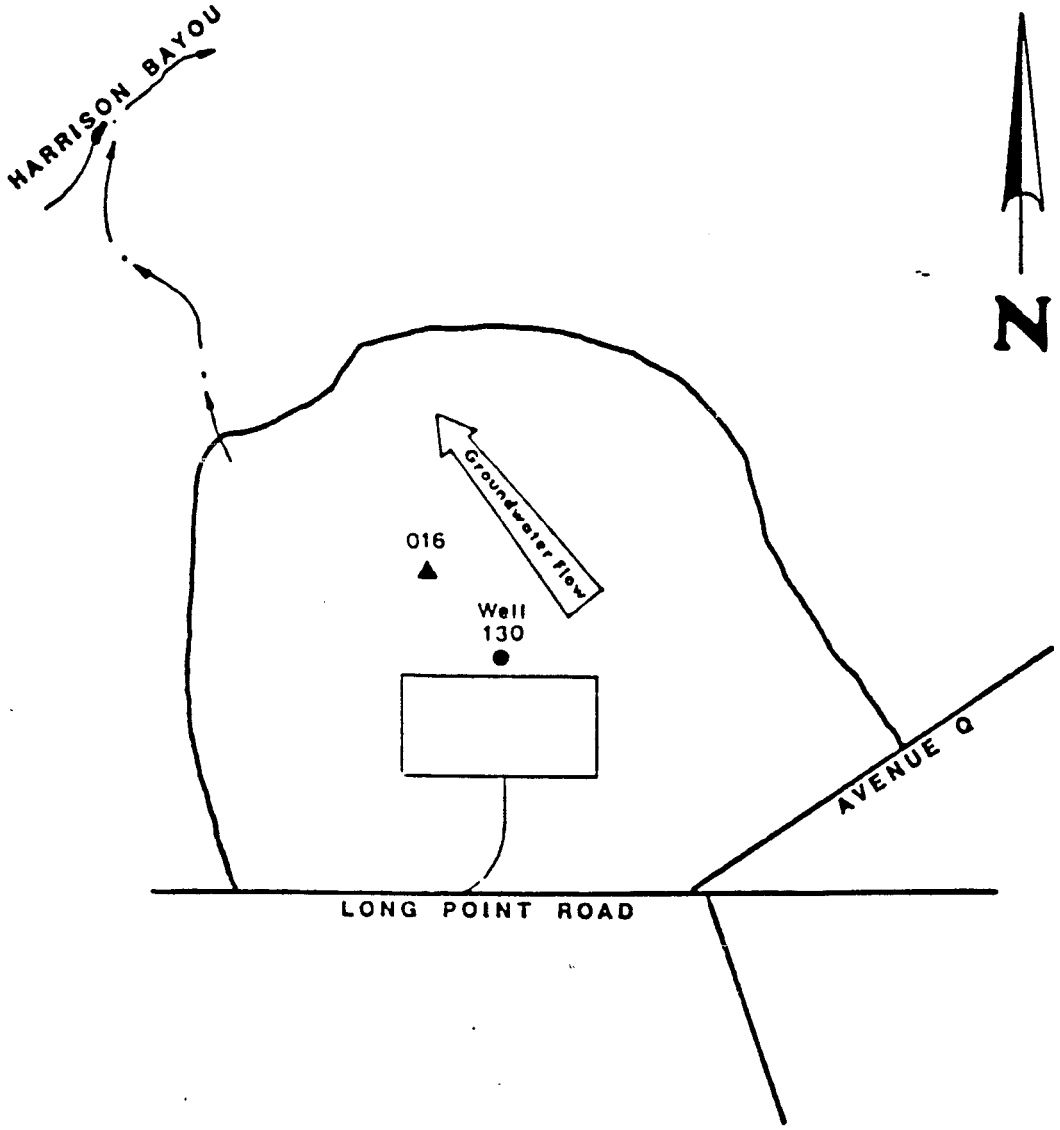
4.7.5 SURFACE WATER DRAINAGE

The Flashing Area is located within the drainage basin of Harrison Bayou. Surface water drainage from this area is apparently to the north, northeast, and northwest.

4.7.6 ANALYTICAL RESULTS

The analytical data for groundwater samples from Well 130 (Appendix A) indicated that the inorganic parameters were relatively normal, with chloride concentrations being approximately 10 times higher than the

Figure 22



- ▲ Surface Water/Sediment Sampling Site
- X Soil Sampling Site
- ● Well Installed During Project
- ▲ Existing AEHA Well (*AEHA No.)
- ▣ Proposed Surface Water/Sediment Sampling Site
- ◉ Proposed Well Location
- ⊠ Proposed Soil Sampling Location

APPROX SCALE 1:2070

Flashing Area

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

allowable Texas drinking water limit (Table 6). No explosives were found in the samples taken from this well, however, a concentration of 162 ug/l of chlorinated organic compounds was present. These included dichloromethane (153 ug/l) and trichloroethene (9 ug/l). Additionally, tetrahydrofuran (46 ug/l) was discovered in this well. The concentrations of dichloromethane and trichloroethene found in well 130 exceeded EPA-established criteria.

Results for surface water and sediment samples collected at Station 016 were similar for presence and concentration of inorganic parameters found in background samples (Appendix B). Additionally, these samples contained no explosives and no other organic compounds.

4.7.7 DISCUSSION

The results do not indicate the existence of any major contamination in the Flashing Area. It is particularly interesting to note that no explosives were discovered during our investigation of this area, especially in view of the fact that explosives compounds were discovered in the nearby Active Burning Grounds. The lack of a definite boundary between the Burning Grounds and the Flashing Area, especially in past years of operation, would tend to support the potential for explosive contamination in the Flashing Area. It is suspected that the limited number of wells and the lack of soil sampling and analyses have precluded the identification of possible contamination sites in this area. The environmental significance of the levels of solvent residue found in Well 130 cannot be fully assessed because the source of material and the

existing aerial extent of the groundwater contamination are not discernible.

4.7.8 RECOMMENDATIONS

The analytical data generated for the Flashing Area and additional data for Well 102 indicates that groundwater contamination exists immediately east of the Flashing Area. We propose that more extensive monitoring be conducted in the Flashing Area and, as previously suggested, in the adjacent Active Burning Grounds. This effort should include the installation of several monitoring wells east and southeast of existing Well 130. It is suggested that soils be analyzed for presence of explosives and heavy metals at the surface and depths of 5 ft and 10 ft. It is recommended that up to 10 additional sites be selected for this purpose. Although the data to date does not support the conclusion that contamination is migrating from this area through Harrison Bayou and out of LHAAP, there is certainly enough historical data and pre-existing physical evidence to suggest that a potential does exist for contamination migration. It is important that the extent of tnis potential be investigated.

4.8 OLD LANDFILL

4.8.1 LOCATION

The Old Landfill is located north of Avenue Q and is bounded on the east by Harrison Bayou and on the west by the existing railroad tracks (Figure 2).

4.8.2 HISTORY AND PRESENT ACTIVITIES

The Old Landfill area was used for the disposal of inert materials and hazardous mission-related wastes. The area was used to dispose of TNT redwater ash material from 1942 to 1944. In the mid- to the late- 1950s, three rocket motor casings were burned on the western side of this landfill. An artificial lake once located to the east of the Old Landfill served as an all-purpose junkyard for the disposal of such materials as substandard TNT, barrels of chemicals, oil, paint, scrap iron and wood. This area has now been filled in and presently no lake exists. Currently all solid wastes are supposed to be disposed of in the New Landfill. The Old Landfill site is now approved for the deposition of inert rubble only.

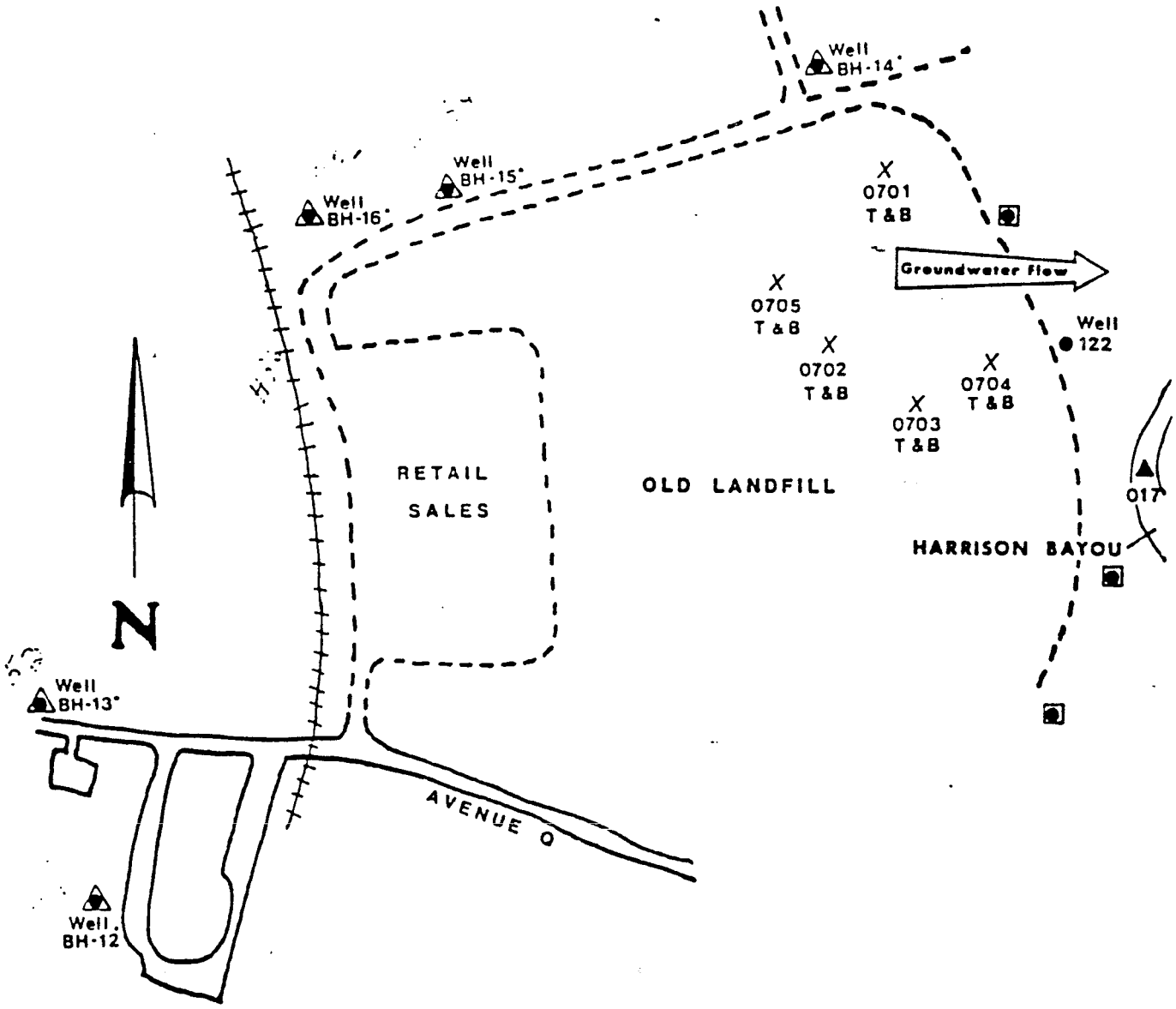
4.8.3 SAMPLING METHODS

One monitoring well (122), in addition to the four existing AEHA wells, was constructed at the Old Landfill area; thus, five wells were sampled to characterize the subsurface water quality of this area (Figure 23). A surface water and stream sediment sampling station (017) was established immediately east of this site in Harrison Bayou to determine the potential impact of surface and subsurface runoff from this area into the Bayou. Additionally, contamination in surface and near-surface soils was investigated by taking samples at five locations of the topsoil layer (0 - 2.5 ft depth) and subsurface soil (2.5 - 5.0 ft depth).

4.8.4 LITHOLOGY AND GEOHYDROLOGY

In Well 122 silty sand with some wood debris (fill material) overlies the aquifer of slightly silty to silty sand. The groundwater flows eastward

Figure 23



▲ Surface Water/Sediment Sampling Site
X Soil Sampling Site
● Well Installed During Project
▲ Existing AEHA Well (*AEHA No.)
▣ Proposed Surface Water/Sediment Sampling Site
◉ Proposed Well Location
▭ Proposed Soil Sampling Location

APPROX SCALE 1:3620

Old Landfill

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY

toward Harrison Bayou and the ground surface drops sharply (6 ft) down to the floodplain 45 ft east of the well. The groundwater becomes surface water at the edge of the floodplain after appreciable amounts of rainfall have occurred. The minimum and maximum seepage velocities are as follows: V_{min} = 10.8 ft/yr (i = 0.003, K = 2.4 x 10^{-3} ft/yr); V_{max} = 36.0 ft/yr (i = 0.01, K = 2.4 x 10^{-3} ft/yr).

4.8.5 SURFACE WATER DRAINAGE

The Old Landfill is completely contained within the Harrison Bayou drainage basin. All surface water drains to the east directly into a backwater branch of Harrison Bayou.

4.8.6 ANALYTICAL RESULTS

Analytical data for groundwater samples collected at the five wells in the Old Landfill area was consistent with results obtained for other areas of LHAAP (Appendix A). Wells 36, 37, and 52 had chloride concentrations in excess of the Texas Department of Health drinking water limit (Table 6); however, no other major contamination was observed in these wells. Well 51 had a chromium concentration of 55.80 ug/l, which slightly exceeded the federal drinking water quality limit, and had traces of 1,3,5-TNB (6.09 ug/l). Well 122 had a chloride concentration in excess of the Texas drinking water limit and had a manganese concentration approximately 45 times higher than the Texas drinking water limit. This well did not contain any explosive compounds but did contain traces of organic compounds. All monitoring wells in the Old Landfill area had manganese concentrations in excess of the acceptable limit for Texas drinking water quality.

Surface water collected at Station 017 exhibited no unusual characteristics; however, sediments collected from the same station showed traces of 1,3-DNB (12.2 ug/g), 2,4,6-TNT (3.9 ug/g), and nitrobenzene (15.0 ug/g) (Appendix B).

Soil samples collected from the Old Landfill site were relatively consistent with soil samples collected from the rest of LHAAP with the exception of the high barium concentrations (557.3 ug/g and 991.1 ug/g) for top soil samples from Stations 701 and 703, respectively. Additionally, the top soil sample from Station 704 had 13.6 ug/g of 2,4,6-TNT.

4.8.7 DISCUSSION

Analytical results for samples collected at the Old Landfill indicate that this site contains low-level contamination, as outlined above, which has low potential for migrating outside LHAAP through the Harrison Bayou drainage basin. Whereas the existing AEHA wells were located upgradient from the Old Landfill, Wells 51 and 52 were located southwest of the site to evaluate the 54-W area which was once allegedly used for the deposition of explosives. Low concentrations of explosives were found in Well 51, which would tend to support this possibility; however none had a concentration greater than established criteria or standards. Based on available information it is not possible to determine the source of chromium detected in Well 51. However, this situation appears to be very localized, since high chromium concentrations were not observed at other wells in the area.

4.8.8 RECOMMENDATIONS

It is recommended that two or three additional monitoring wells should be installed along the eastern edge of the Old Landfill between the eastern edge of the Landfill and Harrison Bayou to determine the full extent of the migration of contaminants from this area. These wells should be monitored along with the existing AEHA wells and Well 122 to evaluate the long-term impact of leachate from this site on the Harrison Bayou system. Additionally, tighter controls should be placed on the dumping of materials in this area now and in the future. This area remained accessible as a dumpsite during all of our visits to LHAAP, and was actively being used for the deposition of construction materials and other wastes.

4.9 ACTIVE LANDFILL

4.9.1 LOCATION

The Active Landfill is located off Avenue Q just northeast of the intersection of Avenues Q and P at the site of a former dirt borrow area (Figure 2).

4.9.2 HISTORY AND PRESENT ACTIVITIES

This area is presently receiving industrial refuse inputs which consist of combustible and non-combustible materials having no scrap value. The non-combustible materials include residue from the thermo-decontamination operation of the Active Burning Grounds.

4.9.3 SAMPLING METHODS

The Active Landfill had four existing AEHA wells which were used for

monitoring prior to the initiation of this study. Wells 103 and 121 were added at this study area and all six monitoring wells were sampled to determine the levels of contamination in the near-surface aquifer of this area (Figures 3 and 24). No soil samples were collected from this site and no surface water and sediment samples collected during this survey are directly correlatable to this area.

4.9.4 LITHOLOGY AND GEOHYDROLOGY

In Wells 103 and 121 silty sand and clayey sand soils overlie the aquifer of cleaner silty sand soils. Based on an analysis of the information available, which includes the USGS topographic map of the area and water level information at the well, it appears that the groundwater is not hydraulically connected by a phreatic surface to the tributaries of Central Creek (see Section 3.2). The groundwater may flow northward toward Central Creek or eastward toward Harrison Bayou. The minimum and maximum seepage velocities are as follows for the groundwater flow in this area: V_{min} = 10.8 ft/yr (i = 0.003, K = 2.4 x 10^{-3} ft/min); V_{max} = 35 ft/yr (i = 0.01, K = 2.4 x 10^{-3} ft/min).

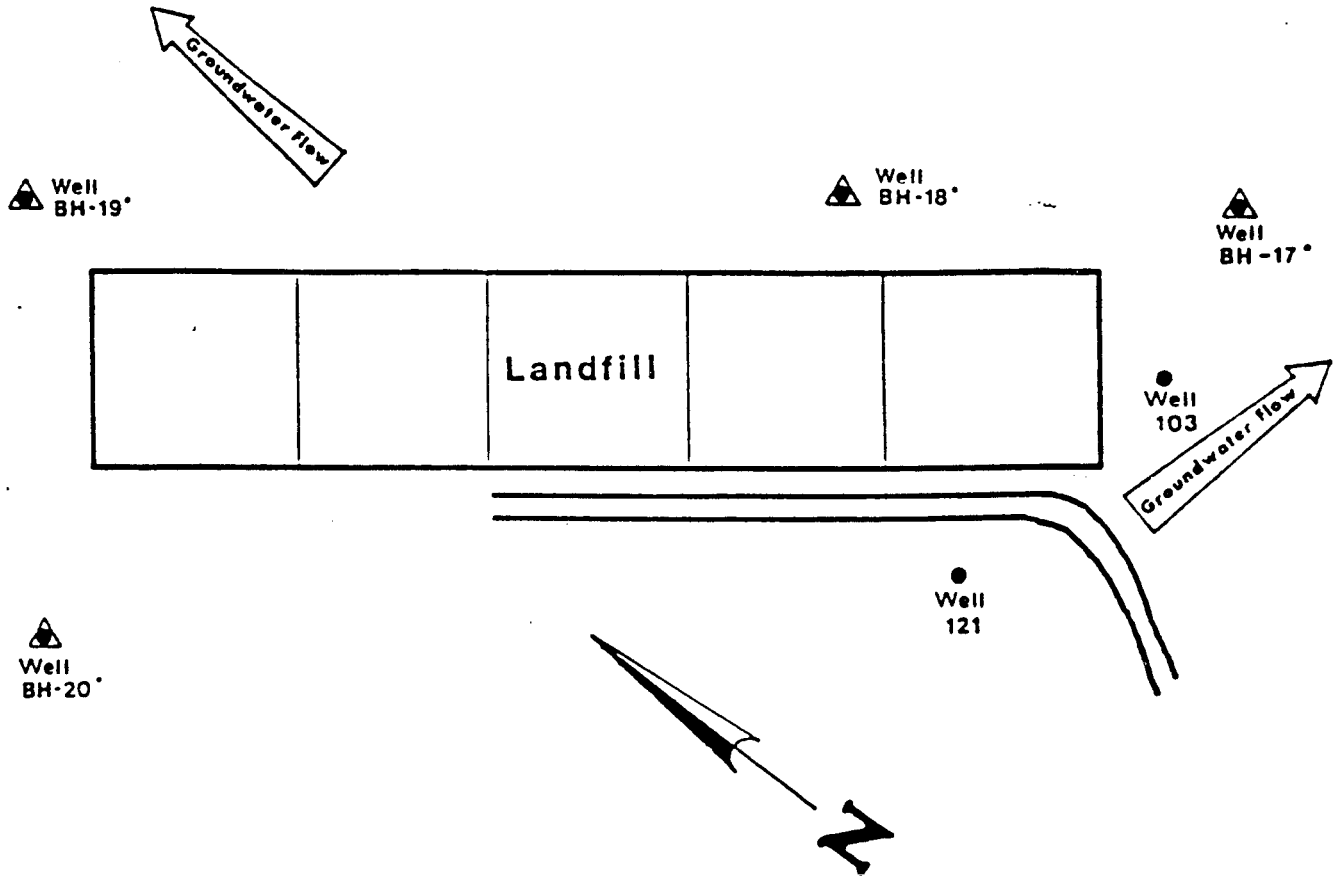
4.9.5 SURFACE WATER DRAINAGE

Surface water drainage associated with the Active Landfill is to the north and northeast and to the southernmost branch of Central Creek.

4.9.6 ANALYTICAL RESULTS

Analytical results for groundwater samples from the Active Landfill area showed chloride levels in excess of the permissible Texas limit for

Figure 24



▲ Surface Water/Sediment Sampling Site
X Soil Sampling Site
● Well Installed During Project
▲ Existing AEHA Well (*AEHA No.)
▣ Proposed Surface Water/Sediment Sampling Site
◉ Proposed Well Location
⊠ Proposed Soil Sampling Location

APPROX SCALE 1:4600

Active Landfill

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND

public drinking water for Wells 34 and 52. All wells, except Wells 34 and 35, had manganese concentrations in excess of the Texas drinking water limit. Well 103 had the highest concentration of cadmium for all wells in this area (11.52 ug/l), which is slightly above the established drinking water limit of 10 ug/l. Very low levels of 1,3-DNB were found in Well 35. Low levels of dichloromethane (45 ug/l) and pentane (33.0 ug/l) were detected in samples collected from Well 103.

4.9.7 DISCUSSION

It has been determined that there is a low potential for off-post contaminant migration from this area. This conclusion is based on the concentration of contaminants found, the site geology, and location with respect to the installation boundary.

4.9.8 RECOMMENDATIONS

It is recommended that all six wells within this zone be analyzed according to the schedule already established for the existing AEHA wells. The recommendations presented in the Installation Assessment Report No. 150 that materials deposited at the Active Landfill should be immediately covered on a daily basis is once again emphasized as a low-cost means of housekeeping. This would prevent any immediate migration of contaminated surface runoff into the Central Creek system. The addition of the organic parameters identified during this survey to the list of NPDES analytes is also recommended.

4.10 SUSPECTED TNT BURIAL SITE

4.10.1 LOCATION

The Suspected TNT Burial Site is located near the intersection of Avenues P and Q.

4.10.2 HISTORY AND PRESENT ACTIVITIES

The exact location of this site was not readily determined; however, based on available information, a site directly adjacent to the intersection of Avenues P and Q was designated by USATHAMA as a possible TNT disposal site which might have been in use during the 1940s.

4.10.3 SAMPLING METHODS

The investigation of this site involved solely the use of three shallow 5 ft deep soil borings (Figures 5 and 25). The top 2.5 ft from each boring and the bottom 2.5 ft were analyzed separately for explosives. No wells were installed in this area and no surface water and sediment samples collected for this survey can be directly correlated to this site. Groundwater elevation during the sampling period was observed to be within 3 ft of the ground surface.

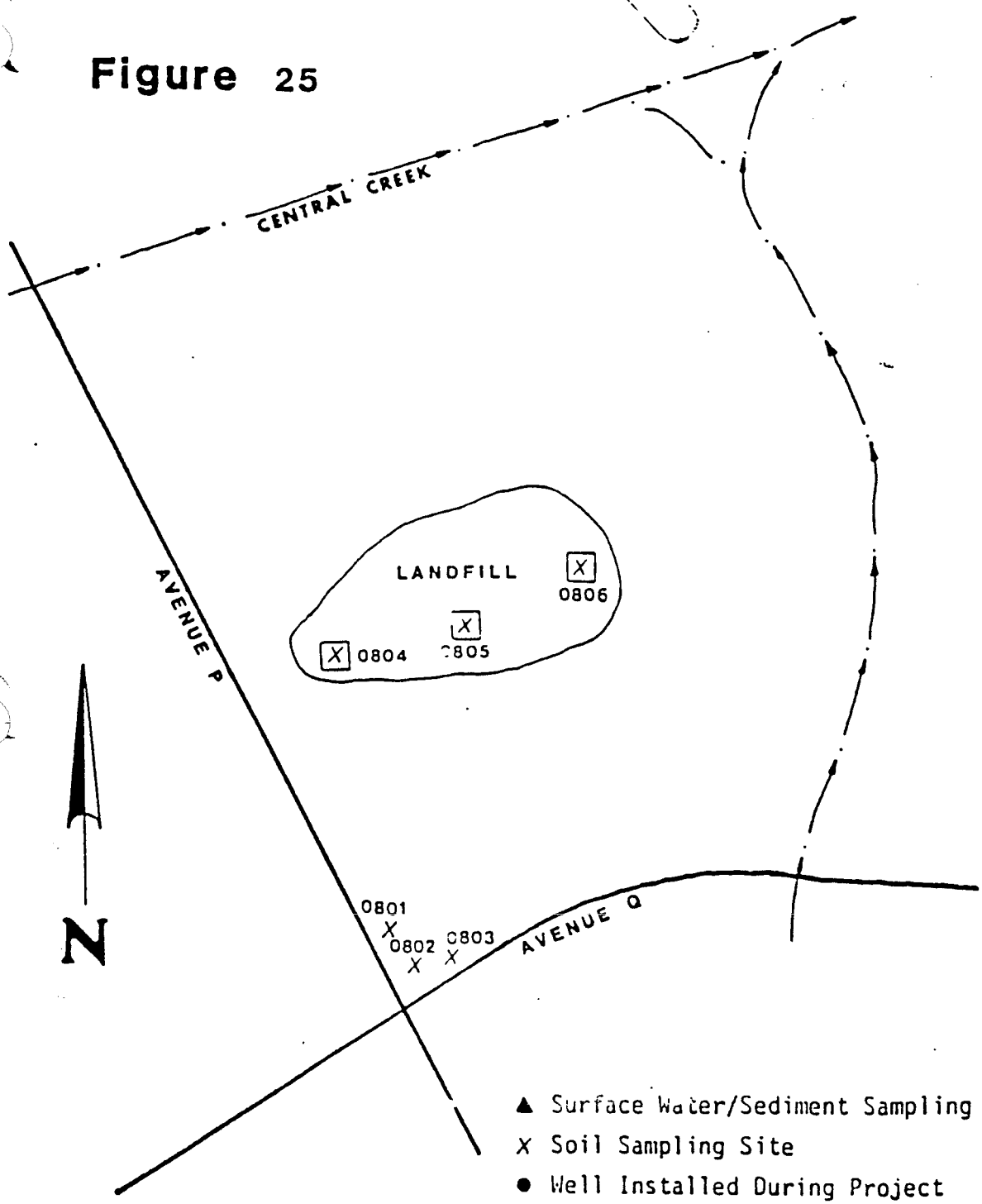
4.10.4 ANALYTICAL RESULTS

Traces of 2,4,6-TNT (1.86 ug/g) were found in the bottom stratum of the sample collected from Station 0801 (Appendix C).

4.10.5 DISCUSSION

The analytical data from this area (limited as it is) does indicate the potential for some minor contamination with TNT. However, the accuracy

Figure 25



Suspected TNT Burial Site

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY

of the soil sample locations are questionable since they were chosen with very limited information as to the exact location of the TNT burial site.

4.10.6 RECOMMENDATIONS

It is difficult to make any statement of fact associated with this area considering the limited sampling and the lack of specific knowledge concerning the particular location suspected for deposition of TNT material. It is recommended that additional soil sampling be performed at this area if LHAAP can identify an exact location of the disposal site in the future.

4.11 STATIC TEST AREA

4.11.1 LOCATION

The Static Test Area is located in the northeast/central section of LHAAP.

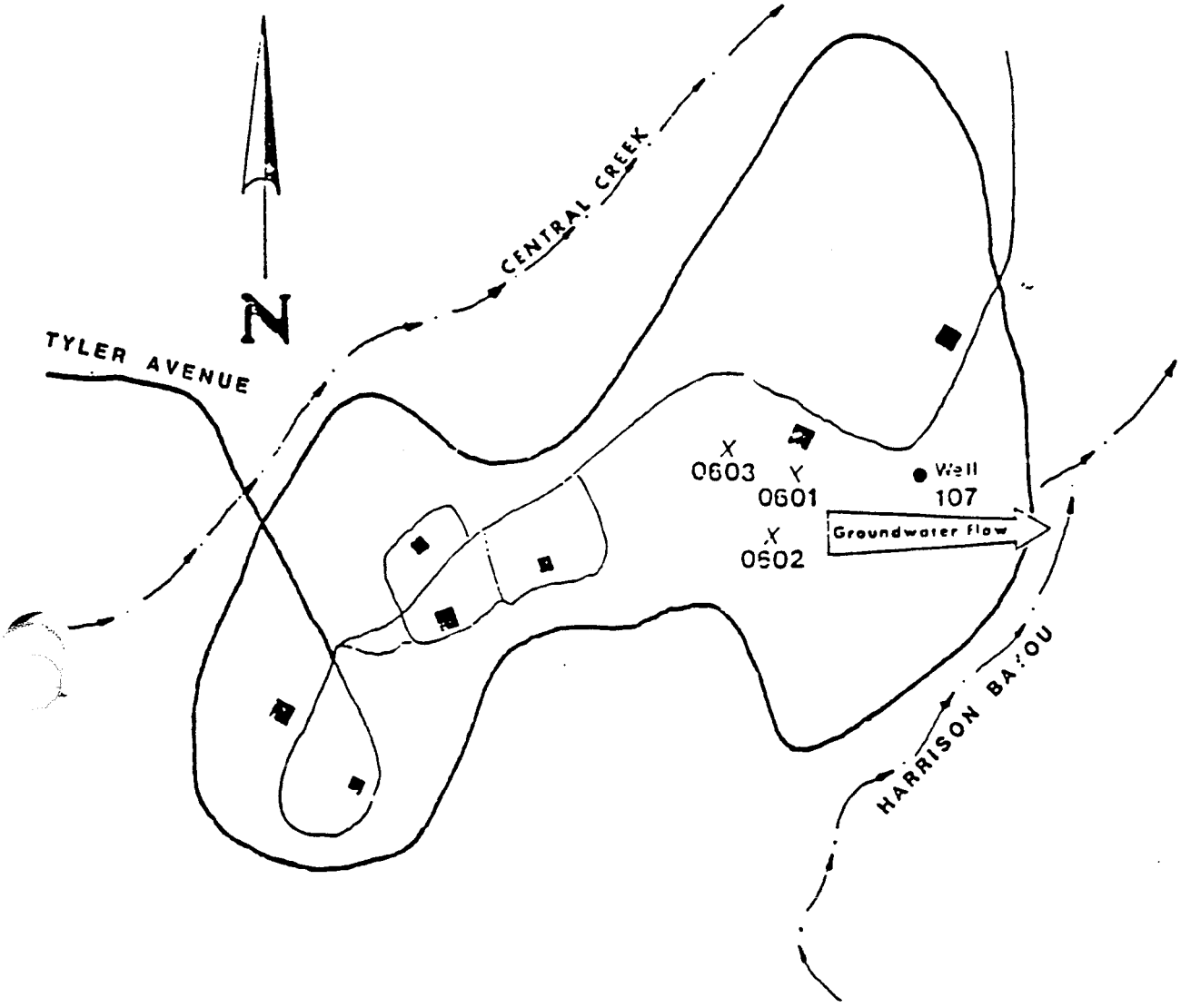
4.11.2 HISTORY AND PRESENT ACTIVITIES

The Static Test Area, which includes the Candle Test Site, is used primarily for testing Nike, Sargent, and most recently, Pershing, rocket motors, illuminating candles, and red phosphorous smoke wedges.

4.11.3 SAMPLING METHODS

A study of the groundwater quality of this area was conducted through the installation of Well 107 and collection and analysis of samples from said well (Figure 26). Soil samples were collected at three sites in the field associated with the rocket motor test firing stand.

Figure 26



▲ Surface Water/Sediment Sampling Site
X Soil Sampling Site
● Well Installed During Project
▲ Existing AEHA Well (*AEHA No.)
▲ Proposed Surface Water/Sediment Sampling Site
● Proposed Well Location
X Proposed Soil Sampling Location

APPROX SCALE 1:4180

Static Test Area

CONTAMINATION SURVEY
LONGHORN ARMY AMMUNITION PLANT
MARSHALL, TEXAS

U. S. ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY

4.11.4 LITHOLOGY AND GEOHYDROLOGY

In Well 107 clay soilds overlie the aquifer of silty sand. This well is located near the floodplain of Harrison Bayou and the ground water flows northeast/east toward the Bayou. The minimum and maximum seepage rates are as follows for the assumed permeabilities and gradients shown: V_{min} = 10.5 ft/yr (i = 0.005, K = 1.4 x 10^{-3} ft/min); V_{max} = 21.0 ft/yr (i = 0.01, K = 1.4 x 10^{-3} ft/min).

4.11.5 SURFACE WATER DRAINAGE

Surface water drainage from the Static Test Area is mainly into the Harrison Bayou drainage system; however, approximately 35 percent of this area drains into Central Creek.

4.11.6 ANALYTICAL RESULTS

The analytical results for groundwater samples from Well 107 indicate that subsurface waters at this site contain anions and metals with concentrations approximating those found for these same substances in other wells throughout LHAAP (Appendix A). As for most of the other monitoring wells, the manganese concentration exceeded the acceptable limit for drinking water established by the Texas Department of Health. Well 107 contained no explosives or other organic compounds, as determined by HPLC, and only 1 ug/l of the compound benzene was detected during the GC/MS screen.

Soil samples from Stations 0601 through 0603 contained concentrations of inorganic components in the same range as those found in background soils and no traces of explosives or organic compounds.

4.11.7 DISCUSSION

The concentrations of the various parameters investigated in soils of the Static Test Area were all consistent with natural background levels from uncontaminated areas throughout LHAAP. Similarly, concentrations of groundwater parameters exhibited no contamination.

4.11.8 RECOMMENDATIONS

Because of the uncontaminated nature of this area, no apparent potential for the migration of contaminants exists and, therefore, no additional action is recommended for this site.

5.0 GENERAL SURFACE WATER QUALITY

A summary of surface water quality for the four main watercourses which traverse LHAAP and the three impoundments sampled during this survey is presented in Appendix B. The results are arranged with the first column presented being for the most upstream station of a particular system (normally water entering the LHAAP boundary), and the remaining columns, going from left to right, for succesively downstream stations on the particular watercourse, until the last station, which for each of the four main watercourses is a point in Caddo Lake adjacent to the mouth of the stream or bayou. Since the waters of Caddo Lake have been determined by the Texas Department of Water Resources (in their April 1981 Texas Surface Water Quality Standards) as being usable for contact recreation, propagation of fish and wildlife, and as a domestic rural water supply, our evaluation of the impact of LHAAP operations on existing surface water quality employs the criteria presented in Tables 6, 7, and 8.

Surface waters for Saunders Branch were evaluated from samples taken at Stations 020 and 021. Several analytes for samples from these two sites showed that significant concentration increases occur as surface water passes through the arsenal. Specifically, aluminum concentrations rose by 129 ug/l (from 226.00 to 355.00 ug/l), and barium levels increased from less than the detection limit at Station 020 to 404 ug/l at Station 021 in Caddo Lake. Chromium, which was initially at 8.20 ug/l at Station 020, increased by a factor of 10 to 83.7 ug/l near the arsenal boundary. This level is in excess of the Texas drinking water quality limit

presented in Table 6. No other analyte concentration increases of significance were determined during this survey for Saunders Branch.

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Six surface water and sediment sampling stations were established along the Harrison Bayou watercourse. Background water was collected at Station 019, which was on the southern edge of the LHAAP boundary. Generally, there was relatively little change in anion and metal composition from the entrance of Harrison Bayou waters into the arsenal until exiting at Station 013.

Station 017 was specifically incorporated into the Harrison Bayou survey to establish contamination levels existing downstream from the Old Landfill. Although surface waters from this site did not demonstrate any unusually high levels of contaminants, trace levels of explosives were found in sediments from this site. It is because of this contamination that we have proposed additional monitoring wells and surveillance on the eastern edge of the Old Landfill between it and Harrison Bayou.

Surface water and sediment sampling Station 015 was established immediately behind the Active Burning Grounds, where a significant barium concentration was determined. Specifically, barium concentration was below the detection limit at all points upstream from Station 015, but at this site the barium concentration was 753 ug/l. Further downstream at the exiting point from Harrison Bayou into Caddo Lake barium was still detectable at 24.00 ug/l.

A review of the data collected from the 5 sites associated with the Central Creek drainage system indicated no significant increase in concentration for any of the analytes investigated from the point of origin at the western installation boundary to the point of exit at Station 012 in Caddo Lake.

Four sampling stations were established along Goose Prairie Creek, the northernmost drainage course associated with LHAAP. There was no significant concentration increase for any analyte investigated over the length of Goose Prairie Creek from Station 003 to Station 001 at the entrance to Caddo Lake. The highest surface water concentrations of explosives were determined for a sample from a branch of Goose Prairie Creek at its point of exit from the Former TNT Production Area (Station 006). Explosives were also detected further downstream in Goose Prairie Creek at Station 002, but no explosives were detected in this stream at its point of exit from LHAAP.

6.0 IMPACT OF SITE CONDITIONS ON RESULTS

Table 13 presents the monthly rainfall data for the Karnack Texas area. As can be seen, the average monthly rainfall for the period December 1980 through March 1983 was 3.99 inches. Table 14 presents daily rainfall data for the sampling week of 17 - 21 November 1982. Since sampling took place during the month of November 1982, which had the greatest rainfall (11.33 inches) of any month in the preceding two years, it is certain that weather conditions prior to and during the sampling effort were abnormal and had a significant impact on the concentrations of contaminant analytes encountered during the survey, especially at the various surface water sampling stations. It can be predicted that surface water contaminants encountered during this survey were found at concentrations lower than would normally be expected at surface water stations under average rainfall conditions. The impact of the possibility that existing contaminants were diluted as a result of abnormal rainfall has been taken into consideration in the ranking of the study areas and in the presentation of recommendations in subsequent sections of this report.

The methods used for collection of soil samples at all study areas also could have a major impact on the analytical results generated during this survey. Specifically, sampling locations at the Inert Burning Grounds and the Suspected TNT Burial Site were not accurately identified in the initial scope of work. Consequently, sampling and analysis conducted for these areas may not be representative of the actual contamination which might exist at these sites. In other areas, such as the Former TNT

Table 13

Rainfall Data for LHAAP

December 1980 - March 1983

Month	Total Monthly Rainfall (inches)	Month	Total Monthly Rainfall (inches)
Dec 1980	1.06	Feb 1982	3.55
Jan 1981	1.11	Mar 1982	2.09
Feb 1981	2.85	Apr 1982	2.20
Mar 1981	3.31	May 1982	4.73
Apr 1981	3.94	Jun 1982	3.72
May 1981	9.41	Jul 1982	0.34
Jun 1981	7.55	Aug 1982	1.17
Jul 1981	1.72	Sep 1982	0.84
Aug 1981	4.32	Oct 1982	4.73
Sep 1981	2.46	Nov 1982	11.33
Oct 1981	7.87	Dec 1982	9.83
Nov 1981	3.71	Jan 1983	0.56
Dec 1981	0.58	Feb 1983	8.65
Jan 1982	4.46	Mar 1983	3.82

From U.S. National Weather Service, Karnack, TX.

Table 14

Rainfall Data for LHAAP

November 1982

Date	Day	Rainfall (inches)	Date	Day	Rainfall (inches)
1	Mon	0.00	16	Tue	0.00
2	Tue	1.07	17	Wed	1.23
3	Wed	1.15	18	Thu	0.08
4	Thu	0.00	19	Fri	2.02
5	Fri	0.00	20	Sat	1.57
6	Sat	0.00	21	Sun	0.32
7	Sun	0.00	22	Mon	0.02
8	Mon	0.00	23	Tue	0.00
9	Tue	0.00	24	Wed	0.42
10	Wed	0.00	25	Thu	0.00
11	Thu	0.17	26	Fri	0.00
12	Fri	0.00	27	Sat	3.04
13	Sat	0.00	28	Sun	0.31
14	Sun	0.00	29	Mon	0.00
15	Mon	0.00	30	Tue	0.00

From U.S. National Weather Service, Karnack, TX.

Production Area, the compositing of subsamples to produce a discrete soil sample definitely had a diluting effect on the ultimate results for these sites. Therefore, it should be noted, when reviewing the analytical results for soil samples, that hot spots of more highly contaminated substrates (sometimes in excess of 5 times the reported concentration) may exist in the areas determined to be contaminated.

For the analytical results generated during this survey to be of optimum value in evaluating the contamination migration potential from LHAAP the existing environmental conditions at the arsenal during the sampling and well installation phases of this project must be taken into consideration. To overlook the impact of these environmental conditions, especially with respect to the environmental contamination associated with the Former TNT Production Area, would be to underestimate the actual conditions existing at LHAAP during most of the year.

7.0 IMPACT OF QUALITY ASSURANCE/QUALITY CONTROL PLAN ON RESULTS

All of the data generated during this survey, unless otherwise denoted below, met the rigid analytical requirements presented in EPS's quality assurance document. Specifically, the results generated during the analytical portion of the survey for explosives, anions, GC/MS parameters, and GC/EC parameters complied with the requirements established in EPS's quality control plan.

Some problems were encountered in the analysis of metals in natural samples of both water and soil collected at LHAAP. All water samples collected during the survey were analyzed for trace metals in four discrete batches (AAL through AAO). The quality control for each batch included a duplicate and two spikes at different levels. The duplicate samples analyzed for all four batches of water had at least two of the 17 metals parameters being tested out-of-specification with respect to precision. Most, if not all, of these deviations were caused by the high concentration of a particular element in natural samples and the impact of numerous dilutions during the analytical process. The quality control for the spikes indicated several conditions under which the analytical process would be considered out-of-control; however, upon closer examination, it was determined that these problems occurred in the parameters for which EPS was certified semi-quantitatively. The body of data which was used in the preparation of the quality control charts for some of these analytes was rather limited. After review by the Field Quality Control Supervisor, it was determined that a re-calculation of the existing quality control tables was in order. Accordingly, all

results of spiked samples in batches of water samples analyzed by atomic absorption spectrophotometry fell within reasonable and expected quality control ranges.

All soil and sediment samples collected at LHAAP were analyzed by EPS for trace metals in three discrete batches of samples which collectively made up 51 analytical lots (AEU through AGS). Here too, several parameters in certain lots were found to be outside the pre-established quality control limits set for this project. On closer examination, these quality control anomalies were all found to be associated with high background levels in the blanks and spiked matrices and the resultant need for several dilutions. For many of the semi-quantitative analytical parameters, an unrealistic accuracy target range, based on limited analytical data generated during the quality assurance certification phase, also constributed to the production of quality control anomalies. The results finally presented in this report do constitute precise and accurate estimates of the detected analytes and the concentrations at which they are present.

8.0 RANKING OF RESULTS FROM STUDY AREAS

The main objective of the LHAAP contamination survey was to determine whether specific contaminant analytes were migrating, or had the potential for migrating, out of the installation. The results for all areas studied during this survey have been presented in Section 4 under the different subsections for each study site. In order to rank the varied findings associated with the different study areas, one against the other, a ranking scheme for existing contamination problems was developed which established four specific classes of action and assigned to each of these classes a numerical point rating system. Within three of these classes further subdivision into various levels was appropriate, and within each of these levels an additional point rating system was developed. A summary of the ranking scheme is presented in Table 15. The ranking scheme has a maxium possible range of raw scores from 0 to 375. Since the highest score calculated for a study area at LHAAP (75) was one fifth of the maximum score, it can be seen that only relatively minor and correctable contamination problems were discovered by this survey. Applying this ranking scheme, and incorporating an environmental adjustment factor to take into consideration the various impacts on the analytical results associated with existing environmental conditions, a numerical rating score and relative ranking of problem areas was produced and is presented in Table 16. It should be noted that the environmental adjustment factor constitutes the expression of a subjective rating system which was based on the field observations of the FQAC and was used to compensate for such conditions as excessive dilution due to rain which would tend to mask or distort the extent of existing contamination

Table 15

Ranking Scheme for Existing Contamination Problem Areas*
Longhorn Army Ammunition Plant

CLASS I. PRIMARY ACTION[1]

Definition: Environmental contaminants are present and have been shown to be migrating beyond the boundaries of LHAAP. (25 points)

Level I-A. Contaminant concentration at LHAAP boundary exceeds limit stated by Texas Department of Health for drinking water, or exceeds other human health criteria limit, and water is being used, or has the potential to be used, for human consumption outside LHAAP. (5 points)

Level I-B. Contaminant concentration at LHAAP boundary exceeds limit stated by Texas Department of Health for drinking water, or exceeds other human health criteria limit, but there is no immediate potential for human consumption. (3 points)

Level I-C. Contaminant concentration at LHAAP boundary exceeds U. S. Environmental Protection Agency aquatic life criteria limit. (2 points)

Level I-D. Contaminant concentration at LHAAP boundary is less than published limits, but it is greater than background concentration and is definitely associated with LHAAP activities. (1 point)

CLASS II. SECONDARY ACTION[2]

Definition: Environmental contaminants are present and have the potential for migrating beyond the boundaries of LHAAP. (8 points)

Level II-A. Groundwater contaminant demonstrated to be migrating towards LHAAP boundary or towards intercepting stream. (4 points)

Level II-B. Surface water contaminant present inside LHAAP; however, concentration is diluted below detection level at LHAAP boundary. (3 points)

Level II-C. Contaminant present inside LHAAP; however, migration pathways and speeds have not been established. (2 points)

Level II-D. Contaminant present inside LHAAP, migration pathways and speeds established, and intersection time with LHAAP boundary estimated as greater than 100 yrs. (1 point)

Table 15
(Continued)

CLASS III. TERTIARY ACTION[3]

Definition: Environmental contaminants are present, but the potential for migration beyond the boundaries of LHAAP is very limited due to low concentrations and/or special location of contaminants. (3 points)

Level III-A. Mobilization of contaminant is possible with minor or medium disturbance to area. (2 points)

Level III-B. Mobilization of contaminant is only possible with extraordinary disturbance to area. (1 point)

CLASS IV. NO ACTION[4]

Definition: Concentrations of contaminants present inside LHAAP are equal to or less than established background concentrations, and migration potential is irrelevant. (0 point)

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* USATHAMA programs concentrate on past activities which have caused environmental contamination at an installation. If current activities are continuing to cause a contamination problem, their action ranking is weighted by applying a larger environmental adjustment factor.

1. Action is needed as soon as possible to correct an existing problem.

2. Action is needed after deliberation and confirmation to overcome a potential problem.

3. No action is needed unless site conditions change, e.g. new construction in area or sale of area to private sector, etc.

4. Preliminary survey indicated no contamination problems, thus no further action is required.

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Overview of the Eleven Study Areas
Longhorn Army Ammunition Plant Contamination Survey

tudy Area	Problems	Cla :s/Points	Category/Points	Environmental Adjustment Factor	Action Ranking Scores Raw*	Relative	Proposed Action
t Burning nds (4.1)	Low Concentrations of explosives in groundwater	II/8	II-C/2	1	16	6**	If operational status changes, additional soil samples, surface water samples, and sediment samples should be analyzed for explosives.
ıer TNT e Disposal ıt (4.2)	None	IV/0	-----	---	0	13**	No actions required.
ıer uction (4.3)	A. Explosives in surface water at Stations 002 and 006.	II/8	II-B/3	2[1]	48	2	A. Sampling at Stations 002, 006, 013 to confirm contamination.
	B. Explosives in soils.						B. Take action to contain or remove contaminated material.
h Test (4.4)	Minor contamination.	III/3	III-B/1	---	3	11**	No actions required.
nd Signal Area(4.5)	None	IV/0	-------	---	0	12**	No actions required
ve Burning nds (4.6)	A. Heavy metals and chlorinated organics in groundwater associated with Rocket Motor Washout Pond.	I/25	I-D/1	3[2]	75	1	A. Stop current industrial discharges; install monitoring wells between pond and Bayou to define extent of problem; start industrial treatment program and groundwater restoration plan.
	B. Groundwater contamination with possible buried explosives and inorganic compounds.	II/8	II-A/4	1	32	4	B. Confirmation and delineation of problem via shallow soil samples; removal and decontamination of buried material.
	C. Surface water contamination associated with burning pits.	II/8	II-B/3	1.8[3]	43	3	C. Analyze pit effluents; construct pit system with recovery sump and include effluent in industrial treatment program.

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Tab
(Cont

Study Area	Problems	Class/Points	Category/Points	Environmental Adjustment Factor	Action Ranking Scores Raw*	Relative	Proposed Action
shing (4.7)	Potential of explosives in soils between this area and Active Burning Grounds.	II/8	II-C/2	1	16	7**	If operational status changes, check further for potential problems with shallow soil samples as for Active Burning Grounds.
dfill (4.8)	A. Minor soil contamination; low explosives concentrations at Bayou Station 017.	II/8	II-B/3	1	24	5	A. Resample surface water and sediment. If necessary to meet other regulatory requirments, install new downgradient monitoring wells.
	B. Suspected area at parking lot has minor groundwater contamination.	II/8	II-D/1	1	8	8	B. Continue monitoring.
ve dfill (4.9)	Minor contamination.	III/3	III-A/2	1	6	9	Continue monitoring existing wells under RCRA program.
ected Burial (4.10)	Low concentrations of explosives.	III/3	III-B/1	1	3	10**	If operational status changes, redefine study area, then resample.
ic Test (4.11)	None	IV/0	-------	---	0	14**	No action required.

Ranking based on abnormal site conditions during sampling (suspected excess dilution due to heavy rain).

Ranking based on continued current use of area for disposal and abnormal site condition due to excess rain prior to surface water sampling and inability to take boundary sample directly in bayou (samples taken in lake).

Ranking based on continued current use of area for open burning.

Action Ranking Score = Class Level Points x Category Level Points x Environmental Adjustment Factor. Environmental Adjustment Factor = 1.0 to 3.0 depending on various modifying environmental factors.

Subjective relative ranking of equally ranked study areas.

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problems. An explanation of the application of the adjustment factor is provided at the bottom of Table 16.

Several of the 11 study areas have one or two specific problems based on the contamination sources revealed in this survey. The area receiving the highest numerical ranking, and subsequently the top relative ranking, was the contamination problem associated with the Rocket Motor Washout Pond in the Active Burning Grounds area. The Former TNT Production Area ranked second overall due to the contamination problems found at that site. Other contamination problems found at the Active Burning Grounds, namely surface water contamination associated with the active burning pits and groundwater contamination associated with possible buried explosives, were ranked 3 and 4 respectively. Leachate associated with the Old Landfill finding its way into Harrison Bayou was ranked fifth, and the Inert Burning Grounds problem associated with low concentrations of explosives in the groundwater was ranked sixth.

An overview of proposed further actions related to the rankings is also presented in Table 16.

9.0 RECOMMENDATIONS

Specific recommendations pertaining to each of the study areas have been presented in the subsections in Section 4 of this report. Following is a list of the major recommendations resulting from this survey.

1. It is recommended that immediate steps be taken to stop placement of industrial discharges into the Rocket Motor Washout Pond (Evaporation Pond).

2. It is recommended that additional confirmation and delineation of the existing groundwater contamination problem associated with the Rocket Motor Washout Pond (Evaporation Pond) be initiated.

3. Additional survey work for the former TNT plant area is recommended. The survey work should include an evaluation of the extent of surface and subsurface soil contamination in this area and an investigation of the concentrations of explosive-related compounds in the surface water runoff from this area under varying meteorological conditions.

4. It is recommended that the current open burning practices at the Active Burning Grounds be modified to allow the capturing of surface runoff to be ultimately treated along with other industrial discharges collected throughout LHAAP.

5. Confirmation and delineation of the existence of explosives and nitrates contamination in the area of the Active Burning Grounds should be undertaken.

6. The scope of the study currently underway by Thiokol Corporation to construct an industrial waste treatment facility should be expanded to include the treatment of waste produced from the open burning pits at the Active Burning Grounds and the waste effluent currently in the Rocket Motor Washout Pond and the contaminated groundwater associated with that area. Additionally, if other industrial compounds are determined to be present at LHAAP during confirmatory work initiated as a result of this report they should also be considered for incorporation into the overall industrial waste treatment program.

7. It is recommended that monitoring wells be installed on the downgradient side of the Old Landfill and that these wells be monitored on a quarterly basis for organic and inorganic constituents, including explosives.

8. It is recommended that in the event of change in operational status or ownership of the Inert Burning Grounds a more detailed investigation be conducted selecting more appropriate soil sampling sites and intermittent surface water and sediment sampling sites adjacent to this area.

10.0 ACKNOWLEDGEMENTS AND PARTICIPATING STAFF

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The following is a list of EPS's staff members who participated in the field and laboratory portions of this project:

Dr. E. Corbin McGriff, Jr., Project Principal
Richard D. Sanfilippo, Project Manager/FQAC
Dave W. Knothe, Explosives and Anions Analytical Group Leader
Dr. Herbert A. Johnston, GC/MS and GC/EC Analytical Group Leader
Sanford E. Warren, Trace Metals, Group Leader
Donalea Dinsmore, Trace Metals, Analytical Chemist
Frank R. Hedges, Anions and Explosives, Analytical Chemist
Tennie K. White, Trace Metals and Organics, Analytical Chemist

Carole A. Fitzgerald, Trace Metals and Organics, Analytical Chemist

Billy Mitchell, Extractions, Chemist

Rob C. Bonney, Field Sampling Crew Chief

Larry M. Jacobs, Senior Geotechnical Engineer

Jeffrey A. Petersohn, Field Geotechnical Engineer

James R. Burkhalter, Chief Technical Editor

Michael E. Henkel, Technical Graphics Presentation

Laura L. Conway, Technical Report Coordinator

Carolyn D. Crossley, Technical Report Coordinator

Voncile W. Dudley, Technical Report Coordinator

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APPENDIX A

LONGHORN ARMY AMMUNITION PLANT

CONTAMINATION SURVEY

SUMMARY OF ANALYTICAL DATA

FOR GROUNDWATER SAMPLES

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Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data For the Groundwater Samples from
Background Wells

Analyte	Southern Boundary Well 110	Southwestern Boundary Well 111	Northwestern Boundary Well 112	Northeastern Boundary Well 108
ANIONS				
Nitrate	<	4350.	675000.*	<
Nitrite	<	<	<	<
Phosphates	<	<	<	<
Sulfate	2407100.*	54500.	951000.*	1378000.
Chloride	1414000.*	41000.	820000.*	2734000.
Fluoride	<	<	2000.	<
Chromate	<	<	<	<
Thiocyanate	<	<	<	<
Cyanide	<	<	<	<
METALS				
Aluminum	180.00	172.00	247.00	147.00
Antimony	<	<	<	<
Barium	32.00	15.60	17.10	31.60
Cadmium	1.44	13.98*	16.27*	15.38
Chromium	10.00	7.00	10.10	12.90
Lead	<	13.80	<	<
Manganese	1570.00*	116.00*	3300.00*	11800.00*
Strontium	3920.00	190.00	80.00	8200.00
Mercury	<	<	<	<
Copper	<	<	<	<
Zinc	<	<	<	<
Arsenic	<	<	<	<
Beryllium	<	<	<	<
Nickel	64.	<	<	234.+
Selenium	28.*	<	<	19.+
Silver	<	<	<	<
Thallium	<	<	<	80.+

Active Burn Rocket wash

00099166

Table
(Contin

Analyte	Southern Boundary Well 110	Southwestern Boundary Well 111	Northwestern Boundary Well 112	Northeastern Boundary Well 108
EXPLOSIVES				
1,3-DNB	<	<	<	<
2,4,6-TNT	<	<	<	<
1,3,5-TNB	<	<	9.00	<
2,4-DNT	<	<	<	<
2,6-DNT	<	<	<	<
Nitrobenzene	<	<	<	<
ORGANICS (GC/MS)				
Benzene	<	<	<	<
Chloroform	<	<	<	<
Trichlorethylene	<	<	<	<
Toluene	ND	ND	ND	24.
Pentachlorophenol	<	<	<	<
o-chlorophenol	<	<	<	<
2,4-dichlorophenol	<	<	<	<
Dibutylphthalate	<	<	<	<
Diethylphthalate	<	<	<	<
Nitrobenzene	<	<	<	<
Dichloromethane	13.+	ND	14.+	<
1,1'-oxybisethane	<	ND	11.	<
Pentane	<	ND	20.	<
Trichloroethene	31.	<	ND	ND
Butyric acid ester with p-hydroxy-benzonitrile	ND	<	ND	ND

00099167

Table A-1
(Continued)

Analyte	Southern Boundary Well 110	Southwestern Boundary Well 111	Northwestern Boundary Well 112	Northeastern Boundary Well 108
ORGANICS (GC/EC)				
p,p'-DDT	<	<	<	<
Dieldrin	<	<	<	<
Alpha-BHC	<	<	<	<
Heptachlor	<	<	<	<
Lindane	<	<	<	<
Toxaphene	<	<	<	<
Aroclor 1016	<	<	<	<
Aroclor 1260	<	<	<	<

All results are expressed in ug/l
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/l
* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)
+ Exceeds limit of Aquatic Life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)
# Exceeds limit recommended by U.S. Army Medical Bioengineerirng Research and Development Laboratory (Table 8)
ND Not Detected

00099168

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Groundwater Samples

	Inert Burning Ground	Former TNT Incinerator	South Test Area		Static Test Area	
Analyte	Well 104	Well 113	Well 131	Well 132	Well 106	Well 107
ANIONS						
Nitrate	3500.		<	<	<	<
Nitrite	<		<	<	<	<
Phosphates	<		<	<	<	<
Sulfate	5710.		216600.	337000.	73300.	54650.
Chloride	8000.		27850000.	10330000.	137000.	14 0.
Fluoride	<		1000.	1000.	<	<
Chromate	<		<	<	<	<
Thiocyanate	<		<	<	<	<
Cyanide	<		<	<	<	<
METALS						
Aluminum	372.00		222.00	232.00	249.00	154.00
Antimony	<		<	<	<	<
Barium	67.00		47.80	53.40	13.30	<
Cadmium	0.97		0.93	9.24	3.92	4.68
Chromium	45.70		<	14.50	8.50	10.30
Lead	34.30		<	16.30	15.10	10.00
Manganese	85.00*		<	1448.00*	652.00*	187.00*
Strontium	96.00		1340.00	2640.00	272.00	260.00
Mercury	<		<	<	<	<
Copper	<		<	<	<	<
Zinc	<		<	<	<	<
Arsenic	21.		<	<	<	<
Beryllium	<		<	<	<	<
Nickel	57.+		53.+	102.+	41.+	<
Selenium	<		<	<	<	<
Silver	<		<	<	<	<
Thallium	<		80.+	100.+	<	<

00099169

Table
(Conti

Analyte	Inert Burning Ground Well 104	Former TNT Incinerator Well 113	South Test Area Well 131	South Test Area Well 132	Static Test Area Well 106	Static Test Area Well 107
EXPLOSIVES						
1,3-DNB	<	<	<	<	<	<
2,4,6-TNT	<	<	<	<	<	<
1,3,5-TNB	9.74	<	<	<	4.38	<
2,4-DNT	<	<	<	<	<	<
2,6-DNT	<	<	<	<	<	<
Nitrobenzene	1.82	<	<	<	<	<
ORGANICS (GC/MS)						
Benzene	<	NA	<	NA	NA	<
Chloroform	<	NA	<	NA	NA	<
Trichlorethylene	<	NA	<	NA	NA	<
Pentachlorophenol	<	NA	<	NA	NA	<
o-chlorophenol	<	NA	<	NA	NA	<
2,4-dichlorophenol	<	NA	<	NA	NA	<
Dibutylphthalate	<	NA	<	NA	NA	<
Diethylphthalate	<	NA	52.	NA	NA	<
Nitrobenzene	<	NA	<	NA	NA	ND
Dichloromethane	<	NA	ND	NA	NA	<
1,1'-bicyclohexyl	ND	NA	<	NA	NA	ND
2-(1,1-dimethyl-ethoxy)-ethanol	ND	NA	24.	NA	NA	ND
Pentane	ND	NA	ND	NA	NA	<
Trichloroethane	ND	NA	ND	NA	NA	<
Trichloromethane	ND	NA	ND	NA	NA	<
Trichloroethene	ND	NA	ND	NA	NA	<

00099170

Table
(Continued)

Analyte	Inert Burning Ground	Former TNT Incinerator	South Test Area		Static Test Area	
	Well 104	Well 113	Well 131	Well 132	Well 106	Well 107
Glycine,N-acetyl-N-(trifluoroacetyl)-methylester	ND	NA	ND	NA	NA	<
1-bromo-2-methoxy-cyclopentane	ND	NA	ND	NA	NA	<
Di-N-butylphthalate	ND	NA	ND	NA	NA	<
;ANICS (GC/EC)						
p,p'-DDT	<	NA	ND	NA	<	NA
Dieldrin	<	NA	ND	NA	<	NA
Alpha-BHC	<	NA	ND	NA	<	NA
Heptachlor	<	NA	ND	NA	<	NA
Lindane	<	NA	ND	NA	<	NA
Toxaphene	<	NA	ND	NA	<	NA
Aroclor 1016	<	NA	ND	NA	<	NA
Aroclor 1260	<	NA	ND	NA	<	NA

All results are expressed in ug/l
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/l
* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)
+ Exceeds limit of Aquatic Life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)
‡ Exceeds limit recommended by U.S. Army Medical Bioengineering Research and Development Laboratory (Table 8)
NA Not analyzed
ND Not detected

00099171

Longhorn Army Ammunition [illegible] Contamination Survey
Summary of Analytical Data f[illegible] Groundwater Samples from
Former TNT Production Area

Analyte	Well 114	Well 115	Well 116	Well 117	Well 118	Well 119
EXPLOSIVES						
1,3-DNB	<	<	<	<	<	<
2,4,6-TNT	<	<	<	<	<	<
1,3,5-TNB	<	<	<	<	<	<
2,4-DNT	<	<	<	<	<	<
2,6-DNT	<	<	<	<	<	<
Nitrobenzene	<	<	<	<	<	<

All results are expressed in ug/l
< Less than established detection limit (Table 5) or, for semiquantative organics <10 ug/l
* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)
+ Exceeds limit of Aquatic Life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)
# Exceeds limit recommended by U.S. Army Medical Bioengineering Research and Development Laboratory (Table 8)

00099172

Tab 4

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Groundwater Samples from
Active Landfill

Analyte	Well 103	Well 121	Well 53	Well 35	Well 34	Well 33
ANIONS						
Nitrate	0910.	<	1120.	<	<	<
Nitrite	<	<	<	<	<	<
Phosphates	<	<	1890.	<	<	<
Sulfate	69820.	63700.	8570.	235000.	153400.	90500.
Chloride	41000.	82000.	319000.*	200000.	2725000.*	227000.
Fluoride	<	<	<	1000.	1000.	1000.
Chromate	<	<	<	<	<	<
Thiocyanate	<	<	<	<	<	<
Cyanide	<	<	<	<	<	<
METALS						
Aluminum	361.00	215.00	22.90	29.80	36.60	132.00
Antimony	<	<	<	<	<	<
Barium	32.00	75.10	<	14.70	20.20	49.70
Cadmium	11.52*	5.91	3.29	1.99	1.26	3.69
Chromium	13.50	27.70	10.40	<	<	8.10
Lead	15.00	15.70	18.90	44.00	54.40*	<
Manganese	169.00*	126.00*	1990.00*	36.00	16.00	193.00*
Strontium	398.00	180.00	1100.00	960.00	1160.00	920.00
Mercury	<	<	<	<	<	<
Copper	<	<	<	<	<	<
Zinc	<	<	<	<	<	<
Arsenic	<	<	<	<	<	<
Beryllium	<	<	<	<	<	<
Nickel	<	<	<	71.+	62.+	59.+
Selenium	<	<	<	<	<	<
Silver	<	<	<	<	<	<
Thallium		<	70.+	110.+	100.+	90.+

00099173

Table A
(Continued)

Analyte	Well 103	Well 121	Well 53	Well 35	Well 34	Well 33
EXPLOSIVES						
1,3-DNB	<	<	<	2.25	<	<
2,4,6-TNT	<	<	<	<	<	<
1,3,5-TNB	<	<	<	<	<	<
2,4-DNT	<	<	<	<	<	<
2,6-DNT	<	<	<	<	<	<
Nitrobenzene	<	<	<	<	<	<
ORGANICS (GC/MS)						
Benzene	<	NA	<	NA	<	<
Chloroform	<	NA	<	NA	<	<
Trichlorethylene	<	NA	<	NA	<	<
Pentachlorophenol	<	NA	<	NA	<	<
o-chlorophenol	<	NA	<	NA	<	<
2,4-dichlorophenol	<	NA	<	NA	<	<
Dibutylphthalate	<	NA	<	NA	<	<
Diethylphthalate	<	NA	<	NA	<	<
Nitrobenzene	<	NA	<	NA	<	<
Dichloromethane	45.	NA	48.	NA	ND	ND
1,1'-bicyclohexyl	ND	NA	ND	NA	11.	ND
Pentane	<	NA	ND	NA	ND	ND

00099174

Table A-4
(Continued)

Analyte	Well 103	Well 121	Well 53	Well 35	Well 34	Well 33
ORGANICS (GC/EC)						
Delta-BHC	ND	<	NA	ND	ND	ND
Endrin	ND	<	NA	ND	ND	ND
DDT	ND	ND	NA	ND	ND	ND
p,p'-DDT	<	<	NA	<	<	<
Dieldrin	<	<	NA	<	<	<
Alpha-BHC	<	<	NA	<	<	<
Heptachlor	<	<	NA	<	<	<
Lindane	<	<	NA	<	<	<
Toxaphene	<	<	NA	<	<	<
Aroclor 1016	<	<	NA	<	<	<
Aroclor 1260	<	<	NA	<	<	<

All results are expressed in ug/l
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/l
* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)
+ Exceeds limit of Aquatic Life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)
# Exceeds limit recommended by U.S. Army Medical Bioengineering Research and Development Laboratory (Table 8)
NA Not analyzed
ND Not detected

00099175

Table A-5

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Groundwater Samples from
Old Landfill

Analyte	Well 122	Well 51	Well 52	Well 37	Well 36
ANIONS					
Nitrate	<	1230.	700.	<	<
Nitrite	<	<	<	<	<
Phosphates	<	<	3930.	<	<
Sulfate	122000.	2110.	1340.	67000.	67000.
Chloride	328000.*	6000.	1050000.*	826000.*	870000.*
Fluoride	1000.	<	2000.	2000.	1000.
Chromate	<	<	<	<	<
Thiocyanate	<	<	<	<	<
Cyanide	<	<	<	<	<
METALS					
Aluminum	362.00	67.70	24.20	227.00	236.00
Antimony	<	<	<	<	<
Barium	217.00	42.40	60.50	95.50	156.60
Cadmium	6.84	<	<	2.97	0.91
Chromium	8.70	55.00*	13.30	7.00	9.00
Lead	<	49.60	<	80.90	<
Manganese	4460.00*	151.00*	127.00*	312.00*	360.00*
Strontium	1112.00	62.00	930.00	1560.00	2920.00
Mercury	<	3.20	<	<	<
Copper	<	<	<	<	<
Zinc	<	<	<	<	<
Arsenic	<	<	<	<	<
Beryllium	<	<	<	<	<
Nickel	<	49.+	34.+	73.+	165.+
Selenium	<	<	<	<	<
Silver	<	<	<	<	<
Thallium	<	<	<	140.+	160.+

00099176

Table
(Cont.)

Analyte	Well 122	Well 51	Well 52	Well 37	Well 36
EXPLOSIVES					
1,3-DNB	<	<	<	<	<
2,4,6-TNT	<	<	<	<	<
1,3,5-TNB	<	6.09	<	<	<
2,4-DNT	<	<	<	<	<
2,6-DNT	<	<	<	<	<
Nitrobenzene	<	<	<	<	<
ORGANICS (GC/MS)					
Benzene	<	<	<	<	NA
Chloroform	<	<	<	<	NA
Trichlorethylene	<	<	<	<	NA
Pentachlorophenol	<	<	<	<	NA
o-chlorophenol	<	<	<	<	NA
2,4-dichlorophenol	<	<	<	<	NA
Dibutylphthalate	<	<	<	<	NA
Diethylphthalate	<	<	<	<	NA
Nitrobenzene	<	<	<	<	NA
Dichloromethane	ND	ND	24.	ND	NA
Trichloromethane	ND	ND	10.	ND	NA
Tetrahydrofuran	ND	ND	10.	ND	NA
Chlorocyclohexane	<	ND	ND	ND	NA
2-(1-1-dimethyl-ethoxy)-ethanol	12.	ND	ND	ND	NA
2-Dimethyl-4-Decene	12.	<	<	<	NA
Phenol	<	ND	ND	ND	NA

00099177

Table A-5
(Continued)

Analyte	Well 122	Well 51	Well 52	Well 37	Well 36
ORGANICS (GC/EC)					
Endosulfan I	<	NA	NA	ND	ND
p,p-DDE	<	NA	NA	ND	ND
Endrin	<	NA	NA	ND	ND
Gamma-BHC	ND	NA	NA	<	ND
Beta-BHC	ND	NA	NA	<	ND
Delta-BHC	<	NA	NA	ND	ND
p,p'-DDT	<	NA	NA	<	<
Dieldrin	<	NA	NA	<	<
Alpha-BHC	<	NA	NA	<	<
Heptachlor	<	NA	NA	<	<
Toxaphene	<	NA	NA	<	<
Aroclor 1016	<	NA	NA	<	<

All results are expressed in ug/l
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/l
* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)
+ Exceeds limit of Aquatic Life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)
‖ Exceeds limit recommended by U.S. Army Medical Bioengineering Research and Development Laboratory (Table 8)
NA Not analyzed
ND Not detected

00099178

000991179

Table 6

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Groundwater Samples

	Flashing Area	Ground Signal Test Area		Rocket Motor Plant
Analyte	Well 130	Well 127	Well 128	Well 105
ANIONS				
Nitrate	<	<	<	24000.*
Nitrite	<	<	<	<
Phosphates	<	<	<	<
Sulfate	152200.	1622000.*	559000.*	1846690.*
Chloride	2348000.*	832000.*	1000000.*	820000.*
Fluoride	1000.	1000.	<	<
Chromate	<	<	<	<
Thiocyanate	<	<	<	<
Cyanide	<	<	<	<
METALS				
Aluminum	125.00	36.90	353.00	377.00
Antimony	<	<	<	<
Barium	105.00	46.00	51.50	32.50
Cadmium	2.22	9.99	4.69	9.72
Chromium	<	11.60	<	11.90
Lead	<	<	<	<
Manganese	<	1860.00*	1086.00*	3340.00*
Strontium	1160.00	3360.00	4120.00	6920.00
Mercury	<	<	<	<
Copper	<	<	<	<
Zinc	<	<	<	<
Arsenic	<	<	<	<
Beryllium	<	<	<	<
Nickel	81.+	157.+	82.+	137.+
Selenium	<	<	<	<
Silver	<	<	<	<
Thallium	100.+	140.+	110.+	60.+

Table 6
(Continued)

Analyte	Flashing Area Well 130	Ground Signal Test Area Well 127	Ground Signal Test Area Well 128	Rocket Motor Plant Well 105
EXPLOSIVES				
1,3-DNB	<	<	<	<
2,4,6-TNT	<	<	<	<
1,3,5-TNB	<	<	<	<
2,4-DNT	<	<	<	<
2,6-DNT	<	<	<	<
Nitrobenzene	<	<	<	<
ORGANICS (GC/MS)				
Benzene	<	NA	<	NA
Chloroform	<	NA	<	NA
Trichlorethylene	<	NA	<	NA
Pentachlorophenol	<	NA	<	NA
o-chlorophenol	<	NA	<	NA
2,4-dichlorophenol	<	NA	<	NA
Dibutylphthalate	<	NA	<	NA
Diethylphthalate	<	NA	<	NA
Nitrobenzene	<	NA	<	NA
Dichloromethane	153.	NA	ND	NA
Tetrahydrofuran	46.	NA	ND	NA
Trichloroethene	<	NA	ND	NA
2-(1,1-dimethyl-ethoxy)-ethanol	<	NA	ND	NA

All results are expressed in ug/l;
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/l
* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)
+ Exceeds limit of Aquatic Life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)
‡ Exceeds limit recommended by U.S. Army Medical Bioengineering Research and Development Laboratory (Table 8)
NA Not analyzed
ND Not detected

00099180

Table [illegible]

Longhorn Army Ammunition [illegible] Contamination Survey
Summary of Analytical Data for Groundwater Samples
Active Burning Grounds

Analyte	Well 126	Well 102	Well 129	Well 120	Well 101	Well 123
ANIONS						
Nitrate	3200.	4900.	99200.*	1170000.*	1680.	20500.*
Nitrite	<	<	<	<	<	<
Phosphates	<	<	<	<	<	<
Sulfate	4000.	9690.	13400.	122000.	36500.	35680.
Chloride	2725000.*	3000.	2592000.*	1375000.*	2000.	24000.
Fluoride	1000.	<	1000.	1000.	<	<
Chromate	<	<	<	<	<	<
Thiocyanate	<	<	<	<	<	<
Cyanide	<	<	<	<	<	<
METALS						
Aluminum	308.00	382.00	272.00	192.00	168.00	161.00
Antimony	<	<	<	<	<	<
Barium	333.00	365.00	431.00	44.20	279.00	58.30
Cadmium	3.54	0.66	9.67	5.44	<	5.87
Chromium	12.10	84.10*	11.40	10.20	56.30*	43.00
Lead	<	67.40*	<	<	93.60*	<
Manganese	1320.00*	476.00*	780.00	604.00*	452.00*	72.00
Strontium	7760.00	444.00	1060.00	412.00	260.00	72.00
Mercury	<	<	<	<	<	<
Copper	<	54.00	<	<	<	<
Zinc	<	270.00	<	<	330.00	<
Arsenic	<	160.00+	<	<	58.+	<
Beryllium	<	<	<	<	<	<
Nickel	114.+	233.+	109.+	64.+	81.+	44.+
Selenium	<	<	<	<	<	<
Silver	<	<	<	<	<	<
Thallium	120.+	<	130.+	ND	ND	ND

00099181

Table A-7
(Continued)

Analyte	Well 126	Well 102	Well 129	Well 120	Well 101	Well 123
EXPLOSIVES						
1,3-DNB	<	5.74	<	<	3.35	<
2,4,6-TNT	<	<	<	<	<	<
1,3,5-TNB	<	53.95	<	<	15.00	<
2,4-DNT	<	<	<	<	<	<
2,6-DNT	<	<	<	<	<	<
Nitrobenzene	<	<	<	<	<	<
ORGANICS (GC/MS)						
Benzene	<	<	<	<	<	NA
Chloroform	<	<	<	<	<	NA
Trichlorethylene	<	<	<	<	<	NA
Pentachlorophenol	<	<	<	<	<	NA
o-chlorophenol	<	<	<	<	<	NA
2,4-dichlorophenol	<	<	<	<	<	NA
Dibutylphthalate	<	<	<	<	<	NA
Diethylphthalate	<	<	73.	<	<	NA
Nitrobenzene	<	<	<	<	<	NA
Dichloromethane	<	ND	ND	108.+	123.+	NA
Trichloromethane	<	ND	ND	ND	ND	NA
1,1'-bicyclohexyl	<	ND	<	ND	ND	NA
2-(1,1-dimethyl-ethoxy)-ethanol	16.	12.	12.	ND	ND	NA
2-dibenzofuranol	<	ND	ND	ND	ND	NA
2,2-dimethyl-4-decane	ND	12.	ND	ND	ND	NA
4-hydroxy-4-methyl-2-pentanone	ND	<	ND	ND	ND	NA
2,2,5,5-tetramethyl-monooxime-3,4-hexanedione	<	ND	ND	ND	ND	NA
Chlorocyclohexane	ND	<	ND	ND	ND	NA
Phenol	ND	<	ND	ND	ND	NA

00099182

Tab[illegible]-7
(Continued)

Analyte	Well 126	Well 1[illegible]2	Well 129	Well 120	Well 101	Well [illegible]23
ORGANICS (GC/MS)						
Di-N-butylphthalate	ND	ND	<	ND	ND	NA
Endrin	ND	ND	ND	ND	ND	NA
Endosulfan I	ND	ND	ND	ND	ND	NA
Pentane	ND	ND	ND	ND	24.	NA
Methylcyclopentane	ND	ND	ND	ND	ND	NA
2-chlorobutane	ND	ND	ND	ND	ND	NA
Tetrachloroethene	ND	ND	ND	ND	<	NA
N-methoxymethanamine	ND	ND	ND	<	ND	NA
Phosphoric acid	ND	ND	ND	18.	ND	NA
Trichloroethene	ND	ND	ND	ND	28.	NA
ORGANICS (GC/EC)						
p,p'-DDT	<	NA	NA	<	<	<
p,p'-DDE	ND	NA	NA	ND	<	<
Dieldrin	<	NA	NA	<	<	<
Endrin	ND	NA	NA	ND	ND	<
Endosulfan I	ND	NA	NA	ND	ND	<
Alpha-BHC	<	NA	NA	<	<	<
Beta-BHC	ND	NA	NA	ND	<	<
Hexane	ND	NA	NA	ND	<	ND
Di-N-Butylphenol	ND	NA	NA	ND	<	ND
Phthalic acid	ND	NA	NA	ND	78.	ND
Heptachlor	<	NA	NA	<	<	<
Lindane	<	NA	NA	<	<	<
Toxaphene	<	NA	NA	<	<	<
Aroclor 1016	<	NA	NA	<	<	<
Aroclor 1260	<	NA	NA	<	<	<

00099183

Ta[illegible]-7
(Con[illegible]nued)

Analyte	Well 124	Well 42	Well 48	Well 38	Well 49	Well 50
ANIONS						
Nitrate	1030.	7780.	<	<	2990.	10910.*
Nitrite	<	<	<	<	<	<
Phosphates	<	<	106000.	<	<	<
Sulfate	4700.	4950.	2900.	6150.	2540.	4270.
Chloride	29000.	981000.*	554000.*	728000.*	580000.*	580000.*
Fluoride	<	<	1000.	1000.	1000.	980.
Chromate	<	<	<	<	<	<
Thiocyanate	<	<	<	<	<	<
Cyanide	<	<	<	<	<	<
METALS						
Aluminum	408.00	40.10	33.70	229.00	98.50	520.00
Antimony	<	<	<	<	<	<
Barium	169.00	624.00	648.00	963.00	86.00	66.70
Cadmium	7.77	4.22	<	6.81	<	7.90
Chromium	11.20	8.20	12.40	7.10	<	9.80
Lead	<	17.40	13.40	8.80	<	<
Manganese	83.00*	460.00*	576.00*	596.00*	468.00*	150.00*
Strontium	72.00	2240.00	1500.00	1520.00	1246.00	900.00
Mercury	<	<	<	<	<	<
Copper	<	<	<	<	<	<
Zinc	<	<	<	<	<	<
Arsenic	<	<	<	<	<	<
Beryllium	<	<	<	<	<	<
Nickel	78.+	38.+	55.+	74.+	<	<
Selenium	<	<	<	<	<	<
Silver	<	<	<	<	<	<
Thallium	<	90.+	75.+	140.+	<	<

00099184

Table A-7
(Continued)

Analyte	Well 124	Well 42	Well 48	Well 38	Well 49	Well 50
EXPLOSIVES						
1,3-DNB	<	<	<	<	<	<
2,4,6-TNT	<	<	<	<	9.58	5.37
1,3,5-TNB	7.31	<	29.47	<	106.38	34.20
2,4-DNT	<	<	<	<	<	<
2,6-DNT	<	<	<	<	<	<
Nitrobenzene	<	<	<	<	<	<
ORGANICS (GC/MS)						
Benzene	<	NA	<	NA	<	<
Chloroform	<	NA	<	NA	<	<
Trichloroethylene	<	NA	<	NA	<	<
Pentachlorophenol	<	NA	<	NA	<	<
o-chlorophenol	<	NA	<	NA	<	<
2,4-dichlorophenol	<	NA	<	NA	<	<
Dibutylphthalate	<	NA	<	NA	<	<
Diethylphthalate	<	NA	<	NA	35.	<
Nitrobenzene	<	NA	<	NA	<	<
1,2-Dichloroethene	ND	NA	56.+	NA	126.+	118.+
1,2-Dichloroethane	ND	NA	ND	NA	800.+	ND
Dichloromethane	<	NA	ND	NA	ND	86.+
Trichloromethane	312.	NA	24.	NA	ND	94.
1,1,2-trichloroethane	ND	NA	72.+	NA	2150.+	2295.+
Trichloroethene	ND	NA	1232.	NA	7200.	ND
Tetrachloroethene	<	NA	72.+	NA	ND	ND
Diethylphthalate	<	NA	<	NA	ND	ND
Di-N-butylphthalate	ND	NA	<	NA	ND	ND
1-ethyl-4-methylbenzene	ND	NA	ND	NA	ND	12.
2-ethyl-1-hexanol	ND	NA	ND	NA	19.	ND
Benzaldehyde	ND	NA	ND	NA	30.	ND
Benzenemethanol	ND	NA	ND	NA	17.	ND
1-phenylethanone	ND	NA	ND	NA	68.	ND
Heptadecane	ND	NA	ND	NA	34.	ND
Methylcyclopentane	24.	NA	ND	NA	ND	ND
Pentane	<	NA	ND	NA	ND	ND

00099185

Table A-7
(Continued)

Analyte	Well 124	Well 42	Well 48	Well 38	Well 49	Well 50
ORGANICS (GC/MS)						
Phosphoric acid, triethylester	ND	NA	ND	NA	84.	ND
o-decyclhydroxyl-amine	ND	NA	ND	NA	52.	ND
1-methylnaphthalene	ND	NA	ND	NA	31.	ND
Dimethylphthalate	ND	NA	ND	NA	52.	ND
2-methyldecane	ND	NA	ND	NA	<	ND
1,2,3-trimethyl-benzene	ND	NA	ND	NA	13.	ND
Pentanoic acid	ND	NA	ND	NA	<	ND
Tetradecanoic acid	ND	NA	ND	NA	<	ND
4-chlorobutanoic acid	ND	NA	ND	NA	<	ND
4-methylphenol	ND	NA	ND	NA	<	ND
Phthalic acid,mono-methylester	ND	NA	ND	NA	<	ND
Benzoic acid	ND	NA	ND	NA	32.	ND
Benzene acetic acid	ND	NA	ND	NA	215.	ND
Tetrahydrofuran	ND	NA	ND	NA	ND	21.
2-methylheptadecane	ND	NA	ND	NA	ND	50.
Naphthalene	ND	NA	ND	NA	ND	22.
2,6,11-trimethyl-dodecane	ND	NA	ND	NA	ND	24.
1-methylnaphthalene	ND	NA	ND	NA	ND	30.
4,6-dimethylundecane	ND	NA	ND	NA	ND	<
2-methyltetradecane	ND	NA	ND	NA	ND	<
10-methyleicosane	ND	NA	ND	NA	ND	<
Trichloroethane	ND	NA	ND	NA	ND	ND
1,2-(1,1-dimethyl-ethoxy)-ethanol	<	NA	ND	NA	ND	ND

00099186

Ta[illegible]-7
(Con[illegible]ued)

Analyte	Well 39	Well 47	Well 40	Well 109	Well 46	Well 41
ANIONS						
Nitrate	<	<	2230.	14000.*	<	118100.*
Nitrite	<	<	<	<	<	<
Phosphates	<	<	<	<	<	<
Sulfate	1790.	1990.	3300.	66000.	4470.	46480.
Chloride	6530000.*	441000.*	264000.	2037000.*	545000.*	711000.
Fluoride	5000.*	<	1000.	1000.	<	<
Chromate	<	<	<	<	<	<
Thiocyanate	<	<	<	<	<	<
Cyanide	<	<	<	<	<	<
METALS						
Aluminum	94.3	36.70	50.90	184.00	68.90	30.50
Antimony	<	<	<	<	<	<
Barium	797.00	639.00	<	869.00	534.00	615.00
Cadmium	3.70	<	0.99	6.70	0.87	2.04
Chromium	<	9.00	11.70	10.40	<	8.90
Lead	<	<	9.30	<	<	<
Manganese	196.00*	684.00*	632.00*	15.00	204.00*	740.00*
Strontium	1220.00	1080.00	1420.00	80.00	1592.00	1820.00
Mercury	<	2.70*	<	<	<	<
Copper	<	<	<	<	<	<
Zinc	<	<	<	<	<	29.00
Arsenic	<	<	<	<	<	<
Beryllium	<	<	<	<	<	<
Nickel	60.+	41.0+	<	<	<	88.+
Selenium	<	<	<	<	<	<
Silver	<	<	<	<	<	<
Thallium	150.+	<	60.+	<	80.+	100.+

00099187

Table A-7
(Continued)

Analyte	Well 39	Well 47	Well 40	Well 109	Well 46	Well 41
EXPLOSIVES						
1,3-DNB	<	<	<	<	<	<
2,4,6-TNT	<	<	<	<	<	<
1,3,5-TNB	1327.00	<	<	<	<	<
2,4-DNT	<	<	<	<	<	<
2,6-DNT	<	<	<	<	<	<
Nitrobenzene	<	<	<	<	<	<
ORGANICS (GC/MS)						
Benzene	<	<	NA	<	<	NA
Chloroform	<	<	NA	<	<	NA
Trichlorethylene/	<	<	NA	<	<	NA
Pentachlorophenol	<	<	NA	<	<	NA
o-chlorophenol	<	<	NA	<	<	NA
2,4-dichlorophenol	<	<	NA	<	<	NA
Dibutylphthalate	<	<	NA	<	<	NA
Diethylphthalate	<	<	NA	<	<	NA
Nitrobenzene	<	<	NA	<	<	NA
Dichloromethane/	95960.+	712.+	NA	12.+	<	NA
1,2-dichloroethene	ND	45.+	NA	<	ND	NA
1,2-dichloroethane	ND	17.	NA	<	ND	NA
1,1,2-trichloroethane	ND	ND	NA	45.	ND	NA
Tetrahydrofuran	ND	ND	NA	<	ND	NA
Pentane	ND	<	NA	ND	ND	NA
Cyclohexane	ND	<	NA	ND	ND	NA
Trichloroethene	ND	190.	NA	29.	ND	NA

00099188

Table A-7
(Continued)

Analyte	Well 39	Well 47	Well 40	Well 109	Well 46	Well 41
ORGANICS (GC/MS)						
1,2,3-trimethyl-benzene	ND	<	NA	ND	ND	NA
2-butylbenzothiazole	ND	<	NA	ND	ND	NA
Diethylphthalate	ND	243.	NA	ND	ND	NA
Di-N-butylphthalate	ND	<	NA	ND	12.	NA
5-methyl-1,2,3,4,-tetrahydronaph-thalene	ND	ND	NA	ND	< ND	NA
3-(2-propynyl)-cyclohexane	ND	<	NA	ND	ND	NA
1,1'-bicyclohexyl	ND	ND	NA	<	ND	NA
2-(1,1'-dimethyl-ethoxy)-ethanol	<	ND	NA	<	ND	NA
Trichloroethane	1120.	ND	NA	ND	ND	NA

00099189

Table A-7
(Continued)

Analyte	Well 45	Well 44	Well 43	Well 125
ANIONS				
Nitrate	16700.*	22360.*	720.	6570.
Nitrite	<	<	<	<
Phosphates	<	<	2460.	<
Sulfate	4470.	1390.	6880.	4000.
Chloride	545000.*	702000.*	1126000.	2345000.*
Fluoride	<	<	1000.	1000.
Chromate	<	<	<	<
Thiocyanate	<	<	<	<
Cyanide	<	<	<	<
METALS				
Aluminum	112.00	19.80	103.70	21.40
Antimony	<	<	<	<
Barium	18.40	32.50	608.00	2210.00*
Cadmium	6.20	7.40	7.20	14.20*
Chromium	9.60	<	8.90	10.50
Lead	<	<	<	<
Manganese	520.00*	140.00*	660.00*	1340.00*
Strontium	1700.00	1320.00	1240.00	7440.00
Mercury	<	<	<	<
Copper	<	<	<	<
Zinc	41.00	44.00	<	122.00
Arsenic	<	<	<	<
Beryllium	<	<	<	<
Nickel	49.+	85.+	39.+	377.+
Selenium	<	<	<	<
Silver	<	<	<	<
Thallium	70.+	80.+	70.+	140.+

00099190

Analyte	Well 45	Well 44	Well 43	Well 125
EXPLOSIVES				
1,3-DNB	<	<	<	<
2,4,6-TNT	<	<	<	<
1,3,5-TNB	<	<	<	2.5B
2,4-DNT	<	<	<	<
2,6-DNT	<	<	<	<
Nitrobenzene	<	<	<	<
ORGANICS (GC/MS)				
Benzene	<	<	<	<
Chloroform	<	<	<	<
Trichlorethylene	<	<	<	<
Pentachlorophenol	<	<	<	<
o-chlorophenol	<	<	<	<
2,4-dichlorophenol	<	<	<	<
Dibutylphthalate	<	<	<	<
Diethylphthalate	16.	200.	330.	<
Nitrobenzene	<	<	<	<
Dichloromethane	206.	251.	30.	<
N-methoxymethamine	ND	ND	ND	ND
Phosphoric acid	ND	ND	ND	ND
1,2-dichloroethane	<	<	12.	<
1,2-dichloroethene	<	ND	<	ND
1,1,2-trichloroethane	ND	ND	<	354.
2,2-dichloroethane	ND	ND	ND	<

00099191

Table A-7
(Continued)

Analyte	Well 45	Well 44	Well 43	Well 125
ORGANICS (GC/MS)				
Toluene	ND	ND	ND	55.
2-bromo-cyclohexanol	ND	ND	<	ND
1,1-bicyclcohexyl	ND	ND	ND	<
1,3 dichlorocyclohexane	ND	ND	ND	18.
1,3 dichloro-2-propanone	ND	ND	ND	38.
Tetrahydro-2-iodomethyl-6-methoxy-2H-pyran-4-ol	ND	ND	ND	<
Pentane	<	<	ND	ND
Trichloroethene	63.	36.	63.	ND
Hexane	ND	<	ND	ND
Tetrahydrofuran	53.	ND	ND	ND
Di-N-butylphthalate	16.	ND	ND	ND
ORGANICS (GC/EC)				
p,p'-DDT	NA	NA	NA	<
Dieldrin	NA	NA	NA	<
Alpha-BHC	NA	NA	NA	<
Heptachlor	NA	NA	NA	<
Lindane	NA	NA	NA	<
Toxaphene	NA	NA	NA	<
Aroclor 1016	NA	NA	NA	<
Aroclor 1260	NA	NA	NA	<

All results are expressed in ug/l
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/l
* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)
+ Exceeds limit of Aquatic Life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)
# Exceeds limit recommended by U.S. Army Medical Bioengineering Research and Development Laboratory (Table 8)
NA Not analyzed
ND Not detected

00099192

APPENDIX B

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION SURVEY
SUMMARY OF ANALYTICAL DATA FROM
SURFACE WATER AND SEDIMENT

TABLE NUMBER	TITLE	PAGE
B-1	Saunders Branch	B-1
B-2	Harrison Bayou	B-3
B-3	Central Creek (Caddo Lake Bayou)	B-8
B-4	Goose Prairie Creek	B-12
B-5	Impoundments	B-16

Table B-1

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Surface Water and Sediments from Saunders Branch

Analyte	Surface Water 020	Sediment 020	Surface Water 021	Sediment 021
ANIONS				
Nitrate	<	<	<	<
Nitrite	<	<	<	<
Phosphates	<	<	<	<
Sulfate	6410.	27.1	9340.	650.2
Chloride	8000.	73.	6000.	24.
Fluoride	<	6.	<	6.
Chromate	<	<	<	<
Thiocyanate	<	<	<	<
Cyanide	<	<	<	<
METALS				
Aluminum	226.00	1486.0	355.00	702.
Antimony	<	<	<	<
Barium	<	42.1	404.00	168.2
Cadmium	<	<	<	<
Chromium	8.20	4.3	83.70*	8.0
Lead	32.50	30.7	<	30.3
Manganese	38.00	139.6	115.00*	143.4
Strontium	44.00	3.1	40.00	20.0
Mercury	<	<	<	<
Copper	<	1.6	<	9.3
Zinc	<	3.0	<	37.2
Arsenic	<	<	<	<
Beryllium	<	<	<	<
Nickel	69.	2.	71.	6.
Selenium	<	<	<	<
Silver	<	<	<	<
Thallium	<	<	<	<

00099194

Tab[illegible]1
(Con[illegible]ed)

Analyte	Surface Water 020	Sediment 020	Surface Water 021	Sediment 021
EXPLOSIVES				
1,3-DNB	<	<	<	<
2,4,6-TNT	<	<	<	<
1,3,5-TNB	<	<	<	<
2,4-DNT	<	<	<	<
2,6-DNT	<	<	<	<
Nitrobenzene	<	<	<	<
ORGANICS (GC/MS)				
Benzene	<	<	NA	NA
Chloroform	<	<	NA	NA
Trichlorethylene	<	<	NA	NA
Pentachlorophenol	<	<	NA	NA
o-chlorophenol	<	<	NA	NA
2,4-dichlorophenol	<	<	NA	NA
Dibutylphthalate	<	<	NA	NA
Diethylphthalate	<	<	NA	NA
Nitrobenzene	<	<	NA	NA
Phenol	12.	ND	NA	NA

00099195

Table B-1
(Continued)

Analyte	Surface Water 020	Sediment 020	Surface Water 021	Sediment 021
ORGANICS (GC/EC)				
p,p'-DDT	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA
Alpha-BHC	NA	NA	NA	NA
Heptachlor	NA	NA	NA	NA
Lindane	NA	NA	NA	NA
Toxaphene	NA	NA	NA	NA
Aroclor 1016	NA	NA	NA	NA
Aroclor 1260	NA	NA	NA	NA

Results for surface water samples are expressed in ug/l; results for sediment samples are expressed in ug/g.

< Less than established limit (Table 5) or, for semiquantitative organics <10 ug/l(g)

* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)

+ Exceeds limit of Aquatic Life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)

‡ Exceeds limit recommended by U.S. Army Medical Bioengineering Research and Development Laboratory (Table 8)

NA Not analyzed

ND Not detected

00099196

Table B-2

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Surface Water and Sediments from
Harrison Bayou

Analyte	Surface Water 019	Sediment 019	Surface Water 018	Sediment 018	Surface Water 017	Sediment 017
ANIONS						
Nitrate	590.	<	680.	<	<	12.25
Nitrite	<	<	<	<	<	<
Phosphates	<	<	<	<	<	<
Sulfate	6410.	92.54	8460.	113.36	8170.	84.92
Chloride	8000.	20.	8000.	7.	8000.	41.
Fluoride	<	<	<	<	<	<
Chromate	<	<	<	<	<	<
Thiocyanate	<	<	<	<	<	<
Cyanide	<	<	<	<	<	<
METALS						
Aluminum	340.00	967.2	407.00	1502.2	337.00	1520.7
Antimony	<	<	<	<	<	<
Barium	<	175.0	<	133.0	<	333.
Cadmium	<	<	<	<	<	<
Chromium	<	11.4	10.50	5.0	8.40	9.1
Lead	8.10	22.6	23.90	11.3	20.10	32.1
Manganese	36.00	239.2	26.00	426.3	49.00	1032.3
Strontium	92.00	26.7	100.00	18.2	80.00	29.6
Mercury	<	<	1.60	<	<	<
Copper	<	8.3	<	3.7	<	12.2
Zinc	<	25.0	<	101.5	<	3.9
Arsenic	<	<	<	<	<	<
Beryllium	<	<	<	<	<	<
Nickel	47.+	6.	59.+	6.	82.+	15.
Selenium	<	<	<	<	<	<
Silver	<	<	<	<	<	<
Thallium	<	<	<	<	40.+	<

000099197

Table
(Cont.)

Analyte	Surface Water 019	Sediment 019	Surface Water 01P	Sediment 01P	Surface Water 017	Sediment 017
EXPLOSIVES						
1,3-DNB	<	<	<	<	<	12.2
2,4,6-TNT	<	<	<	<	<	3.9
1,3,5-TNB	<	<	<	<	<	<
2,4-DNT	<	<	<	<	<	<
2,6-DNT	<	<	<	<	<	15.
Nitrobenzene	<	<	<	<	<	<
ORGANICS (GC/MS)						
Benzene	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<
Trichlorethylene	<	<	<	<	<	<
Pentachlorophenol	<	<	<	<	<	<
o-chlorophenol	<	<	<	<	<	<
2,4-dichlorophenol	<	<	<	<	<	<
Dibutylphthalate	<	<	<	<	<	<
Diethylphthalate	<	<	<	<	<	<
Nitrobenzene	<	<	<	<	<	<
6-bromohexanone	346.	ND	NA	NA	ND	ND
Cyclopentylmethyl-cyclohexane	27.	ND	NA	NA	ND	ND
Phenol	<	ND	NA	NA	10.	ND
1,1-bicyclohexyl	ND	ND	NA	NA	17.	ND
Pentane	ND	ND	NA	NA	<	ND
2-quinolinecarbox-aldehyde-8-hydroxy-oxime	ND	ND	NA	NA	10.	ND

00099198

Table B-2
(Continued)

Analyte	Surface Water 019	Sediment 019	Surface Water 018	Sediment 018	Surface Water 017	Sediment 017
ORGANICS (GC/EC)						
p,p'-DDT	<	NA	NA	NA	<	NA
Dieldrin	<	NA	NA	NA	<	NA
Alpha-BHC	<	NA	NA	NA	<	NA
Heptachlor	<	NA	NA	NA	<	NA
Lindane	<	NA	NA	NA	<	NA
Toxaphene	<	NA	NA	NA	<	NA
Aroclor 1016	<	NA	NA	NA	<	NA
Aroclor 1260	<	NA	NA	NA	<	NA

00099199

Tabl
(Cont' d)

Analyte	Surface Water 016	Sediment 016	Surface Water 015	Sediment 015	Surface Water 013	Sediment 013
ANIONS						
Nitrate	940.	19.62	<	<	<	<
Nitrite	<	<	<	<	<	<
Phosphates	<	<	<	<	1000.	<
Sulfate	10500.	414.40	12860.	64.8	17240.	2970.9
Chloride	4000.	55.	14000.	11.	9000.	87.
Fluoride	<	6.	<	<	<	<
Chromate	<	<	<	<	<	<
Thiocyanate	<	<	<	<	<	<
Cyanide	<	<	<	<	<	<
METALS						
Aluminum	110.00	1281.4	126.00	1347.3	323.00	2154.7
Antimony	<	<	<	<	<	<
Barium	<	122.0	758.00	130.7	24.00	<
Cadmium	<	<	3.90	<	<	<
Chromium	34.50	7.1	7.30	6.7	<	16.5
Lead	<	9.9	<	10.1	<	32.9
Manganese	33.00	73.2	31.00	63.8	85.00	5.9
Strontium	1.60	<	<	<	<	42.2
Mercury	<	<	<	<	<	<
Copper	<	3.4	<	4.2	<	24.8
Zinc	<	18.3	<	18.3	<	105.0
Arsenic	<	<	<	<	<	1.
Beryllium	<	<	<	<	<	<
Nickel	58.+	3.	52.+	4.	37.+	24.+
Selenium	<	<	<	<	<	<
Silver	<	<	<	<	<	<
Thallium	<	<	<	<	<	<

00099200

Table B-2
(Continued)

Analyte	Surface Water Ø16	Sediment Ø16	Surface Water Ø15	Sediment Ø15	Surface Water Ø13	Sediment Ø13
EXPLOSIVES						
1,3-DNB	<	<	<	<	<	<
2,4,6-TNT	<	<	<	<	<	<
1,3,5-TNB	<	<	<	<	<	<
2,4-DNT	<	<	<	<	<	<
2,6-DNT	<	<	<	<	<	<
Nitrobenzene	<	<	<	<	<	<
ORGANICS (GC/MS)						
Benzene	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<
Trichlorethylene	<	<	<	<	<	<
Pentachlorophenol	<	<	<	<	<	<
o-chlorophenol	<	<	<	<	<	<
2,4-dichlorophenol	<	<	<	<	<	<
Dibutylphthalate	<	<	<	<	<	<
Diethylphthalate	<	<	<	<	<	<
Nitrobenzene	<	<	<	<	<	<
Dichloromethane	ND	ND	ND	ND	6.	ND
Phenol	14.	ND	12.	ND	ND	ND
1,1-bicyclohexyl	ND	ND	32.	ND	ND	ND
Tetradecanoic Acid	ND	ND	35.	ND	ND	ND

00099201

Table B-2
(Continued)

Analyte	Surface Water Ø16	Sediment Ø16	Surface Water Ø15	Sediment Ø15	Surface Water Ø13	Sediment Ø13
ORGANICS (GC/EC)						
p,p'-DDT	NA	NA	<	NA	<	<
Dieldrin	NA	NA	<	NA	<	<
Alpha-BHC	NA	NA	<	NA	<	<
Heptachlor	NA	NA	<	NA	<	<
Lindane	NA	NA	<	NA	<	<
Toxaphene	NA	NA	<	NA	<	<
Aroclor 1Ø16	NA	NA	<	NA	<	<
Aroclor 126Ø	NA	NA	<	NA	<	<

Results for surface water samples are expressed in ug/l; results for sediment samples are expressed in ug/g.

< Less than established detection limit (Table 5) or, for semiquantitative organics <1Ø ug/l(g)

* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)

+ Exceeds limit of Aquatic life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)

‖ Exceeds limit recommended by U.S. Army Medical Bioengineering Research and Development Laboratory (Table 8)

NA Not analyzed

ND Not detected

00099202

Tab

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Surface Water and Sediment Samples from
Central Creek (Caddo Lake Bayou)

Analyte	Surface Water 009	Sediment 009	Surface Water 008	Sediment 008	Surface Water 007	Sediment 007
ANIONS						
Nitrate	2080.	<	NA	NA	NA	NA
Nitrite	<	<	NA	NA	NA	NA
Phosphates	<		NA	NA	NA	NA
Sulfate	5100.	129.18	NA	NA	NA	NA
Chloride	8000.	7.	NA	NA	NA	NA
Fluoride	<	<	NA	NA	NA	NA
Chromate	<	<	NA	NA	NA	NA
Thiocyanate	<	<	NA	NA	NA	NA
Cyanide	<	<	NA	NA	NA	NA
METALS						
Aluminum	235.00	1872.2	NA	NA	NA	NA
Antimony	<	<	NA	NA	NA	NA
Barium	54.10	255.0	NA	NA	NA	NA
Cadmium	<	<	NA	NA	NA	NA
Chromium	<	7.8	NA	NA	NA	NA
Lead	<	17.0	NA	NA	NA	NA
Manganese	64.00*	177.1	NA	NA	NA	NA
Strontium	168.00	17.5	NA	NA	NA	NA
Mercury	<	<	NA	NA	NA	NA
Copper	<	3.6	NA	NA	NA	NA
Zinc	32.00	19.2	NA	NA	NA	NA
Arsenic	<	<	NA	NA	NA	NA
Beryllium	<	<	NA	NA	NA	NA
Nickel	37.+	8.	NA	NA	NA	NA
Selenium	<	<	NA	NA	NA	NA
Silver	<	<	NA	NA	NA	NA
Thallium	<	<	NA	NA	NA	NA

00099203

Table
(Continued)

Analyte	Surface Water 009	Sediment 009	Surface Water 008	Sediment 008	Surface Water 007	Sediment 007
EXPLOSIVES						
1,3-DNB	<	<	<	<	<	<
2,4,6-TNT	<	<	<	<	<	<
1,3,5-TNB	<	<	<	<	<	<
2,4-DNT	<	<	<	<	<	<
2,6-DNT	<	<	<	<	<	<
Nitrobenzene	<	<	<	<	<	<
ORGANICS (GC/MS)						
Benzene	<	NA	NA	NA	NA	NA
Chloroform	<	NA	NA	NA	NA	NA
Trichlorethylene	<	NA	NA	NA	NA	NA
Pentachlorophenol	<	<	NA	NA	NA	NA
o-chlorophenol	<	<	NA	NA	NA	NA
2,4-dichlorophenol	<	<	NA	NA	NA	NA
Dibutylphthalate	<	<	NA	NA	NA	NA
Diethylphthalate	<	<	NA	NA	NA	NA
Nitrobenzene	<	<	NA	NA	NA	NA
Trichloroethene	2.	ND	NA	NA	NA	NA
ORGANICS (GC/EC)						
p,p'-DDT	<	NA	NA	NA	NA	NA
Dieldrin	<	NA	NA	NA	NA	NA
Alpha-BHC	<	NA	NA	NA	NA	NA
Heptachlor	<	NA	NA	NA	NA	NA
Lindane	<	NA	NA	NA	NA	NA
Toxaphene	<	NA	NA	NA	NA	NA
Aroclor 1016	<	NA	NA	NA	NA	NA
Aroclor	<	NA	NA	NA	NA	NA

00099204

Table B-3
(Continued)

Analyte	Surface Water 010	Sediment 010	Surface Water 011	Sediment 011	Surface Water 012	Sediment 012
ANIONS						
Nitrate	980.	<	<	<	<	<
Nitrite	<	<	<	<	<	<
Phosphates	<		<		<	
Sulfate	11380.	34.78	19000.	162.17	2075.	405.93
Chloride	3000.	9.	8000.	8.	8000.	120.
Fluoride	<	60.	<	<	<	<
Chromate	<	<	<	<	<	<
Thiocyanate	<	<	<	<	<	<
Cyanide	<	<	<	<	<	<
METALS						
Aluminum	236.00	1408.00	253.00	1134.6	240.00	1229.6
Antimony	<	<	<	<	<	<
Barium	30.00	91.4	28.80	67.1	28.80	<
Cadmium	<	<	<	<	0.37	<
Chromium	<	16.2	<	7.4	<	9.8
Lead	7.60	13.3	11.10	12.3	10.20	42.7
Manganese	28.00	210.7	39.00	120.5	50.00*	151.6
Strontium	60.00	14.8	66.00	13.0	70.00	18.3
Mercury	<	<	<	<	<	<
Copper	<	9.1	<	<	<	11.7
Zinc	<	36.5	41.00	5.0	44.00	53.
Arsenic	<	<	<	28.4	<	<
Beryllium	<	<	<	<	<	1.
Nickel	43.+	8.1	36.+	6.	47.+	14.
Selenium	<	<	<	<	<	<
Silver	<	<	<	<	<	<
Thallium	<	<	<	<	<	<

00099205

Tabl
(Cont d)

Analyte	Surface Water 010	Sediment 010	Surface Water 011	Sediment 011	Surface Water 012	Sediment 012
EXPLOSIVES						
1,3-DNB	<	<	<	<	<	<
2,4,6-TNT	<	<	<	<	<	<
1,3,5-TNB	<	<	<	<	<	<
2,4-DNT	<	<	<	<	<	<
2,6-DNT	<	<	<	<	<	<
Nitrobenzene	<	<	<	<	<	<
ORGANICS (GC/MS)						
Benzene	NA	NA	<	NA	<	NA
Chloroform	NA	NA	<	NA	<	NA
Trichlorethylene	NA	NA	<	NA	<	NA
Pentachlorophenol	NA	NA	<	<	<	<
o-chlorophenol	NA	NA	<	<	<	<
2,4-dichlorophenol	NA	NA	<	<	<	<
Dibutylphthalate	NA	NA	<	<	<	<
Diethylphthalate	NA	NA	<	<	<	<
Nitrobenzene	NA	NA	<	<	<	<
6-bromo-2-hexanone	NA	NA	6000.	ND	ND	ND
Dichloromethane	NA	NA	ND	9.	ND	ND

00099206

Table B-3
(Continued)

Analyte	Surface Water 010	Sediment 010	Surface Water 011	Sediment 011	Surface Water 012	Sediment 012
ORGANICS (GC/EC)						
p,p'-DDT	NA	NA	<	NA	<	<
Dieldrin	NA	NA	<	NA	<	<
Alpha-BHC	NA	NA	<	NA	<	<
Heptachlor	NA	NA	<	NA	<	<
Lindane	NA	NA	<	NA	<	<
Toxaphene	NA	NA	<	NA	<	<
Aroclor 1016	NA	NA	<	NA	<	<
Aroclor 1260	NA	NA	<	NA	<	<

Results for surface water samples are expressed in ug/l; results for sediment samples are expressed in ug/g
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/l(g)
* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)
+ Exceeds limit of Aquatic Life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)
‡ Exceeds limit recommended by U.S. Army Medical Bioengineering Research and Development Laboratory (Table 8)
NA Not analyzed
ND Not detected

00099207

Table B-

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Surface Water and Sediment Samples from
Goose Prairie Creek

Analyte	Surface Water 003	Sediment 003	Surface Water 006	Sediment 006
ANIONS				
Nitrate	NA	NA	NA	NA
Nitrite	NA	NA	NA	NA
Phosphates	NA	NA	NA	NA
Sulfate	NA	NA	NA	NA
Chloride	NA	NA	NA	NA
Fluoride	NA	NA	NA	NA
Chromate	NA	NA	NA	NA
Thiocyanate	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA
METALS				
Aluminum	NA	NA	NA	NA
Antimony	NA	NA	NA	NA
Barium	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA
Chromium	NA	NA	NA	NA
Lead	NA	NA	NA	NA
Manganese	NA	NA	NA	NA
Strontium	NA	NA	NA	NA
Mercury	NA	NA	NA	NA
Copper	NA	NA	NA	NA
Zinc	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA
Nickel	NA	NA	NA	NA
Selenium	NA	NA	NA	NA
Silver	NA	NA	NA	NA
Thallium	NA	NA	NA	NA

00099208

Analyte	Surface Water 003	Sediment 003	Surface Water 006	Sediment 006
EXPLOSIVES				
1,3-DNB	<	<	<	<
2,4,6-TNT	<	<	206.90	0.78
1,3,5-TNB	<	<	<	<
2,4-DNT	<	<	23.40	<
2,6-DNT	<	<	13.65	<
Nitrobenzene	<	<	<	<

00099209

2.4.1.

Tabl
(Cont..ued)

Analyte	Surface Water 001	Sediment 001	Surface Water 002	Sediment 002
ANIONS				
Nitrate	500.	<	4660.	<
Nitrite	<	<	<	<
Phosphates	<	<	<	<
Sulfate	7120.	480.49	21320.	212.89
Chloride	3000.	79.	7630.	34.
Fluoride	<	<	<	<
Chromate	<	<	<	<
Thiocyanate	<	<	<	<
Cyanide	<	<	<	<
METALS				
Aluminum	87.50	643.6	<	2116.4
Antimony	<	<	<	<
Barium	14.70	92.2	<	62.0
Cadmium	<	<	<	<
Chromium	10.40	6.8	8.70	9.3
Lead	11.30	15.5	9.50	14.6
Manganese	43.00	83.8	99.00*	130.0
Strontium	<	11.2	100.*	6.4
Mercury	<	<	<	<
Copper	<	8.2	<	8.0
Zinc	<	36.8	<	42.3
Arsenic	<	<	<	<
Beryllium	<	<	<	<
Nickel	<	7.	73.+	5.
Selenium	<	<	<	<
Silver	<	<	<	<
Thallium	60.+	<	<	<

00099210

Tabl B-4
(Continued)

Analyte	Surface Water 001	Sediment 001	Surface Water 002	Sediment 002
EXPLOSIVES				
1,3-DNB	<	<	<	<
2,4,6-TNT	<	<	2.27	<
1,3,5-TNB	<	<	<	<
2,4-DNT	<	<	<	<
2,6-DNT	<	<	<	<
Nitrobenzene	<	<	6.27	<
ORGANICS (GC/MS)				
Benzene	<	NA	NA	NA
Chloroform	<	NA	NA	NA
Trichlorethylene	<	NA	NA	NA
Pentachlorophenol	<	<	NA	NA
o-chlorophenol	<	<	NA	NA
2,4-dichlorophenol	<	<	NA	NA
Dibutylphthalate	<	<	NA	NA
Diethylphthalate	<	<	NA	NA
Nitrobenzene	<	<	NA	NA
Dichloromethane	<	<	NA	NA
4-methylphenol	<	<	NA	NA

00099211

Analyte	Surface Water 001	Sediment 001	Surface Water 002	Sediment 002
ORGANICS (GC/EC)				
p,p'-DDT	<	<	NA	NA
Dieldrin	<	<	NA	NA
Alpha-BHC	<	<	NA	NA
Gamma-BHC	<	ND	NA	NA
Heptachlor	<	<	NA	NA
Lindane	<	<	NA	NA
Toxaphene	<	<	NA	NA
Aroclor 1016	<	<	NA	NA
Aroclor 1260	<	<	NA	NA

Results for surface water samples are expressed in ug/l; results for sediment samples are expressed in ug/g.
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/l(g)
* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)
+ Exceeds limit of Aquatic Life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)
‡ Exceeds limit recommended by U.S. Army Medical Bioengineering Research and Development Laboratory (Table 8)
NA Not analyzed
ND Not detected

00099212

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Surface Water and Sediment Samples from Impoundments

Analyte	TNT Disposal Plant Foundation Surface Water 004	TNT Pumphouse Pond Surface Water 005	TNT Pumphouse Pond Sediment 005	Rocket Motor Washout Pond Surface Water 014	Rocket Motor Washout Pond Sediment 014
ANIONS					
Nitrate	<	<	<	165500.	<
Nitrite	<	<	<	<	<
Phosphates	<	<		<	
Sulfate	1220.	6410.	152.81	12860.	75.1
Chloride	1000.	8000.	14.	14000.	372.
Fluoride	<	<	5.	66000.	12.
Chromate	<	<	<	<	<
Thiocyanate	<	<	<	<	<
Cyanide	<	<	<	<	<
METALS					
Aluminum	47.70	<	1007.8	251.00	1142.4
Antimony	<	<	<	<	<
Barium	<	127.00	66.7	1620.00*	1031.4
Cadmium	<	<	<	<	<
Chromium	34.20	<	23.4	<	130.6
Lead	52.50	8.80	21.4	8.80	72.2
Manganese	34.00	39.00	85.5	26.00	119.7
Strontium	<	46.00	7.0	14400.00	373.2
Mercury	<	<	<	<	<
Copper	<	<	5.1	<	69.6
Zinc	<	<	29.5	<	3.3
Arsenic	<	<	<	<	<
Beryllium	<	<	<	<	<
Nickel	77.+	62.+	7.	57.+	6.
Selenium	<	<	<	<	<
Silver	<	<	<	<	<
Thallium	<	<	<	<	<

00099213

Table B-5
(Continued)

Analyte	TNT Disposal Plant Foundation Surface Water 004	TNT Pumphouse Pond Surface Water 005	TNT Pumphouse Pond Sediment 005	Rocket Motor Washout Pond Surface Water 014	Rocket Motor Washout Pond Sediment 014
EXPLOSIVES					
1,3-DNB	<	<	<	4.83	<
2,4,6-TNT	<	<	<	<	<
1,3,5-TNB	<	<	<	<	<
2,4-DNT	<	<	<	<	<
2,6-DNT	<	<	<	<	<
Nitrobenzene	<	<	<	<	<
ORGANICS (GC/MS)					
Benzene	NA	NA	NA	<	NA
Chloroform	NA	NA	NA	<	NA
Trichlorethylene	NA	NA	NA	<	NA
Pentachlorophenol	NA	NA	NA	<	<
o-chlorophenol	NA	NA	NA	<	<
2,4-dichlorophenol	NA	NA	NA	<	<
Dibutylphthalate	NA	NA	NA	<	<
Diethylphthalate	NA	NA	NA	<	2.
Nitrobenzene	NA	NA	NA	<	<
Dichloromethane	NA	NA	NA	87.+	ND
2-pentanone	NA	NA	NA	23.	ND
Pentane	NA	NA	NA	<	ND

00099214

Analyte	TNT Disposal Plant Foundation Surface Water 004	TNT Pumphouse Pond Surface Water 005	TNT Pumphouse Pond Sediment 005	Rocket Motor Washout Pond Surface Water 014	Rocket Motor Washout Pond Sediment 014
ORGANICS (GC/MS)					
Trichloroethene	NA	NA	NA	45.	ND
Tetrachloroethene	NA	NA	NA	35.	ND
2-(1,1-dimethyl-ethoxy)-ethanol	NA	NA	NA	46.	ND
Phosphoric acid,tri-ethylester	NA	NA	NA	345.	ND
Phosphoric acid	NA	NA	NA	<	ND
2-nitrophenol	NA	NA	NA	<	ND

Results for surface water samples are expressed in ug/l; results for sediment samples are expressed in ug/g.

< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/l(g)

* Exceeds limit designated by Texas Department of Health Drinking Water Standards (Table 6)

+ Exceeds limit of Aquatic Life Criteria or Human Health Criteria designated by U.S. Environmental Protection Agency (Table 7)

‖ Exceeds limit recommended by U.S. Army Medical Bioengineering Research and Development Laboratory (Table 8)

NA Not analyzed

ND Not detected

00099215

APPENDIX C

LONGHORN ARMY AMMUNITION PLANT
CONTAMINATION SURVEY
SUMMARY OF ANALYTICAL DATA
FOR SOIL SAMPLES

TABLE NUMBER	TITLE	PAGE
C-1	Inert Burning Grounds	C-1
C-2	Former TNT Waste Disposal Plant	C-3
C-3	Former TNT Production Area	C-4
C-4	South Test Area	C-6
C-5	Ground Signal Test Area	C-8
C-6	Static Test Area	C-10
C-7	Old Landfill	C-12
C-8	Suspected TNT Burial Site	C-16

Table

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Soil Samples from
Inert Burning Grounds

Analyte	Soil 101	Soil 102	Soil 103
ANIONS			
Nitrate	<	<	8.33
Nitrite	<	<	<
Phosphates	NA	NA	NA
Sulfate	40.0	29.7	40.48
Chloride	6.	5.	7.
Fluoride	7.	8.	9.
Chromate	<	<	<
Thiocyanate	<	<	<
Cyanide	<	<	<
METALS			
Aluminum	1361.4	1435.	1128.6
Antimony	<	<	<
Barium	102.6	106.6	98.4
Cadmium	<	<	<
Chromium	11.2	12.3	14.4
Lead	29.4	26.1	28.4
Manganese	49.8	99.4	122.1
Strontium	10.1	9.5	9.4
Mercury	<	<	<
Copper	8.1	17.4	15.4
Zinc	25.4	56.4	47.2
Arsenic	<	<	<
Beryllium	<	<	<
Nickel	6.	5.	5.
Selenium	<	<	<
Silver	<	<	<
Thallium	<	<	<

00099217

Table
(Continued)

Analyte	Soil 101	Soil 102	Soil 103
EXPLOSIVES			
1,3-DNB	<	<	<
2,4,6-TNT	<	<	<
1,3,5-TNB	<	<	<
2,4-DNT	<	<	<
2,6-DNT	<	<	<
Nitrobenzene	<	<	<
ORGANICS (GC/MS)			
Benzene	NA	NA	NA
Chloroform	NA	NA	NA
Trichlorethylene	NA	NA	NA
Pentachlorophenol	NA	NA	NA
o-chlorophenol	NA	NA	NA
2,4-dichlorophenol	NA	NA	NA
Dibutylphthalate	NA	NA	NA
Diethylphthalate	NA	NA	NA
Nitrobenzene	NA	NA	NA

All results for soil samples are reported in ug/g
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/g
NA Not analyzed

00099218

Table

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Soil Samples from
Former TNT Waste Disposal Plant

Analyte	Soil 0201	Soil 0202	Soil 0203
EXPLOSIVES			
1,3-DNB	<	<	<
2,4,6-TNT	<	<	<
1,3,5-TNB	<	<	<
2,4-DNT	<	<	<
2,6-DNT	<	<	<
Nitrobenzene	<	<	<

All results for soil samples are reported in ug/g
< Less than established detection limit (Table 5) or, for semiquantative organics <10 ug/g

00099219

Table

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Soil Samples from
Former TNT Production Area

Analyte	Soil 301	Soil 302	Soil 303	Soil 304
EXPLOSIVES				
1,3-DNB	<	<	<	<
2,4,6-TNT	328.76	7645.68	42.44	0.90
1,3,5-TNB	10.35	64.65	<	<
2,4-DNT	<	13.50	<	<
2,6-DNT	<	<	<	<
Nitrobenzene	<	<	<	<

00099220

Tab.
(Cont.ued)

Analyte	Soil 305	Soil 306	Soil 307	Soil 308
EXPLOSIVES				
1,3-DNB	<	<	<	<
2,4,6-TNT	6.03	<	20.77	5588.82
1,3,5-TNB	2.82	<	<	17.55
2,4-DNT	<	<	<	16.80
2,6-DNT	<	<	<	<

All results for soil samples are reported in ug/g
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/g

00099221

Table C-4

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Soil Samples from
South Test Area

Analyte	Soil 401	Soil 402	Soil 403
ANIONS			
Nitrate	15.8	22.3	9.96
Nitrite	<	<	<
Phosphates			
Sulfate	38.2	37.5	33.25
Chloride	<	<	<
Fluoride	6.	5.	6.
Chromate	<	<	<
Thiocyanate	<	<	<
Cyanide	<	<	<
METALS			
Aluminum	1099.8	1386.4	1426.1
Antimony	<	<	<
Barium	87.0	136.6	57.2
Cadmium	<	<	<
Chromium	16.3	12.3	10.3
Lead	25.5	26.3	24.6
Manganese	90.0	199.2	137.5
Strontium	5.0	9.0	4.3
Mercury	<	<	<
Copper	2.7	41.1	2.8
Zinc	8.1	17.4	9.2
Arsenic	<	<	<
Beryllium	<	<	<
Nickel	1.	4.	2.2
Selenium	<	<	<
Silver	<	<	<
Thallium	<	<	<

00099222

Table C-4
(Continued)

Analyte	Soil 401	Soil 402	Soil 0403
EXPLOSIVES			
1,3-DNB	<	<	<
2,4,6-TNT	10.15	4.61	<
1,3,5-TNB	<	<	<
2,4-DNT	<	<	<
2,6-DNT	<	<	<
Nitrobenzene	<	<	<
ORGANICS (GC/MS)			
Benzene	NA	NA	NA
Chloroform	NA	NA	NA
Trichlorethylene	NA	NA	NA
Pentachlorophenol	NA	NA	NA
o-chlorophenol	NA	NA	NA
2,4-dichlorophenol	NA	NA	NA
Dibutylphthalate	NA	NA	NA
Diethylphthalate	NA	NA	NA
Nitrobenzene	NA	NA	NA

All results for soil samples are reported in ug/g
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/g
NA Not analyzed

00099223

Table C-5

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data Soil Samples from
Ground Signal Test Area

Analyte	Soil 501	Soil 502	Soil 503
ANIONS			
Nitrate	8.00	7.41	<
Nitrite	<	<	<
Phosphates			
Sulfate	61.93	28.83	41.04
Chloride	5.	<	<
Fluoride	6.	6.	<
Chromate	<	<	<
Thiocyanate	<	<	<
Cyanide	<	<	<
METALS			
Aluminum	1128.6	1105.5	3.6
Antimony	<	<	<
Barium	227.8	165.8	61.0
Cadmium	<	<	<
Chromium	8.4	9.2	9.4
Lead	27.6	26.5	26.6
Manganese	742.0	499.5	140.8
Strontium	9.4	11.8	3.9
Mercury	<	<	<
Copper	3.3	2.7	2.0
Zinc	6.3	10.1	11.1
Arsenic	<	<	<
Beryllium	<	<	<
Nickel	4.	5.	4.
Selenium	<	<	<
Silver	<	<	<
Thallium	<	<	<

00099224

Table C-5
(Continued)

Analyte	Soil 501	Soil 502	Soil 503
EXPLOSIVES			
1,3-DNB	<	<	<
2,4,6-TNT	<	<	<
1,3,5-TNB	<	<	<
2,4-DNT	<	<	<
2,6-DNT	<	<	<
Nitrobenzene	<	<	<
ORGANICS (GC/MS)			
Benzene	NA	NA	NA
Chloroform	NA	NA	NA
Trichlorethylene	NA	NA	NA
Pentachlorophenol	NA	NA	NA
o-chlorophenol	NA	NA	NA
2,4-dichlorophenol	NA	NA	NA
Dibutylphthalate	NA	NA	NA
Diethylphthalate	NA	NA	NA
Nitrobenzene	NA	NA	NA

All results for soil samples are reported in ug/g
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/g
NA Not analyzed

00099225

Table C-6

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Soil Samples from
Static Test Area

Analyte	Soil 601	Soil 602	Soil 603
ANIONS			
Nitrate	<	14.94	12.23
Nitrite	<	<	<
Phosphates			
Sulfate	70.00	411.05	148.72
Chloride	21.	1224.	89.
Fluoride	11.	<	9.
Chromate	<	<	<
Thiocyanate	<	<	<
Cyanide	<	<	<
METALS			
Aluminum	3.7	1276.7	1185.6
Antimony	<	<	<
Barium	126.2	83.8	106.1
Cadmium	<	<	<
Chromium	9.8	6.0	8.8
Lead	27.0	27.3	27.4
Manganese	141.6	61.2	162.2
Strontium	14.5	6.6	10.8
Mercury	<	<	<
Copper	23.8	4.2	9.4
Zinc	26.9	52.9	49.9
Arsenic	<	<	<
Beryllium	<	<	<
Nickel	8.	3.	7.
Selenium	<	<	<
Silver	<	<	<
Thallium	<	<	<

00099226

Table
(Continued)

Analyte	Soil 601	Soil 602	Soil 603
EXPLOSIVES			
1,3-DNB	<	<	<
2,4,6-TNT	<	<	<
1,3,5-TNB	<	<	<
2,4-DNT	<	<	<
2,6-DNT	<	<	<
Nitrobenzene	<	<	<
ORGANICS (GC/MS)			
Benzene	NA	NA	NA
Chloroform	NA	NA	NA
Trichlorethylene	NA	NA	NA
Pentachlorophenol	NA	NA	NA
o-chlorophenol	NA	NA	NA
2,4-dichlorophenol	NA	NA	NA
Dibutylphthalate	NA	NA	NA
Diethylphthalate	NA	NA	NA
Nitrobenzene	NA	NA	NA

All results for soil samples are reported in ug/g
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/g
NA Not analyzed

00099227

Table C-

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Soil Samples from
Old Landfill

Analyte	Soil 701T	Soil 701B	Soil 702T	Soil 702B	Soil 703T
ANIONS					
Nitrate	<	<	7.09	<	24.46
Nitrite	<	<	<	<	<
Phosphates					
Sulfate	244.02	5[illegible].44	236.80	469.17	1323.09
Chloride	72.	14.	120.	236.	102.
Fluoride	11.	9.	8.	10.	78.
Chromate	<	<	<	<	<
Thiocyanate	<	<	<	<	<
Cyanide	<	<	<	<	<
METALS					
Aluminum	1954.3	1067.00	1461.5	1462.6	604.2
Antimony	<	<	<	<	<
Barium	557.3	290.4	208.5	201.9	991.1
Cadmium	2.3	5.2	<	1.3	<
Chromium	14.5	22.6	9.0	16.5	95.4
Lead	27.2	<	<	<	<
Manganese	121.0	3.1	390.4	352.3	234.3
Strontium	153.0	232.9	25.8	340.9	91.2
Mercury	<	<	<	<	<
Copper	155.1	153.9	5.1	53.6	33.9
Zinc	18.6	472.0	37.8	133.9	169.6
Arsenic	<	<	<	<	<
Beryllium	<	<	<	<	<
Nickel	7.	18.	5.	6.	8.
Selenium	<	<	<	<	<
Silver	<	<	<	<	<
Thallium	<	<	<	5.	5.

00099228

Table C-
(Continued)

Analyte	Soil 701T	Soil 701B	Soil 702T	Soil 702B	Soil 703T
EXPLOSIVES					
1,3-DNB	<	<	<	<	<
2,4,6-TNT	<	<	<	<	<
1,3,5-TNB	<	<	<	<	<
2,4-DNT	<	<	<	<	<
2,6-DNT	<	<	<	<	<
Nitrobenzene	<	<	<	<	<
ORGANICS (GC/MS)					
Benzene	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA
Trichlorethylene	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA
o-chlorophenol	NA	NA	NA	NA	NA
2,4-dichlorophenol	NA	NA	NA	NA	NA
Dibutylphthalate	NA	NA	NA	NA	NA
Diethylphthalate	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA

00099229

Table C
(Continued)

Analyte	Soil 703B	Soil 704T	Soil 704B	Soil 705T	Soil 705B
ANIONS					
Nitrate	<	<	<	5.90	19.43
Nitrite	<	<	<	<	<
Phosphates					
Sulfate	446.25	187.26	239.56	54.46	152.76
Chloride	100.	426.	810.	5.	6.
Fluoride	19.	17.	10.	7.	9.
Chromate	<	<	<	<	<
Thiocyanate	<	<	<	<	<
Cyanide	<	<	<	<	<
METALS					
Aluminum	1162.8	1799.2	2024.6	2230.1	1591.2
Antimony	<	<	<	<	<
Barium	42.6	151.8	178.1	200.5	188.2
Cadmium	<	31.2	15.9	<	2.7
Chromium	47.9	70.7	58.3	10.0	15.6
Lead	<	<	<	12.8	4.9
Manganese	184.9	5.2	2.	325.3	49.9
Strontium	116.3	1071.2	1378.	32.8	137.3
Mercury	<	<	<	<	<
Copper	26.5	66.6	63.6	8.2	86.3
Zinc	132.5	759.2	773.8	53.2	23.9
Arsenic	<	<	<	<	<
Beryllium	<	<	<	<	<
Nickel	9.	10.	10.	5.	7.
Selenium	<	<	<	<	<
Silver	<	<	<	<	<
Thallium	5.	5.	5.	5.	5.

00099230

Table C-7
(Continued)

Analytes	Soil 703B	Soil 704T	Soil 704B	Soil 705T	Soil 705B
EXPLOSIVES					
1,3-DNB	<	<	<	<	<
2,4,6-TNT	<	13.6	<	<	<
1,3,5-TNB	<	<	<	<	<
2,4-DNT	<	<	<	<	<
2,6-DNT	<	<	<	<	<
Nitrobenzene	<	<	<	<	<
ORGANICS (GC/MS)					
Benzene	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA
Trichlorethylene	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA
o-chlorophenol	NA	NA	NA	NA	NA
2,4-dichlorophenol	NA	NA	NA	NA	NA
Dibutylphthalate	NA	NA	NA	NA	NA
Diethylphthalate	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA

All results for soil samples are reported in ug/g
< Less than established detection limit (Table 5) or, for semiquantitative organics <10 ug/g
NA Not analyzed

00099231

Table

Longhorn Army Ammunition Plant Contamination Survey
Summary of Analytical Data for Soil Samples from
Suspected TNT Burial Site

Analyte	Soil 801T	Soil 801B	Soil 802T	Soil 802B	Soil 803T	Soil 803B
EXPLOSIVES						
1,3-DNB	<	<	<	<	<	<
2,4,6-TNT	<	1.86	<	<	<	<
1,3,5-TNB	<	<	<	<	<	<
2,4-DNT	<	<	<	<	<	<
2,6-DNT	<	<	<	<	<	<
Nitrobenzene	<	<	<	<	<	<

All results for soil samples are reported in ug/g
< Less than established detection limit (Table 5) or, for semiquantative organics <10 ug/g

00099232

Table F-1

Well Construction Details and Water Levels

Well No.	Depth to Bottom of Hole* (ft)	Depth to Water First Encountered* (ft)	Bentonite Interval* (ft)	Screened Interval* (ft)	Elevation of Ground Surface (ft)	Elevation of Water Level** (ft)	Elevation of Water Level*** (ft)
101	18.3	2.0	0.0-1.7	3.7-18.7	193.84	No Water	185.59
102	31.5	14.0	2.0-7.0	15.2-30.2	191.34	175.63	173.63
103	25.5	10.0	1.5-6.5	9.8-24.8	192.66	180.20	180.20
104	26.5	9.9	0.0-6.0	10.0-25.0	245.37	240.53	239.53
105	27.0	11.25	2.0-7.0	10.1-25.1	196.32	183.26	185.76
106	25.0	10.0	1.3-6.3	8.5-23.5	174.56	166.91	168.91
107	21.5	5.0	0.0-2.0	4.5-19.5	174.97	169.56	169.06
108	22.0	5.0	0.0-3.0	5.5-20.5	172.85	165.01	166.01
109	35.0	19.5	12.0-17.0	20.0-35.0	193.94	174.72	173.72
110	20.0	5.0	0.0-3.0	5.0-20.0	186.32	179.88	179.38
111	21.5	4.0	0.0-2.5	5.4-20.4	218.00	212.13	211.13
112	22.0	5.0	0.0-3.5	5.2-20.2	248.98	243.05	243.55
113	30.5	14.0	3.0-8.0	14.2-29.2	211.97	201.03	198.53
114	36.0	19.5	6.5-11.5	15.1-30.1	241.13	220.78	219.88
115	33.0	18.0	6.0-11.5	18.5-33.5	221.90	194.38	193.38
116	37.5	22.0	9.0-15.0	22.5-37.5	213.47	193.11	191.21
117	35.5	19.0	5.0-11.0	19.0-34.0	210.92	191.38	191.38
118	36.5	20.0	6.0-11.5	20.4-35.4	216.28	195.12	193.62
119	26.5	14.0	2.0-7.0	10.2-25.2	219.84	200.41	201.16
120	24.0	6.5	0.0-5.0	9.2-24.2	180.15	173.58	171.83
121	34.0	20.0	6.8-12.0	19.1-34.1	199.92	181.52	181.52
122	23.0	7.5	0.0-4.5	8.5-23.5	184.43	176.44	181.19
123	19.5	5.0	0.2-2.5	2.8-17.8	183.55	175.03	174.78
124	26.5	9.0	0.0-5.0	10.2-25.2	183.05	174.74	177.24
125	25.0	10.0	0.0-5.0	10.0-25.0	193.01	173.49	166.99
126	37.0	25.0	2.0-8.5	22.3-37.3	196.21	182.68	172.68
127	26.9	10.0	0.0-5.0	10.1-25.1	185.58	175.45	175.45
128	32.0	15.0	6.0-11.0	17.4-32.4	189.05	173.73	172.73
129	35.5	18.0	8.0-13.0	19.6-34.6	194.06	174.88	175.38
130	23.2	9.0	0.0-3.0	8.2-23.2	174.44	171.71	171.71
131	23.5	7.5	0.0-4.0	8.0-23.0	186.31	177.87	176.87
132	26.0	9.5	0.0-3.0	9.2-24.2	185.51	178.35	178.01

* Depth below ground surface
** Prior to well development between 23 and 25 July 1983.
*** At time of groundwater sample collection.

FINAL
SITE SPECIFIC FINAL REPORT

for the

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

2229 Old Highway 95
Lenoir City, TN 37771

September 2009

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation.

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28 September 2009

U.S. Army Engineering and Support Center
ATTN: Doug Garretson (CEHNC-OE-DC)
4820 University Square
Huntsville, AL 35816-1822

Re: Contract W912DY-04-D-0018, Task Order 0014, MEC Removal Action at the Former Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas

EODT Document Control No.: W1261-4214-37854

Dear Mr. Garretson:

Please find enclosed the Final Site Specific Final Report for the above-referenced project. Additionally, one (1) copy has been forwarded to Ms. Rose Zeiler, LHAAP Site Manager, and seven (7) copies have been sent to Mr. John Lambert, U.S. Army Engineering and Support Center, Tulsa District, for distribution to the regulators. All Performance Work Statement (PWS) requirements were completed to the best of EODT's ability and in accordance with the PWS.

If you have any questions, please don't hesitate to email me at bgentry@eodtl.com or call me at (865) 988-6063.

Sincerely,

EOD TECHNOLOGY, INC.

Brian Gentry
Project Manager

cc: John Lambert, CESWT-EC-ER, USACE Tulsa District
Rose Zeiler, Longhorn Army Ammunition Plant
EODT Project Files

W1261 (37854)/cra

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Appendix E ..... Surveillance Reports
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LIST OF ACRONYMS AND ABBREVIATIONS

BIP	blow-in-place
BRAC	Base Realignment and Closure Commission
CD	Cultural Debris
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLNWR	Caddo Lake National Wildlife Refuge
DDESB	Department of Defense Explosive Safety Board
DID	Data Item Description
DoD	Department of Defense
EE/CA	Engineering Evaluation and Cost Analysis
EODT	EOD Technology, Inc.
ESS	Explosives Safety Submission
FUDS	Formerly Used Defense Sites
HAZWOPER	Hazardous Waste Operations and Emergency Response
HE	high explosive
LHAAP	Longhorn Army Ammunition Plant
LUC	Land Use Control
MD	munitions debris
MEC	Munitions and Explosives of Concern
MPPEH	material potentially presenting an explosive hazard
MRS	Munitions Response Site
NCP	National Contingency Plan
NPL	National Priority Listed
NTCRA	Non Time-critical Removal Action
OB/OD	open burn/open detonation
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
PWS	Performance Work Statement
QA	Quality Assurance
QC	Quality Control
RFD	Remote Firing Device
RRD	range-related Debris
SOP	Standard Operating Procedure
SSHP	Site Safety and Health Plan

SUXOS	Senior UXO Supervisor
TAC	Texas Administrative Code
TNT	trinitrotoluene
TP	Technical Paper
USACE	U.S. Army Corps of Engineers
USAESCH	U.S. Army Engineering and Support Center, Huntsville
USFWS	U.S. Fish and Wildlife Services
UTM	Universal Transverse Mercator
UXO	unexploded ordnance
UXOQCS	UXO QC Specialist
UXOSO	UXO Safety Officer

CHAPTER 1
INTRODUCTION

1.1 GENERAL PROJECT DESCRIPTION AND OBJECTIVE

1.1.1 Description/Authorization

Munitions and Explosives of Concern (MEC) are a safety hazard and may constitute an imminent and substantial endangerment to site personnel and the local populace. This removal action at the former Longhorn Army Ammunition Plant (LHAAP), a National Priority Listed (NPL) site, was authorized by the U.S. Army, Base Realignment and Closure Commission (BRAC) Division, as set forth in the Action Memorandum signed 5 December 2007. The work associated with this Non Time-Critical Removal Action (NTCRA) was performed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 104, the National Contingency Plan (NCP), Sections 300.120 (d) and 300.400 (e), and the Action Memorandum dated August 2007. All MEC encountered during execution of this NTCRA were destroyed on-site, e.g., within the MEC investigation grids. Applicable provisions of Chapter 29 of the Code of Federal Regulations (CFR) 1910.120 applied. All activities involving work in the areas listed in the Performance Work Statement (PWS) potentially containing MEC hazards was conducted in full compliance with: U.S. Army Corps of Engineers (USACE), U.S. Army Engineering and Support Center, Huntsville (USAESCH), Department of the Army, state and local requirements regarding personnel, equipment, and procedures, and Department of Defense (DoD) Standard Operating Procedures (SOPs) and safety regulations.

EOD Technology, Inc. (EODT) conducted removal action services at LHAAP near Karnack, Texas, as a result of an Engineering Evaluation/Cost Analysis (EE/CA) conducted in 2007. Authorization for performance of this work was issued under Task Order 0014 of Contract W912DY-04-D-0018 to EODT by USAESCH on 28 September 2007. Appendix A of this report contains the PWS.

1.1.2 Objectives

The objective of this project was to provide all Land Use Controls (LUCs) and implementation of the removal action alternative recommended with the EE/CA and Action Memorandum for the following areas at the former LHAAP, Formerly Used Defense Site (FUDS) property in accordance with this PWS:

a. LHAAP-001-R (Site 27)
b. LHAAP-003-R (Site 54)

1.1.3 Report Organization

This report has been organized in a manner that is consistent with the requirements of the PWS and Data Item Description (DID) MR-030.

1.2 BACKGROUND INFORMATION

1.2.1 Site Location

The former LHAAP is located in east-central Texas in the northeast corner of Harrison County, approximately 14 miles northeast of Marshall, Texas, and approximately 40 miles west of Shreveport, Louisiana, as shown in Figure 1-1. The former LHAAP property occupies approximately 8,493 acres.

1.2.2 Current Site Use

The land use of the property still under U.S. Army ownership is as a closed ammunition plant, surrounded by the Caddo Lake National Wildlife Refuge (CLNWR). The future anticipated use will be as part of the CLNWR and that use will include hunting, fishing, wildlife observation, wildlife photography, wildlife education and wildlife interpretation, all non-intrusive activities.

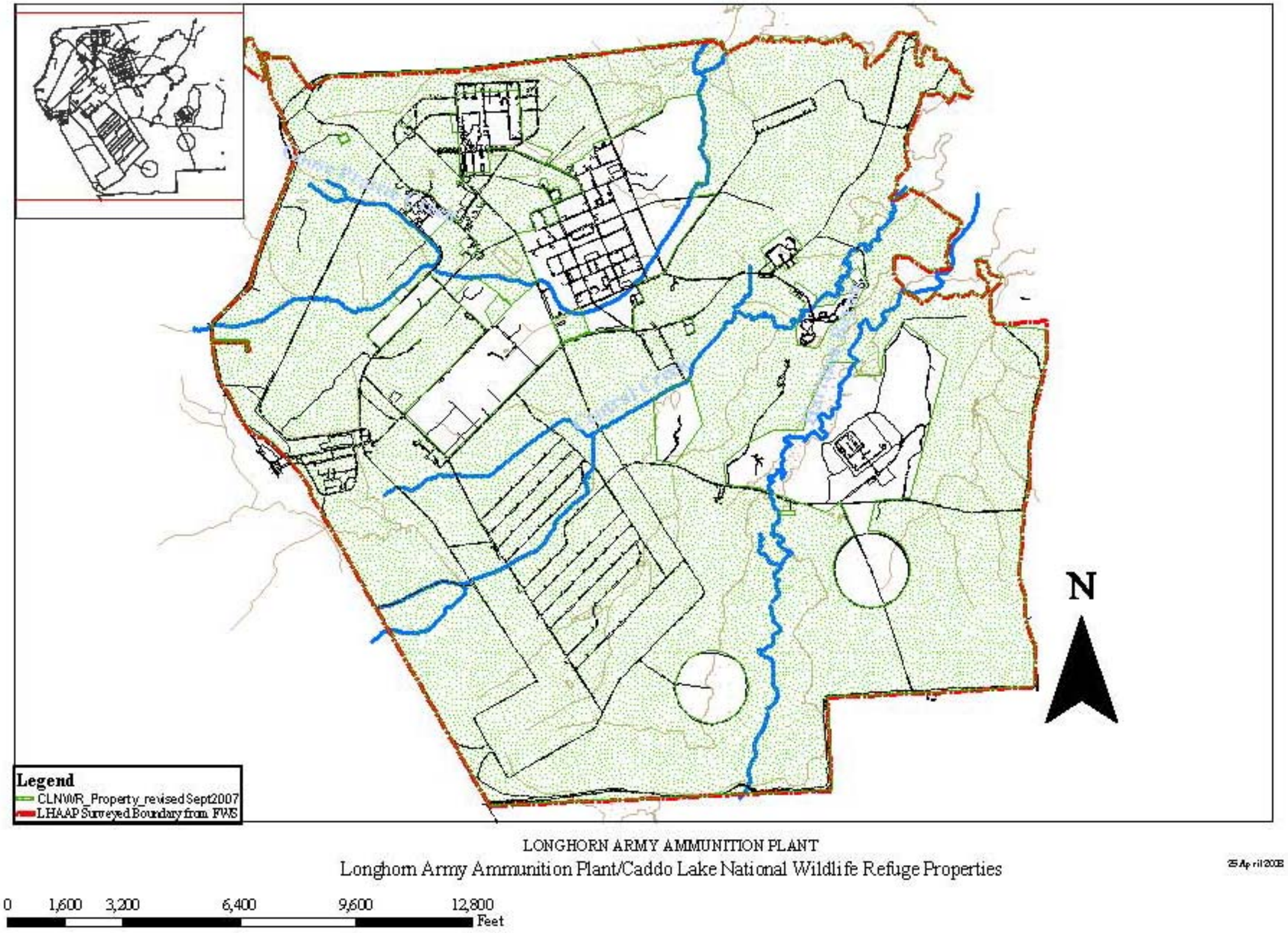
1.3 SITE HISTORY

1.3.1 The former LHAAP was established in October 1942 with the primary mission of producing trinitrotoluene (TNT) flake. TNT production continued until August 1945, when the plant was placed on standby status. Pyrotechnic ammunition (e.g., photoflash bombs, simulators, hand signals, and tracer ammunition) were later manufactured at LHAAP from 1952 until 1956.

1.3.2 A rocket motor facility began operation at LHAAP in November 1955. Production of rocket motors continued to be the primary mission of LHAAP until 1965, when the production of pyrotechnic and illuminating ammunition was reestablished. Through 1994, operations consisted of producing pyrotechnic and propellant mixtures; loading, assembling, and packing activities; accommodating receipt and shipment of containerized cargo; and maintenance or layaway of standby facilities and equipment as they applied to mobilization planning.

1.3.3 LHAAP was declared excess to the Department of the Army's needs and placed in inactive status in 1997. An initial 5,032 acres were transferred to U.S. Fish and Wildlife Services (USFWS) in May 2004. Subsequent transfers increased the total acreage transferred to USFWS to almost 7,000 acres. The Department of the Army holds the remaining property, including Sites 27 and 54, while environmental restoration takes place in preparation for transfer to USFWS.

FIGURE 1-1: FORMER LHAAP SITE LOCATION MAP



1.3.4 A MEC EE/CA performed by CAPE Environmental in 2007 revealed that Site 27, identified as the South Test Area/Bomb Test Area, contained 21 MEC Items (M112 and M123 photoflash cartridges, with 19 discovered in an area suspected of the use of open burning/open detonation [OB/OD] activities although never permitted as an OB/OD Unit; no high explosive [HE] or fuzed military munitions were discovered). Munitions debris (MD) items (remnants of munitions containing no explosive hazards) in Area 27, other than expended photoflash items of the aforementioned MEC types specified, also included numerous munition fragments, some specifically identified as bomb fragments. The EE/CA also revealed Site 54, identified as the Ground Signal Test Area, to contain MEC items (60mm, 81mm, and 4.2″ illumination mortars and mortar candles and CDU 10 components); no HE or fuzed military munitions were discovered. MD items in Area 54, other than expended items of the aforementioned MEC types specified, also included expended 40mm flare, ground illumination signal, and smoke rifle grenade debris.

1.4 STATEMENT OF PROBABILITY OF SOLUTION

The MEC Removal Action at the former LHAAP Site 27 and Site 54 was completed by EODT. The objective of this project was to provide all Land Use Controls (LUCs) and implementation of the removal action alternative recommended with the EE/CA and Action Memorandum for the following areas at the former LHAAP, Formerly Used Defense Site (FUDS) property in accordance with this PWS:

a. LHAAP-001-R (Site 27)
b. LHAAP-003-R (Site 54)

EODT is confident that all potentially hazardous MEC and MD were removed to the depth of detection of the geophysical instruments from the areas (i.e., LHAAP-001-R [Site 27] and LHAAP-003-R [Site 54]) where clearance activities were completed during this removal action.

1.5 TECHNICAL APPROACH

To perform the removal action, EODT performed vegetation removal, grid emplacement (200 ft × 200 ft), grid surface clearance activities and grid mag and dig clearance activities. EODT's professional surveyors subdivided the areas into 200 ft × 200 ft grids. Each grid had a unique grid identification number assigned to it and was identified by the southwest corner stake. EODT established 5-ft sweep lanes within each grid and performed the surface clearance and mag and dig clearance operations. EODT used the handheld Schonstedt GA-52Cx magnetometer, the Valon VMH3CS, and White's XLT metal detectors to detect ferrous and non-ferrous metal anomalies, then used hand tools and mechanical equipment (e.g., hydraulic excavator) to investigate those anomalies. The clearance was followed by, at a minimum of, a

10 percent inspection for quality control (QC) verification of each grid using the Schonstedt GA-52Cx and White's XLT metal detector. All work was performed in accordance with the approved Work Plan, government coordination, and the approved Explosives Safety Submission (ESS).

1.5.1 Technical Approach for Land Use Controls

In order to ensure risks to public health and safety are minimized, a multi-layered approach to LUCs was incorporated. The multi-layer approach is defined as deed restrictions, institutional controls (signage), safety information (pamphlets and safety video), maintenance and monitoring. These LUCs were used as a means of informing the public and protecting property owner by alerting them to the potential MEC hazards present at a site by:

- Identifying and defining the areas that could possibly contain MEC based on the results of the MEC EE/CA performed by CAPE Environmental in 2007.
- Insuring all possible personnel within the site boundaries are made aware of possible safety issues concerning MEC.
- Restricting activities that could result in explosive safety risks.

The following LUCs have been implemented consistent with recommendations of the EE/CA and Action Memorandum:

- Restriction against intrusive activities, including digging.
  This restriction will be recorded in the Harrison County Clerk's Office, with the survey, map, and language as required by the Texas Administrative Code (TAC) Citation 335.569, Appendix III once regulatory concurrence has been obtained.
- Signage at perimeters of Munitions Response Sites (MRSs).
  Signs have been installed at the perimeter of the MRSs and are visible from one to the next, with a maximum spacing of 100 feet, and serve as the physical demarcation of the controlled areas. The signs include warning of the potential presence of UXO and state the restriction against intrusive activities.
- Education program for future refuge visitors, staff, and volunteers.
  This includes informational pamphlets and safety video warning of the potential presence of UXO and presenting examples of MEC that were or may be found at the sites.

CHAPTER 2
DISCUSSION

2.1 GENERAL

2.1.1 Prior to commencement of clearance activities an advanced party arrived at the former LHAAP, Karnack, Texas to establish the site infrastructure, off load and organize equipment and supplies, start brush clearance and civil survey operations.

2.1.2 EODT utilized a local staffing agency (Onsite) to provide local hires to work as unexploded ordnance (UXO) sweep personnel for the surface clearance portion of field operations. EODT followed Department of Defense Explosive Safety Board (DDESB) Technical Paper (TP)-18 to ensure that all personnel received a 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) certification, Occupational Safety and Health Administration (OSHA) physical, 3 day site-specific MEC awareness/identification training and equipment training/certification prior to being allowed to work as a UXO sweeper. EODT employed 10 local UXO sweepers, three on each team and one for standby.

2.1.3 The UXO field teams mobilized to the site on 10 August 2008. On 11 August 2008 all field personnel, including local hire sweep personnel were on site and undergoing general and site-specific training to include site indoctrination, safety briefings, and training on the proper use of personal protective equipment (PPE) as instructed by the Site Safety and Health Plan (SSHP). All new and local hire personnel also underwent classroom training and practical field training on all aspects of project to include but not limited to: EODT Policies and Procedures (as applicable), Work Practices and Procedures, Safety Policies and Procedures, Line of Authority, Emergency Procedures, Ordnance Locators, Ordnance Recognition and Hazards, Environmental Hazards and Precautions, Vehicle Safety and Policies, QC, Production Requirements, Site Emergency Recall and Action Plan, Management and Personnel Responsibilities, Ethics, Equal Opportunity, and Sexual Harassment Policy.

2.1.4 Clearance activities began 18 August 2008 and were completed on 21 November 2008. Operational photos are located in Appendix C.

2.2 SURVEYING

2.2.1 A Texas Licensed Professional Land Surveyor (Collins Surveying & Mapping, INC.) established work area boundaries for Site 54, Site 27, and Site 27 OB/OD. All boundary points were marked with wooden stakes and made visible by spray painting and flagging tape. All survey work was carried out using the Universal Transverse Mercator (UTM) system, Zone 13N,

WGS84. The actual acreage investigated for this project was 140.57 acres split into three areas: Site 27 encompassed 61.07 acres to be surface cleared of MEC, Site 27 OB/OD encompassed 13.77 acres to be intrusively cleared of MEC, and Site 54 encompassed 79.50 acres to be surface cleared of MEC,. Refer to Appendix B for site maps of each area investigated.

2.2.2 EODT's professional surveyors subdivided each of these three areas into 200 ft × 200 ft grids. All work was carried out using the NAD 83 UTM. A unique grid identification number was established and marked on each wooden stake located at the southwest corner of each grid. Each stake was made visible by spray painting and flagging tape.

2.3 BRUSH CLEARING

A MEC surface reconnaissance was conducted prior to brush clearing activities. Surveyed stakes were used to mark the boundaries of areas for clearance. EODT subcontractor, Envirogrind, accomplished brush clearing utilizing hand tools and heavy equipment. One inch and below brush was removed to allow for clearance operations to be conducted.

2.4 SURAFCE CLEARANCE OPERATIONS (SITES 27 AND 54)

Prior to conducting the surface clearance activities the EODT UXO Quality Control Specialist (UXOQCS) placed a Test Strip that consisted of seed items placed on the surface but not visible to the naked eye and required that all clearance personnel find 100% of the items. This allowed the UXOQCS to ensure that the clearance personnel were proficient with the equipment being used for the surface clearance and that the equipment being used was working properly.

2.4.1 Three MEC clearance teams conducted a magnetometer-assisted surface clearance, using White's XLT metal detectors, of Sites 27 and 54 by walking in grid lanes (not exceeding 5 ft in width) established within the 200 ft × 200 ft grids, and removed and/or disposed of all surface MEC regardless of size, and material potentially presenting an explosive hazard (MPPEH), MD, cultural debris, and range-related debris (RRD) equal to or greater than 40mm in diameter (width). The surface clearance teams consisted of one UXO Tech III, two UXO Tech IIs, one UXO Tech I, and three UXO sweep personnel (local hires). During the surface clearance all anomalies identified by the metal detectors were investigated, and if that anomaly was protruding from the surface, that anomaly was investigated and removed. All MEC/MPPEH that could not be safely moved was destroyed in place. Items deemed safe to move were moved to a consolidation area within the MRS for destruction.

2.4.2 The surface clearance operations for Sites 27 and 54 removed 102 MEC/MPPEH items and one inert item. Inert is defined as an item never having contained explosive material or,

once demolition has been performed on the item, that no explosive material remains. Within Site 54 there were 12 MEC/MPPEH items and one inert item located and destroyed. Within Site 27 there were 90 MEC/MPPEH items located and destroyed. See Appendix B Figures B-4 and B-5 for MEC/MPPEH locations for the surface clearance operation.

2.4.3 During the course of the surface clearance operations, the surface clearance teams removed enormous amounts of MD and cultural debris. At Site 54 the surface clearance teams removed 6,880 pounds of MD and 5,981 pounds of cultural debris. For Site 27 (the surface clearance portion) the EODT surface clearance teams removed 6,742 pounds of MD and 154 pounds of cultural debris. See Appendix F for the Grid Tracking Log and Appendix L for the individual grid sheets showing the amounts of MD and cultural debris that was removed from each grid.

2.4.4 During the course of the surface clearance operations for Sites 27 and 54, EODT surface clearance teams identified Cultural Debris (CD). This included large CD, such as concrete foundations, metal fence posts, power poles, and sandbag structures. The surface clearance teams investigated these areas visually insuring that no MEC/MPPEH/MD were present and left the CD in place. The EODT UXOQCS and USAESCH onsite safety representative were notified and shown the CD locations that were going to be left in place. EODT did remove over 7,000 pounds of small CD (i.e., barbed wire, scrap metal, etc.).

2.5 INTRUSIVE OPERATIONS (SITE 27 OB/OD)

Prior to conducting the subsurface clearance activities the EODT UXOQCS placed a Test Strip that consisted of seed items placed below the surface. The seed items were buried at various depths and it was required that all clearance personnel find 100% of the items. This allowed the UXOQCS to ensure that the clearance personnel were proficient with the equipment being used for the subsurface clearance and that the equipment being used was working properly. No UXO sweep personnel were used for this clearance.

2.5.1 During the course of the project, it was identified by the EODT Senior UXO Specialist (SUXOS), UXOQCS, and the USAESCH on site safety representative that the original OB/OD boundaries did not encompass the entire footprint of the OB/OD. The OB/OD boundary was identified on the ground and the boundaries were refined using the criteria of geophysical anomaly data and surface scarring indicative of OB/OD activities. The adjusted OB/OD acreage was increased from 11.02 acres to 13.77 acres. The new boundaries were then redefined by the state licensed surveyor (Collins Surveying & Mapping, Inc.) and the intrusive operations were conducted within the newly defined boundary.

2.5.2 The MEC clearance team conducted intrusive clearance operations within the OB/OD using handheld magnetometers to locate and investigate all ferrous and non-ferrous metal anomalies and removed and/or disposed of all surface and subsurface MEC regardless of size, and MPPEH, MD, cultural debris, and RRD equal to or greater than 40mm in diameter (width). The MEC clearance team consisted of one UXO Tech III, 3 UXO Tech II's and 3 UXO Tech I's. The Vallon VMH3CS and Whites XLT metal detectors were used to detect surface and subsurface anomalies. Schonstedt GA-52Cx magnetometers were used to verify deeper ferrous anomalies that were detected. As each anomaly was located, the UXO personnel excavated the anomaly until the item was located, identified, and a magnetic signature was no longer detectable at the anomaly location. Excavations were conducted with hand tools, such as long handled shovels or pick axes, or earth moving equipment, such as a small excavator. All MEC/MPPEH encountered were explosively destroyed to verify that no residual explosive hazard existed. See Table 2-1 in Section 2.8 for items that were explosively investigated.

2.5.3 The intrusive clearance for the OB/OD area within Site 27 investigated and explosively investigated 294 MEC/MPPEH items and 14 inert items. See Appendix B Figures B-4 and B-5 for MEC/MPPEH locations within the OB/OD.

2.5.4 The intrusive clearance for the OB/OD area within Site 27 investigated 46,242 anomalies that produced over 15,397 pounds of MD and 1,722 pounds of cultural debris. See Appendix F for the Grid Tracking Log and Appendix L for the individual grid sheets showing the amounts of MD and cultural debris that was removed from each grid.

2.5.5 During the intrusive clearance for the OB/OD area within Site 27 the MEC clearance team discovered a previous demolition site in grid F06 that when investigated uncovered 13 expended (inert) M485, 155mm illumination projectiles and numerous expended illumination canisters. The previous demolition site was investigated 20 feet wide and 4 feet deep. Once the MEC clearance team reached a depth of 4 feet, intrusive investigations were ceased. The UXOQCS and USAESCH OE safety representative were contacted and shown the area. The UXOQCS and UXO Clearance Team investigated the area beyond four (4) feet and determined that all the large anomalies had been removed; the USAESCH OE safety representative determined that no further investigation was required. The coordinates of the previous demolition pit are x67' and y10' for the center of the pit. See Appendix B, Figure B-8 for the detailed drawing of the demolition site.

2.6 DEMOLITION OPERATIONS

During the course for clearance operations EODT performed ten demolition events (explosive investigations). Non-electric demolition procedures in conjunction with the Remote Firing Device (RFD) were employed to maintain positive control during demolition operations. EODT communicated and coordinated with local authorities in accordance with the Work Plan during demolition operations. All operations were conducted using EODT SOPs, safety measures, and the approved ESS. The SUXOS Log, Demo Shot Records, and Explosives Accountability Records are located in Appendices D, H, and I respectively. All MEC items encountered were destroyed using the "blow-in-place" (BIP) method following approved demolition procedures.

2.7 MEC/MUNITIONS DEBRIS DISPOSITION

All MPPEH found was inspected using EODT's five-step inspection process as described in EODT SOP 120 and the Work Plan to positively confirm the presence, or absence, of MEC. All MEC items were destroyed by demolition using BIP procedures. All debris was consolidated and relocated to the site lay-down area and was stored in approved containers, inspected, verified and certified, and shipped off site for final disposition. EODT estimates that 28,980 pounds of MD and 2,100 pounds of CD have been collected for this removal action.

2.8 INVESTIGATION RESULTS

During the course of surface sweeps and intrusive operations, QC and Quality Assurance (QA) operations were conducted resulting in two QC failures and no QA failures reported. Additionally, 396 MEC items requiring disposal and 15 inert items required explosive demilitarizing (see Table 2-1) were recovered. Appendix C shows photographs of all MEC items and some of the MD discovered in each clearance area. The 396 MEC items were disposed of in accordance with the Work Plan. See Appendix H for supporting documentation. A list of MEC items located and disposed of is present in Table 2-1. Additionally, EODT submitted a statement of MEC removal and the Grid Tracking Log to USACE showing the

TABLE 2-1: MEC SUMMARY/INERT ITEMS

Item Quantity	MEC Item Description
2	M585 40mm Ground Illumination Rds.
1	M485 155mm Projectile Illumination Candle
2	M583A1 40mm Rds.
1	M206 Flare
4	M127 Flares
2	Illumination Candles
145	M62 Illumination Flares
237	M112 Illumination Flares
1	M123 Flares
1	M12 Cartridge
Total = 396	
Item Quantity	**Inert Item Description**
2	M335 4.2" Illumination Mortars
13	M485 155mm Illumination Projectiles
Total = 15	

dig results of each grid (see Appendix F). A total of 36,876 pounds of certified scrap was relocated to the approved scrap location.

2.9 QC AND QA RESULTS

During the course of MEC investigation, the EODT UXOQCS and the USAESCH QA representative conducted quality inspections of Site 54, Site 27, and Site 27 OB/OD. EODT was required to remove MEC and MPPEH (to include MD and RRD as indicated in Table 1 of the PWS). EODT UXOQCS inspected, at a minimum, 10% of each grid prior to turning the grid over to the USACE QA representative. The EODT UXOQCS found two deficiencies in Site 54 and zero deficiencies in Site 27, and Site 27 OB/OD with the work that was performed by the UXO surface clearance and intrusive clearance teams. The USACE QA representative found zero deficiencies in Site 54, Site 27, and Site 27 OB/OD with the work that was performed by the UXO surface clearance and intrusive clearance teams. The two QC grids that failed were reworked and underwent an additional QC inspection prior to be submitted for QA inspection. See Appendix J for QA 948 Forms.

2.9.1 The EODT UXOQCS developed checklists for all phases of work being conducted at the former LHAAP. These checklists allowed for the UXOQCS to have a guide for inspecting all aspects of the MEC removal process. The checklists also provided the MEC clearance teams the proper procedures for performing each task. The UXOQCS utilized the three phases of control for inspection purposes for all field activities. Prior to the field personnel performing any process in the clearance plan a preparatory inspection was conducted by the UXOQCS. During this phase of inspections the UXOQCS reviewed the section of the Work Plan, SOP, and site developed checklists with the team and ensured that everyone understood the process. The second phase of inspection is called the initial inspection. This inspection occurred soon after the team started the process. This inspection helped ensure that the team was following the Work Plan, SOPs, and site developed checklists and also gave the team an opportunity to point out better, safer, and quicker practices that were used to increase production and/or perform safer, more efficient operations. The third phase of inspection is called the follow-up inspection. This inspection occurred daily and weekly and was primarily used to ensure that the correct procedures were being used to complete the process. Follow-up inspections were written up formally or noted in the Daily UXOQCS Log.

2.9.2 Prior to clearance operations beginning the UXOQCS placed seed items at a minimum of 1 per acre within the boundaries of the clearance areas. During the course of the clearance 100% of the seed items were located and turned into the UXOQCS. See Appendix E for the Seed Tracking Log.

2.10 LAND USE CONTROL (LUC) SUMMARY

The following controls have been implemented:

- Restriction against intrusive activities, including digging.
  This restriction will be recorded in the Harrison County Clerk's Office, with the survey, map, and language as required by the TAC Citation 335.569, Appendix III once regulatory concurrence has been obtained.
- Signage at perimeters of MRSs.
  Signs have been installed at the perimeter of the MRSs and are visible from one to the next, with a maximum spacing of 100 feet, and serve as the physical demarcation of the controlled areas. The signs include a warning of the potential presence of UXO and state the restriction against intrusive activities. See Appendix N, Figure N-4 UXO Awareness Sign.
- Education program for future refuge visitors, staff, and volunteers.
  This includes 500 informational safety pamphlets and a 5 minute safety video warning of the potential presence of UXO and presenting examples of MEC that was or may be found at the sites. See Appendix N for the informational safety pamphlet and the five (5) minute Safety Video DVD.

2.11 ARCHEOLOGICAL SITES AND ENVIRONMENTALLY SENSITIVE AREAS

No archeological sites or environmentally sensitive areas were encountered.

2.12 SITE SAFETY

2.12.1 The projects UXO Safety Officer (UXOSO) monitored site safety on a daily basis to verify procedures and ensure compliance with the Work Plan, the SSHP, and applicable OSHA regulations. Each morning prior to the start of work a site-specific safety briefing was held and attended by all personnel working at the site. All operations to include demolitions were carried out with the highest regard to safety. See Appendix G for the Safety Log and Safety Reports.

2.12.2 During the course of the project, EODT encountered and addressed several safety concerns. EODT field personnel encountered numerous poisonous water snakes in the swamp area located in the northeast corner of Site 27. EODT field personnel were required to wear plastic snake chaps while working in the area where the water moccasins could be present. Poison Ivy was also present at both sites. Two personnel had to go to the hospital after duty hours to receive cortisone shots to help relieve the poison ivy that they came into contact with. The EODT UXOSO spent numerous hours developing procedures while in the field to limit the possibility of Poison Ivy exposure.

2.13 EXPOSURE DATA

2.13.1 EODT reported zero on-the-job accidents. There were no safety violations, accident reports, or corrective actions. Safety documentation is included in Appendix G of this report.

2.13.2 Personnel exposure data is summarized in Table 2-2.

TABLE 2-2: FIELD WORK ON SITE

EODT Man-Hours Worked on Site	On-The-Job Accident	Lost Work Days Resulting From On-The-Job-Accident
10,611.5	0	0

2.14 PROJECT SUMMARY AND OBSTACLES

During the course of the project, EODT met the performance requirements for surface clearance, sub-surface clearance, and LUC activities in Site 54, Site 27, and Site 27 OB/OD. The significant obstacle EODT encountered during the course of this project was an unanticipated high anomaly count during both surface (9,173 Site 54 / 8,989 Site 27) and subsurface clearance operations (46,242 Site 27 OB/OD). The project also encountered some weather-related and nature-related obstacles which included two hurricanes, a high number of poisonous snakes, and an abundant amount of Poison Ivy.

2.15 PROJECT CONCLUSION

The objective of this project was to provide all Munitions Response services necessary to remove MEC and MPPEH, including MD and RRD from the surface of Sites 54 and 27, the subsurface clearance of Site 27's open burn/open detonation (OB/OD), and the preparation of deed recordation language identifying LUCs for entry into the County Records consistent with Texas Administration Code requirements for the Longhorn Army Ammunition Plant. See Appendix B Figure B-1 for the site locations. EODT performed the Munitions Response services required without any USAESCH QA deficiencies. In accordance with the PWS Task 8 EODT was required to develop the LUCs, develop the LUC design and LUC Plan consistent with the Memorandum of the Office of the Deputy Assistant Secretary of the Army: CERCLA ROD and Post-ROD Policy, 16 January 2004 (Navy principles for Specifying LUCs). EODT was also required to place UXO awareness signs around the boundaries of Sites 27 and 54. EODT placed the UXO awareness signs every 100' or line of sight and the USAESCH QA representative found no deficiencies. Under Task 8 EODT was also required to develop 500 Safety pamphlets and a 5 minute safety awareness video. EODT has provided the safety pamphlets and the safety video and it has been accepted by the USAESCH PM. EODT has met all the requirements of Task Order 0014 of Contract W912DY-04-D-0018.

CHAPTER 3
REFERENCES

3.1 Comprehensive Environmental Response, Compensation, and Liability Act, Section 104

3.2 National Contingency Plan, Section 300.120(d)

3.3 National Contingency Plan, Section 300.400(e)

3.4 Chapter 29 of the Code of Federal Regulations 1910.120

3.5 Data Item Description MR-030

3.6 Engineering Evaluation and Cost Analysis, Parsons, 2006

3.7 Standard Operating Procedure 120 Munitions and Explosives of Concern Response Actions, EOD Technology, Inc.

3.8 MIL-STD-1916

3.9 Data Item Description MR-005-07

3.10 Sampling and Analysis Plan, CAPE, 2007

3.11 U.S. EPA Test Methods for Evaluating Solid Waste; Physical/Chemical Methods, EPA 530/SW-846, Third Edition with current revisions, June 1997

3.12 Chapter 40 of the Code of Federal Regulations 261.24

3.13 Appendix E Munitions Constituents Sampling and Analysis Plan, CAPE Environmental Management, Inc., October 2007

3.14 Assessment of Sampling Error Associated With Collection and Analysis of Soil Samples at Explosive Contaminated Sites, SR-96-15, CRREL, 1996

3.15 DDESB TP-18

3.16 Texas Administrative Code (TAC) for Deed Recordation Requirements

APPENDIX A
PERFORMANCE WORK STATEMENT

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

APPENDIX A
PERFORMANCE WORK STATEMENT

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE: J	PAGE OF PAGES: 1 | 22
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE: 06-Nov-2008	4. REQUISITION/PURCHASE REQ. NO.: SEE SCHEDULE		5. PROJECT NO.(If applicable)

6. ISSUED BY	CODE: W912DY	7. ADMINISTERED BY (If other than item 6)	CODE: W912DY
US ARMY ENGINEERING & SUPPORT CENTER CEHNC-CT 4820 UNIVERSITY SQUARE HUNTSVILLE AL 35816-1822		DIRECTORATE OF CONTRACTING - HNC ATTN: SARAH TIERNEY 256-895-1219 HUNTSVILLE AL 35807	

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code) EOD TECHNOLOGY, INC MATT KAYE 2229 OLD HWY 95 LENOIR CITY TN 37771-6747		9A. AMENDMENT OF SOLICITATION NO.
		9B. DATED (SEE ITEM 11)
	X	10A. MOD. OF CONTRACT/ORDER NO. W912DY-04-D-0018-0014
CODE 0NEH5	FACILITY CODE	X 10B. DATED (SEE ITEM 13) 28-Sep-2007

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer ☐ is extended, ☐ is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)
See Schedule

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS.
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

☐ A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

☐ B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

☒ C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
FAR 52.243-4, Changes

☐ D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)
Modification Control Number: a0ctbsmt083634
See Continuation Page.

See Continuation Page.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED

EXCEPTION TO SF 30
APPROVED BY OIRM 11-84

30-105-04

STANDARD FORM 30 (Rev. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

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0014
Page 2 of 21

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION A - SOLICITATION/CONTRACT FORM

The total cost of this contract was increased by $37,434.80 from $801,487.55 to $838,922.35.

The following have been added by full text:

MOD 01 NARRATIVE

The purpose of modification 01 to task order 0014 is to incorporate Revision 3 of the Performance Work Statement (PWS) dated November 4, 2008. All changes to the PWS are indicated in bold type. As a result of this PWS Revision, Tasks 3 and 6 are affected as follows:

(1) Task 3, Surface Clearance: The total acreage for Task 3 is decreased by 6.95, from 147.52, to 140.57. As a result the total price for this task is decreased by $18,487.00, from $436,470.18 to $417,983.18.

(2) Task 6, Clearance of OB/OD Area: The total acreage for Task 6 is decreased by 0.46, from 11.48 to 11.02. As a result the total price for this task is decreased by $11,233.20, from $305,568.68 to $294,335.48.

(3) Task 6a, FUP for Clearance of OB/OD Area: 2.75 additional acres are funded at a unit price of $24,420.00 for a total amount of $67,155.00.

As a result of this modification, the total funded amount of the Task Order is increased by $37,434.80, from $801,487.55 to $838,922.35. All changes are shown in the table below in bold.

Task, Title, Type	Qty	Unit	Price	Funded
1, Work Plan, FFP	1.00	Ea	$7,539.06	$7,539.06
2, Final Report, FFP	1.00	Ea	$9,028.01	$9,028.01
3, Surface Clearance (**140.57** acres), FFP	1.00	Ea	**$417,983.18**	**$417,983.18**
3a, One each additional acre, FUP	1.00	Ea	$2,660.00	
4, Clearance of Site 27 (68 acres), FFP, Optional	1.00	Ea	$637,732.22	$0.00
4a, One each additional acre, FUP	1.00	Ea	$8,689.00	
5, Clearance of Site 54 (80 acres), FFP, Optional	1.00	Ea	$616,708.53	$0.00
5a, One each additional acre, FUP	1.00	Ea	$7,255.00	
6, Clearance of OB/OD Area (**11.02** acres), FFP	1.00	Ea	**$294,335.48**	**$294,335.48**
6a, One each additional acre, FUP	**2.75**	Ea	$24,420.00	**$67,155.00**
7, Perimeter Fence Installation, FFP, Optional	1.00	Ea	$17,446.39	$0.00
7a, One each additional linear foot, FUP	1.00	Ea	$7.11	
8, Land Use Controls, FFP	1.00	Ea	$42,881.62	$42,881.62
			Total	**$838,922.35**

The completion date for this Task Order is extended from 31 December 2008 to 30 April 2009. No other changes have been made.

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SECTION B - SUPPLIES OR SERVICES AND PRICES

CLIN 0003
The CLIN extended description has changed from Surface Clearance (147.52 acres) to Surface Clearance (140.57 acres).
The unit price amount has decreased by $18,487.00 from $436,470.18 to $417,983.18.
The total cost of this line item has decreased by $18,487.00 from $436,470.18 to $417,983.18.

CLIN 0004
The CLIN extended description has changed from Clearance of OB/OD Area (11.48 acres) to Clearance of OB/OD Area (11.02 acres).
The unit price amount has decreased by $11,233.20 from $305,568.68 to $294,335.48.
The total cost of this line item has decreased by $11,233.20 from $305,568.68 to $294,335.48.

CLIN 0006 is added as follows:

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
0006		2.75	Each	$24,420.00	$67,155.00
	Task 6a FFP Clearance of OB/OD Area FUP (2.75 acres) FOB: Destination PURCHASE REQUEST NUMBER: W31RYO83103631				
				MAX NET AMT	$67,155.00
	ACRN AB CIN: W31RYO831036310001				$67,155.00

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SECTION C - DESCRIPTIONS AND SPECIFICATIONS

The following have been added by full text:

Performance Work Statement (PWS)
Removal Action, Former Longhorn Army Ammunition Plant, Karnack, Texas
Revision 3, November 5, 2008

The purpose of Revision 3 is to affect the following:
- Removes the provision for mobilization/demobilization costs to be provided for Tasks 3 and Task 6 as requested in Revision 2 of the PWS.
- Revises clearance area requirements identified in Tasks 3 and 6 to be consistent with civil survey results provided by the Contractor. These changes result in an overall reduction of 6.95 acres for Task 3 and an increase of 2.29 acres for Task 6.
- The clearance area required by Task 6 was previously identified as Exhibit A, which has been superseded by Site 27 – Adjusted OB/OD Area Map.
See strikethroughs and bolded print for specific changes.

1.0 Performance Objective. The objective of this project is to provide all Munitions Response (MR) services necessary to remove Munitions and Explosives of Concern (MEC) and Material Potentially Presenting an Explosive Hazard (MPPEH), including Munitions Debris (MD)and range related debris, from specific areas of the Longhorn Army Ammunition Plant (See Exhibits A and B attached).

2.0 Introduction. Munitions and Explosives of Concern (MEC) are a safety hazard and may constitute an imminent and substantial endangerment to site personnel. All MEC encountered during this munitions response shall be destroyed on-site. Applicable provisions of Chapter 29 of the Code of Federal Regulations (CFR) 1910.120 apply. All activities involving work in areas potentially containing MEC hazards shall be conducted in full compliance with United States Army Corps of Engineers (USACE), United States Army Engineering and Support Center Huntsville (USAESCH), Department of the Army (DA), state and local requirements regarding personnel, equipment and procedures, and Department of Defense (DOD) Standard Operating Procedures (SOPs) and safety regulations.

Due to the inherent risk associated with MEC operations, UXO-qualified personnel shall be limited to a 50-hour workweek consisting of a maximum of 40 hours of munitions response actions. No single workday shall exceed ten (10) hours. Forty-eight (48) hours must separate each MEC field operation workweek. These work restrictions apply only to MEC personnel.

2.1 Project Authorization. The DOD established the Military Munitions Response Program (MMRP) within the Defense Environmental Restoration Program (DERP) in September 2001 in recognition of the requirements and the complexity posed at MMRP sites. DOD guidance directs that MMRP actions be conducted within the framework of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

This action is funded by the U.S. Army Environmental Command to restore excess property managed by the Base Realignment and Closure Commission (BRAC). The action is taken in accordance with the National Contingency Plan, 40 Code of Federal Regulations (CFR) 300, Section 120 in which DOD is identified as the removal response authority for weapons and munitions under the jurisdiction, custody, or control of the DOD.

LHAAP became a National Priority Listed (NPL) site in 1990 and entered into a Federal Facilities Agreement with EPA Region 6 and TCEQ (formerly TWC) in 1991. Work on this project will be coordinated with the Longhorn Army Ammunition Plant Site Manager. The U.S. Army BRAC is the lead DOD organization for execution and oversight of investigation and implementation of remedial activities at the former Longhorn Army Ammunition Plant (LHAAP).

2.2 Site Location. The former LHAAP is located in east-central Texas in the northeastern corner of Harrison County, approximately 14 miles northeast of Marshall, Texas, and approximately 40 miles west of Shreveport, Louisiana.

2.3 Site History. LHAAP was established in October 1942 with the primary mission of producing trinitrotoluene (TNT) flake. TNT production continued until August 1945 when the plant went on standby status. Pyrotechnic ammunition (e.g., photoflash bombs, simulators, hand signals, and tracer ammunition) were manufactured at LHAAP from 1952 until 1956.

The LHAAP rocket motor facility began operation in November 1955. Production of rocket motors continued at LHAAP until 1965, when the production of pyrotechnic and illuminating ammunition was reestablished. Through 1994, operations consisted of producing pyrotechnic and propellant mixtures; loading, assembling, and packing activities; accommodating receipt and shipment of containerized cargo; and maintenance and/or layaway of standby facilities and equipment.

LHAAP was declared excess and placed in inactive status in 1997.

2.4 Chemical Warfare Materiel (CWM). This site is not suspected of containing CWM. However, during conventional MEC operations, if the Contractor identifies or suspects CWM, the Contractor shall immediately withdraw upwind from the work area and contact the contracting officer and the appropriate point of contact in the site specific Removal Action Work Plan (RAWP)/Accident Prevention Plan (APP). The Contractor shall secure the area and provide two personnel located upwind of the suspect CWM to secure the site until relieved by the Department of the Army emergency response personnel. Additional support may be required by the emergency response personnel, e.g., construction of blast mitigation controls. Additional reporting instructions are contained in CEMP-CE Memorandum, Notification Procedures for Discovery of Recovered Chemical Warfare Materiel (RCWM) During US Army Corps of Engineers (USACE) Projects, http://www.hnd.usace.army.mil/oew/policy/IntGuidRegs/RCWM%20Notification%20memo_w_encl23%20April%2004.pdf.

2.5 Improved Conventional Munitions. The site is not suspected to contain Improved Conventional Munitions (ICM). If suspect ICM are encountered during any phase of site activities, which are not considered to be practice ICM, the Contractor shall immediately withdraw from the work area, secure the site, and contact the US Army Engineering Support Center Huntsville (USAESCH) Ordnance and Explosives (OE) Safety Office for assistance and guidance.

2.6 Required Safety Gear. The Contractor shall provide all required safety equipment such as first aid and eyewash kits, fire extinguishers, safety glasses, Wet-Bulb Globe Temperature (WBGT) instrument, personal monitoring devices, etc. to ensure compliance with EM 385-1-1 and 385-1-95a as appropriate.

2.7 Quality Control:

2.7.1 Task Order Quality Management: The Contractor shall implement quality control (QC) processes as defined in a Quality Control Plan (QCP). The Contractor is responsible for ensuring that all work under the contract is of the quality that meets contract requirements. The QCP shall be detailed and comprehensive and shall cover all aspects of the task order activities impacting quality of deliverables and services. The Contractor shall ensure that QC documentation is maintained and available for Government inspection throughout the duration of field activities, and shall be provided in the Final Report(s). The Contractors QCP shall be included in the RAWP.

2.7.2 Quality Assurance: The Government will perform quality assurance (QA) of the Contractor's performance under this task order using the method of surveillance specified in the Quality Assurance Surveillance Plan (QASP). The specific surveillance tasks performed under the surveillance plan will be defined following acceptance of the QCP. The Government reserves the right to modify the surveillance tasks in the QASP at any time. The Government reserves the right to perform QA inspections at any time. QA failure can be defined as workmanship or work products not complying with the RAWP, Performance Work Statement (PWS), or not meeting project needs and/or objectives. Failure can also be defined as workmanship not complying with basic safety concepts and other industry safety practices. If any Government QA review identifies a process failure, a workmanship failure, or a

work product failure the Contractor will be issued a Corrective Action Request (CAR). QA workmanship failures include: (1) the Contractor's failure to demonstrate QC procedures and objectives as contained within the approved QCP, and (2) the Contractor failing to remove an anomaly that can not be discriminated from an explosive hazard to 11 diameters (or widths) depth (up to the specified clearance depth), excluding anomaly sources that have been identified by the Contractor and have been left in place. A QA work product failure is defined as the recovery of an anomaly by the Government to 11 diameters (or widths) depth (up to the specified clearance depth) during the QA process that is found to contain an explosive hazard. The discovery of a workmanship failure relating to the failure to remove an anomaly that cannot be discriminated from an explosive hazard as described above, or the discovery of a work product failure as described above shall additionally result in grid failure. Upon issuance of a CAR, the Contractor shall provide full documentation detailing the root cause of the failure, why it was not detected in the Contractor's QC Program, and how the problem was corrected.

2.7.3 Re-Performance: Any service or submittal performed that does not meet task order requirements shall be corrected or re-performed by the Contractor and at no additional cost to the Government. If the Contractor performs any task unsatisfactorily and all defects are not corrected, the Government reserves the right to terminate the PWS for default. In addition, the Government reserves its rights under FAR clause 52.246-4, Inspection of Services – Fixed Price, for further remedies concerning a Contractor's failure to perform in conformance with contract requirements.

2.8 Site Access. Site access must be coordinated and approved by the Army prior to site entry.

2.9 Notification. A 14 day notification must be provided to the Army prior to any field activities.

3.0 General Conditions.

a. The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to:

(1) conditions bearing upon transportation, disposal, handling, and storage of materials, explosives, or scrap;

(2) the availability of labor, facilities, water, electric power, communications, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground, soil, geology, and vegetation (type, height, density) and the distribution of each;

(5) the character of equipment and facilities needed preliminary to and during work performance;

(6) the character, quality, and quantity of surface and subsurface anomalies, materials and obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government as well as from the exploratory work that the Government expected the contractor to performed during the site inspection (see a description herein) including but not limited to ferrous or non-ferrous anomalies, cultural debris, cultural features, site construction features, discarded military munitions (DMM), material potentially presenting and explosive hazard (MPPEH), burial pits, munitions and explosives of concern (MEC), munitions constituents (MC), munitions debris (MD), range-related debris, small arms ammunition, hot rocks, metallic debris, and/or other anomalies;

(7) PPE requirements including all effects on cost or production due to the requirement to use PPE;

(8) Exclusion zone requirements. Exclusion zone requirements include all effects and costs of implementing and enforcing exclusion zones. The Contractor is responsible for evaluating, identifying the requirements of, and implementing/complying with all exclusion zones;

(9) DOD, US Army, and US Army Corps of Engineers regulations or guidance in effect at the time of contract signature. The Contractor is responsible for understanding and implementing the required safety and access control requirements and factoring them into their approach and price;

(10) the availability or cost of qualified labor, material, and/or equipment;

(11) the impact of reasonable Government document reviews and quality assurance inspections;

(12) the availability or cost of housing for on-site personnel; and

(13) the availability or location of explosives storage.

b. The Government has provided the contractor with access to the site for as long as the contractor requested to become confident in their independent understanding of the site conditions and the Government expects prospective bidders to use this time to perform the requisite site assessments necessary to ascertain the site conditions to a reasonable degree of accuracy. The Government believes that the quantity and distribution of surface and subsurface anomalies, MEC, MPPEH, cultural debris, hot rocks, and other similar cost drivers are reasonably ascertainable from the contractor's inspection of the site. Bidders are expected to perform this site inspection and use their experienced judgment and reasoned interpolation and extrapolation of all the available site information to assess the general and local conditions which can affect the work or its cost. The Contractor is expected to apply due diligence in the research and development of their proposal and to know or estimate the conditions to be encountered that will affect the cost, quality, or schedule of the work included in this task order. The Government expects the contractor to assess the risk and factor this risk into their proposal. Claim of differing or changed site conditions will not be allowable for conditions that the Contractor could reasonably be expected to verify, know, anticipate, or assume or any of the above specific conditions. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government. The act of signing this task order signifies that the Contractor has been given amply opportunity to assess the conditions under which the work will be performed and the Contractor fully understands those conditions. The Contractor certifies that their proposal is not qualified or contingent upon any of the above conditions. Any estimates of such conditions included in the data provided to the Contractor by the Government or included in the Contractor's proposal are not binding contractual conditions. The Contractor accepts full and sole responsible for identifying and considering all factors that may affect the cost to execute the work. The Contractor attests that it has had sufficient opportunity to do so and has used any data or information provided to them by any party at their own risk. The Contractor attests that they have made an independent inspection of the site, have gathered the information necessary to fully understand the conditions they will encounter during execution of this task order, and have used any data provided by the Government at the Contractor's own risk.

c. Government acceptance of the proposed technical approach and/or price does not relieve the Contractor from full responsibility for the viability, productivity, and efficiency of the approach used to perform the work or for meeting the performance requirements of the PWS at the price proposed.

d. The Contractor has been provided data during the proposal process including but not limited to site data included in previous project documents. Specifically, the Contractor has been provided with the Draft Final Engineering Evaluation/ Cost Analysis (EE/CA) report that documents conditions at the site as gathered and interpreted by a third party Contractor. The purpose of the EE/CA was to identify the presence and/or the extent of a hazard, to identify the objectives of any removal action, to provide a risk-based analysis of the existing conditions, and to analyze the various alternatives that may be used to satisfy these objectives. Though it provides general information that the Government used to ascertain the relative cost of various alternatives, its use as the basis of estimate for an accurate removal action contract price proposal requires an experienced understanding of how EE/CA data is collected, analyzed, interpreted, and presented. The actual conditions that the Contractor experiences need to consider that the EE/CA was conducted under conditions that will differ from those encountered during the removal. The Contractor shall be responsible for interpreting the data provided in context of the conditions under which the data was gathered, collated, analyzed, and recognize the limitation of reasonable extrapolation typical of site

assessment of this type. The Contractor is expected to have used the pre-proposal site visit to field verify their interpretation of the data. The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

4.0 Specific Tasks: All tasks listed in this section shall be performed in accordance with the applicable requirements of Section 5.0 "General Requirements." Methods to be used to achieve task order objectives at the specified level of performance shall be determined by the Contractor. The Contractor will be evaluated periodically during each of the following tasks to ensure compliance with this PWS and to document that quality objectives, delivery schedule, and the overall completion date are being met. Failure to adequately complete any service or submittal to at least a satisfactory level of quality or timeliness may result in a repeat of the service or submittal, a poor performance evaluation, and/or a reduction in payment to cover additional expenses incurred by the Government for the Contractor's delay.

4.1 Task 1, Removal Action Work Plan (RAWP). This is a Firm Fixed-Price task.

Objective: Submit an acceptable RAWP in a timely and efficient manner that conforms to task requirements and applicable standards.

Performance Metric: The accuracy of the information provided within the document as well as the number of submissions required to obtain Government acceptance of the document will be evaluated and shall be the basis of the Contractor's performance evaluation for this task.

Measurement Method: The Government will review the RAWP for its ability to meet project objectives, DQOs, and for proper and safe application of procedures and equipment. The Government will review the RAWP and provide comments to the Contractor, which will require a written response from the Contractor and/or possible changes to the RAWP. The comments will focus primarily on areas of the RAWP that do not comply with the PWS. These comments are to be addressed. Additional comments may be provided for the Contractor's review and consideration that relate to economy and efficiency, which the Contractor may choose to incorporate; however, the Contractor is responsible for any impact this may have, positive or negative. Performance is determined by the number of submissions required to attain an acceptable document compared to the number required by Section 5.6 "Submittals". The Contractor shall attend an onboard review in Huntsville, Alabama, after receiving comments on the Draft RAWP. If the Draft version of the RAWP is submitted and approved for Draft Final production in one (1) submission, the Contractor will receive an exceptional performance rating under Quality of Product or Service and will not be required to attend the onboard review in Huntsville. If the onboard review is required and all issues are resolved and the RAWP is accepted for Draft Final production in two (2) submissions then a satisfactory rating will be given. If the Draft RAWP is rejected and returned without comments, an unsatisfactory performance rating will be given and additional submittals will be required until the RAWP is accepted.

Remedy: If non-compliance issues are noted, the Contractor shall revise and re-submit the RAWP to address all comments requiring resolution to meet the task objective.

Incentives/Disincentives:

- Fewer submissions result in cost savings to Contractor.
- Efficient task completion minimizes overall cost to Contractor.
- Affects overall performance evaluation.

Specific Task Requirements: The RAWP shall be prepared in accordance with Data Item Description (DID) MR-005-01 (Type II) and EP 1110-01-18 (Draft version dated 3 April 2006 was issued as a Military Munitions Center of Expertise (MM CX) Interim Guidance Document (IGD) 06-04 available @ http://www.usace.army.mil/inet/usace-docs/) or http://www.hnd.usace.army.mil/oew/policy/IntGuidRegs/IGD%2006-04.pdf) to support removal actions and land use controls (LUCs) in the designated area(s). The RAWP shall describe the specific work proposed in order to meet

the objectives and requirements of this PWS. The Contractor shall submit a project schedule, which demonstrates the ability to perform all tasks requirements within project timelines. The RAWP shall contain, at a minimum, those items listed under Paragraph 2 of DID MR-005-01, which are a Technical Management Plan (DID MR-005-02), an Explosive Management Plan (DID MR-005-03), Explosives Siting Plan (DID MR-005-04), Accident Prevention Plan (APP) (DID MR-005-06) and a Site Safety and Health Plan (SSHP) (EM 385-1-1), Environmental Protection Plan (DID MR-005-12), and a Quality Control Plan (QCP). The QCP shall be a detailed and comprehensive plan covering all aspects of the response. Other sub plans or elements shall be required as necessary to support the Contractor's technical approach. A property management plan will be required if the Contractor has Government furnished equipment. The Contractor shall plan for an on board review in Huntsville after receipt of comments on the draft final version. It is the intent of the Government that the Contractor shall provide a CD at the conclusion of the onboard review. This CD is in addition to the other CDs required elsewhere in the PWS.

4.2 Task 2, Site Specific Final Report (SSFR). This is a Firm Fixed-Price task.

Objective: Submit an acceptable SSFR in a timely and efficient manner that conforms to task requirements and applicable standards.

Performance Metric: The accuracy of the information provided within the document as well as the number of submissions made by the Contractor to obtain Government acceptance of the document will be evaluated and shall be the basis of the Contractor's performance evaluation for this task.

Measurement Method: The Government will review the SSFR to ensure the work effort has met project objectives, DQOs, and adequately documents project activities. The Government will review the SSFR and provide comments to the Contractor, which will require a written response from the Contractor and/or possible changes to the SSFR. The comments will focus primarily on areas of the SSFR that do not comply with the PWS. These comments are to be addressed. Additional comments may be provided for the Contractor's review and consideration, which the Contractor may choose to incorporate; however, the Contractor is responsible for any impact this may have, positive or negative. Performance is determined by the number of submissions required to attain an acceptable document compared to the number required by Section 5.6 "Submittals". The Contractor shall attend an onboard review in Huntsville, Alabama, after receiving comments on the Draft SSFR. If the Draft version of the SSFR is submitted and approved for Draft Final production in one (1) submission, the Contractor will receive an exceptional performance rating under Quality of Product or Service and will not be required to attend the onboard review in Huntsville. If the onboard review is required and all issues are resolved and the SSFR is accepted for Draft Final production in two (2) submissions then a satisfactory rating will be given. If the Draft SSFR is rejected and returned without comments, an unsatisfactory performance rating will be given and additional submittals will be required until the SSFR is accepted.

Remedy: If non-compliance issues are noted, the Contractor shall summarize the actions to be taken and re-submit a revised SSFR.

Incentives/Disincentives:

- Fewer submissions result in cost savings to Contractor.
- Efficient task completion minimizes overall cost to Contractor.
- Affects overall performance evaluation.

Specific Task Requirements: The Contractor shall prepare a SSFR in accordance with the general format presented in DID MR-030. In addition to the DID requirements, the Contractor shall include all QC, QA, and GIS documentation in the Final Report (QA documentation provided to the Contractor during the Government QA process shall be included, such as Form 948 for grid acceptance and executed CARs). The Contractor shall also include a cover letter signed by an authorized person (preferably the person who signed the Task Order) of the company certifying, on behalf of the company, that the requirements of this Task Order have been met. See Section 6.0 "SUBMITTALS AND CORRESPONDANCE" for guidance on numbers and types of submissions.

4.3 Task 3, MEC and MPPEH Surface Clearance, Optional. This is a Firm Fixed-Price task.

Objective: Remove MEC and MPPEH (to include MD and range related debris) from the surface of the areas shown on Exhibits A and B, specifically ~~67.52~~ ***61.07*** acres within Site 27 and ~~80.00~~ ***79.50*** acres within Site 54, respectively ***for a total surface clearance of 140.57 acres***. The Contractor shall provide a map of the cleared area upon completion of clearance activities in accordance with Section 4.7 "Location Surveys and Mapping."

Performance Metric: Successful performance will be measured by: (1) the Government finding, on the surface of the designated clearance areas, no MEC (regardless of size), MD, ferrous metal, and/or range related debris (including anything that may possess an explosive hazard, i.e., MPPEH) equivalent to or greater than 40 mm in diameter (or width) (2) proper staking of the clearance areas before beginning the clearance using a *Texas* licensed professional surveyor; and (3) production of a map that accurately conveys the clearance areas that is signed by the surveyor, the SUXOS, and a principal of the firm.

Measurement Method: The Contractor's conformance with the performance work statement will be evaluated by the Government during Quality Assurance (QA) inspections in accordance with the Quality Assurance Surveillance Plan (QASP).

Remedy: If any grid fails the Government QA inspection for ferrous metal items, explosive hazards, or survey/marking accuracy, the Contractor shall re-clear the area or remark the area of concern or both as is required to achieve the performance metric.

Incentives/Disincentives: All rework shall be performed at no cost to the Government. If less than ¼% of area requires rework, the Contractor will receive an exceptional performance rating, less than ½% will be very good, less than 1% will be satisfactory, and less than 2% will be marginal, greater than 2% will be unsatisfactory.

Specific Task Requirements: The Contractor shall remove MEC, MPPEH (to include MD, and range related debris), and ferrous metal in the areas indicated in Exhibits A and B. All work shall be performed in accordance with the PWS, RAWP, and all applicable standards. ~~Contractor shall provide a Fixed Unit Price for mobilization and demobilization costs.~~ At the completion of field activities, the Contractor shall submit signed clearance maps as a separate deliverable in addition to being included in the Site Specific Final Report. A per acre unit price for clearance activities shall be provided in the Contractor's proposal in case additional acreage is required to be deleted or added to the clearance effort. All MPPEH shall be processed and disposed of by the Contractor. The Contractor shall dispose of material determined by inspection not to contain an explosive hazard, as well as material remaining as MPPEH following inspection. The Contractor shall commence field work after receipt of DDESB approval of the Government prepared Explosives Safety Submission (ESS), but not before receipt of a Notice to Proceed (NTP) is issued by the Contracting Officer. Field work for this task shall be completed within 60 calendar days of receipt of the NTP. If any portion of the required work is not completed, passed QA inspection, and has been accepted by the Government by the date required, the Contractor's payment will be reduced by $1,290 per calendar day until the work is completed. If the Contractor is delayed by or through unanticipated Government actions, the completion date will be extended by a comparable number of calendar days before a reduction in compensation to the Contractor begins.

4.4 Task 4, MEC and MPPEH Clearance of Site 27, Optional. This is a Firm Fixed-Price task and is mutually exclusive of Task 3.

Objective: Remove MEC and MPPEH (to include MD and range related debris) from the area shown on Exhibit A, specifically 68 acres within Site 27 (excluding the identified OB/OD area). The Contractor shall provide a map of the cleared area upon completion of clearance activities in accordance with Section 4.7 "Location Surveys and Mapping."

Performance Metric: Successful performance will be measured by: (1) the Government finding, on the surface or within the subsurface of the designated clearance area, no MEC (regardless of size for surface items only), MD, and/or range related debris (including that which may possess an explosive hazard, i.e., MPPEH) equivalent to or greater than 40 mm in diameter (or width) to a depth of 11 times the diameter (or width); and (2) production of a

map that accurately conveys the clearance areas that is signed by the surveyor, the SUXOS, and a principal of the firm.

Measurement Method: The Contractor's conformance with the performance work statement will be evaluated by the Government during Quality Assurance (QA) inspections in accordance with the Quality Assurance Surveillance Plan (QASP).

Remedy: If any grid fails the Government QA inspection for MD items or explosive hazards, the Contractor shall re-clear the area or remark the area of concern or both as is required to achieve the performance metric.

Incentives/Disincentives: All rework shall be performed at no cost to the Government. If less than ¼% of area requires rework, the Contractor will receive an exceptional performance rating, less than ½% will be very good, less than 1% will be satisfactory, less than 2% will be marginal, greater than 2% will be unsatisfactory.

Specific Task Requirements: The Contractor shall remove MEC, MPPEH, MD, and range related debris in the area identified in Exhibit A and to the depths indicated above. All work shall be performed in accordance with the PWS, RAWP, and all applicable standards. At the completion of field activities, the Contractor shall submit signed clearance maps as a separate deliverable in addition to being included in the Site Specific Final Report. A per acre unit price for clearance activities shall be provided in the Contractor's proposal in case additional acreage is required to be deleted or added to the clearance effort. All MPPEH shall be processed and disposed of by the Contractor. The Contractor shall dispose of material determined by inspection not to contain an explosive hazard, as well as material remaining as MPPEH following inspection. The Contractor shall commence field work after receipt of DDESB approval of the Government prepared Explosives Safety Submission (ESS), but not before receipt of a NTP is issued by the Contracting Officer. Field work for this task shall be completed within 120 calendar days of receipt of the NTP. If any portion of the required work is not completed, passed QA inspection, and has been accepted by the Government by the date required, the Contractor's payment will be reduced by $1,290 per calendar day until the work is completed. If the Contractor is delayed by or through unanticipated Government actions, the completion date will be extended by a comparable number of calendar days before a reduction in compensation to the Contractor begins.

4.5 Task 5, MEC and MPPEH Clearance of Site 54, Optional. This is a Firm Fixed Price task and is mutually exclusive of Task 3.

Objective: Remove MEC and MPPEH (to include MD and range related debris) from the area shown on Exhibit B, specifically 80 acres within Site 54. The Contractor shall provide a map of the cleared area upon completion of clearance activities in accordance with Section 4.7 "Location Surveys and Mapping."

Performance Metric: Successful performance will be measured by: (1) the Government finding, on the surface or within the subsurface of the designated clearance area, no MEC (regardless of size for surface items only), MD, and/or range related debris (including that which may possess an explosive hazard, i.e., MPPEH) equivalent to or greater than 40 mm in diameter (or width) to a depth of 11 times the diameter (or width); and (2) production of a map that accurately conveys the clearance areas that is signed by the surveyor, the SUXOS, and a principal of the firm.

Measurement Method: The Contractor's conformance with the performance work statement will be evaluated by the Government during Quality Assurance (QA) inspections in accordance with the Quality Assurance Surveillance Plan (QASP).

Remedy: If any grid fails the Government QA inspection for MD items or explosive hazards, the Contractor shall re-clear the area or remark the area of concern or both as is required to achieve the performance metric.

Incentives/Disincentives: All rework shall be performed at no cost to the Government. If less than ¼% of area requires rework, the Contractor will receive an exceptional performance rating, less than ½% will be very good, less than 1% will be satisfactory, less than 2% will be marginal, greater than 2% will be unsatisfactory.

Specific Task Requirements: The Contractor shall remove MEC, MPPEH, MD, and range related debris in the area identified in Exhibit B and to the depths indicated above. All work shall be performed in accordance with the PWS, RAWP, and all applicable standards. At the completion of field activities, the Contractor shall submit signed clearance maps as a separate deliverable in addition to being included in the Site Specific Final Report. A per acre unit price for clearance activities shall be provided in the Contractor's proposal in case additional acreage is required to be deleted or added to the clearance effort. All MPPEH shall be processed and disposed of by the Contractor. The Contractor shall dispose of material determined by inspection not to contain an explosive hazard, as well as material remaining as MPPEH following inspection. The Contractor shall commence field work after receipt of DDESB approval of the Government prepared Explosives Safety Submission (ESS), but not before receipt of a NTP is issued by the Contracting Officer. Field work for this task shall be completed within 120 calendar days of receipt of the NTP. If any portion of the required work is not completed, passed QA inspection, and has been accepted by the Government by the date required, the Contractor's payment will be reduced by $1,290 per calendar day until the work is completed. If the Contractor is delayed by or through unanticipated Government actions, the completion date will be extended by a comparable number of calendar days before a reduction in compensation to the Contractor begins.

4.6 Task 6, MEC and MPPEH Clearance of OB/OD Area, Optional. This is a Firm Fixed-Price task and is mutually exclusive of Task 3.

Objective: Remove MEC and MPPEH (to include MD and range related debris) from the ~~11.48~~ ***13.77*** acre OB/OD area of Site 27 shown on ~~Exhibit A~~ ***Site 27 – Adjusted OB/OD Area Map***. The Contractor shall provide a map of the cleared area upon completion of clearance activities in accordance with Section 4.7 "Location Surveys and Mapping."

Performance Metric: Successful performance will be measured by: (1) the Government finding, on the surface or within the subsurface of the designated clearance area, no MEC (regardless of size for surface items only), MD, and/or range related debris (including that which may possess an explosive hazard, i.e., MPPEH) equivalent to or greater than 40 mm in diameter (or width) to a depth of 11 times the diameter (or width); and (2) production of a map that accurately conveys the clearance areas that is signed by the surveyor, the SUXOS, and a principal of the firm.

Measurement Method: The Contractor's conformance with the performance work statement will be evaluated by the Government during Quality Assurance (QA) inspections in accordance with the Quality Assurance Surveillance Plan (QASP).

Remedy: If any grid fails the Government QA inspection for ferrous metal items, explosive hazards, or survey/marking accuracy, the Contractor shall re-clear the area or remark the area of concern or both as is required to achieve the performance metric.

Incentives/Disincentives: All rework shall be performed at no cost to the Government. If less than ¼% of area requires rework, the Contractor will receive an exceptional performance rating, less than ½% will be very good, less than 1% will be satisfactory, and less than 2% will be marginal, greater than 2% will be unsatisfactory.

Specific Task Requirements: The Contractor shall remove MEC and MPPEH (to include munitions debris and range related debris) in the areas and depths indicated in Exhibits A and B. All work shall be performed in accordance with the PWS, RAWP, and all applicable standards. ~~Contractor shall provide a Fixed Unit Price for mobilization and demobilization costs.~~ At the completion of field activities, the Contractor shall submit signed clearance maps as a separate deliverable in addition to being included in the Site Specific Final Report. A per acre unit price for clearance activities shall be provided in the Contractor's proposal in case additional acreage is required to be deleted or added to the clearance effort. All MPPEH shall be processed and disposed of by the Contractor. The Contractor shall dispose of material determined by inspection not to contain an explosive hazard, as well as material remaining as MPPEH following inspection. The Contractor shall commence field work after receipt of DDESB approval of the Government prepared Explosives Safety Submission (ESS), but not before receipt of a NTP is issued by the Contracting Officer. Field work for this task shall be completed within 150 calendar days of receipt of the NTP. If any portion of the required work is not completed, passed QA inspection, and has been accepted by the Government

by the date required, the Contractor's payment will be reduced by $1,290 per calendar day until the work is completed. If the Contractor is delayed by or through unanticipated Government actions, the completion date will be extended by a comparable number of calendar days before a reduction in compensation to the Contractor begins.

4.7 Task 7, Perimeter Fence Installation of OB/OD Area, Optional. This is a Firm Fixed-Price task.

Objective: Install a fence with signage around the perimeter of the 11-acre OB/OD area of Site 27 shown on Exhibit A.

Performance Metric: Successful performance will be measured by completion of fence installation.

Measurement Method: The Contractor's conformance with the performance work statement will be evaluated by the Government during Quality Assurance (QA) inspections in accordance with the Quality Assurance Surveillance Plan (QASP) to ensure fence materials and installation methods meet specifications provided.

Remedy: If any portion of the fence installation fails the Government QA inspection for fence materials or installation methods, the Contractor shall repair and/or replace defective portions as is required to achieve the performance metric.

Incentives/Disincentives: All rework shall be performed at no cost to the Government. If less than 100' of fence requires rework, the Contractor will receive an exceptional performance rating, and less than 250' will be very good, less than 500' will be satisfactory, less than 750' will be marginal, and greater than 1,000' will be unsatisfactory.

Specific Task Requirements: The Contractor shall install a 4-strand barb wire fence with 6.5' metal T-posts and 2-12' metal gates with signage (as defined in Option Task 8) around the perimeter of the 11-acre OB/OD area of Site 27 shown on Exhibit A. Signs must be visible from one location to the next, with a maximum spacing interval of 100', have a minimum size of 10" x 12", printed in English only, and installed on stand alone U-channel type posts with locking nuts. The Contractor shall assume a 16' wide path must be cleared of all trees, brush, and debris on the perimeter of the OB/OD area to facilitate this effort. All work shall be performed in accordance with the PWS, RAWP, attached fence specifications, and all applicable standards. On-Site Construction Support shall be provided by the Contractor during all activities required for fence installation. Unit prices for additional fencing material, gates, signs, U-channel type posts and hardware (galvanized non-slotted carriage bolts with anti-theft locking nuts) shall be provided in the Contractor's proposal in the event additional fencing materials or signage is required to be deleted or added. The Contractor shall commence field work after receipt of DDESB approval of the Government prepared Explosives Safety Submission (ESS), but not before receipt of a NTP is issued by the Contracting Officer. Field work for this task shall be completed within 160 calendar days of receipt of the NTP. If any portion of the required work is not completed, passed QA inspection, and has been accepted by the Government by the date required, the Contractor's payment will be reduced by $1,290 per calendar day until the work is completed. If the Contractor is delayed by or through unanticipated Government actions, the completion date will be extended by a comparable number of calendar days before a reduction in compensation to the Contractor begins.

4.8 Task 8, Land Use Controls Design, Land Use Controls Plan, and Implementation, Optional. This is a Firm Fixed-Price task.

Objective: Ensure that future land use remains compatible with the land use that was used during the evaluation, selection, and implementation of the response action.

Performance Metric: The accuracy of the information provided within the documents as well as the number of submissions required to obtain Government acceptance of the documents will be evaluated and shall be the basis of the Contractor's performance evaluation for this task.

Measurement Method: The Government will review the LUC Design, LUC Plan, and associated submittals for its ability to meet project objectives. The Government will provide comments to the Contractor after review, which will require a written response from the Contractor and/or possible changes to the LUC Design and/or LUC Plan and LUCIP. The comments will focus primarily on areas of the LUC Design and/or LUC Plan that do not comply with

the PWS. These comments are to be addressed. Additional comments may be provided for the Contractor's review and consideration that relate to economy and efficiency, which the Contractor may choose to incorporate; however, the Contractor is responsible for any impact this may have, positive or negative. Performance is determined by the number of submissions required to attain an acceptable document compared to the number required by Section 5.6 "Submittals". The Contractor shall attend an onboard review in Huntsville, Alabama, after receiving comments on the Draft LUC Design and LUC Plan. If both Draft versions of the LUC Design and LUC Plan are submitted and approved for Draft Final production in one (1) submission, the Contractor will receive an exceptional performance rating under Quality of Product or Service and will not be required to attend the onboard review in Huntsville. If the onboard review is required and all issues are resolved and the LUC Design and LUC Plan are accepted for Draft Final production in two (2) submissions then a satisfactory rating will be given. If the Draft LUC Plan and LUCIP are rejected and returned without comments, an unsatisfactory performance rating will be given and additional submittals will be required until the LUC Design and LUC Plan are accepted.

Remedy: If non-compliance issues are noted, the Contractor shall revise and re-submit the LUC Design or LUC Plan to address all comments requiring resolution to meet the task objective.

Incentives/Disincentives:

- Fewer submissions result in cost savings to Contractor.
- Efficient task completion minimizes overall cost to Contractor.
- Affects overall performance evaluation.

Specific Task Requirements: The Contractor shall develop a LUC Design and LUC Plan consistent with the Memorandum of Office of the Deputy Assistant Secretary of the Army: CERCLA ROD and Post-ROD Policy, January 16, 2004 (Navy Principles for Specifying LUCs), which is attached. Items to be included in the LUC Design are specifications and drawings. The LUC Design shall be included within the RAWP if this option task is awarded as specified in the above referenced memorandum. Items to be included in the LUC Plan shall are implementation, monitoring, and reporting. The LUC Plan shall be attached to the RAWP as an appendix if this option task is awarded. Specific items to be included in the LUC Design and LUC Plan and LUCIP shall be signage for the perimeter boundaries of Site 27, Site 54, and the OB/OD area, fencing for the OB/OD area (if Option Task 7 is awarded), development of a 5 minute videotape for the USF&WS related to safety awareness training for expected recreational activities, and production of 500 safety brochures (in electronic, editable format). Signs must be visible from one location to the next, with a maximum spacing interval of 100', have a minimum size of 10" x 12", printed in English only, and installed on stand alone U-channel type posts with locking nuts. Sign procurement and installation for the OB/OD area are addressed in Task 7. All work shall be performed in accordance with the PWS, RAWP, and all applicable standards. The Contractor shall commence work on this task upon receipt of a NTP is issued by the Contracting Officer. Upon acceptance of these documents, the Contractor shall implement the proposed LUCs based upon the perimeter dimensions and/or quantities listed above. Unit prices for additional LUC materials, brochures, fencing materials, gates, signage, U-channel type posts and hardware (galvanized non-slotted carriage bolts with anti-theft locking nuts) shall be provided in the Contractor's proposal in the event additional materials or signage is required to be deleted or added. On-site Construction Support shall be provided by the Contractor during all activities required for sign installation. Work for this task shall be completed within 140 calendar days of receipt of the NTP. If any portion of the required work is not completed by the date required, the Contractor's payment will be reduced by $1,290 per calendar day until the work is completed. If the Contractor is delayed by or through unanticipated Government actions, the completion date will be extended by a comparable number of calendar days before a reduction in compensation to the Contractor begins.

5.0 General Requirements: All work under Section 4.0 Specific Tasks of this PWS shall be performed in accordance with the following general requirements:

5.1 Permits. The Contractor is responsible for obtaining all required permits, inspections, certificates, equipment, transportation, and personnel to complete the project.

5.2 MEC Disposal. The Contractor shall be responsible for the destruction of all MEC encountered during project activities.

5.3 Backfilling Excavations. All access/excavation/detonation holes shall be backfilled by the Contractor. The Contractor shall restore such areas to their prior condition.

5.4 MEC Accountability. The Contractor shall maintain a detailed accounting of all MEC items/components encountered. This accounting shall include the amounts of MEC, nomenclature and condition, location and depth of MEC, and disposition. The accounting system shall also account for all demolition materials utilized to detonate MEC on site. The Contractor shall take digital photographs of identifiable MEC found during the investigation. This accounting shall be a part of an appendix to the Final Report.

5.5 Disposal/Disposition of MPPEH. The Contractor shall handle and dispose of all MPPEH (including munitions debris and range related debris) in accordance with MM CX IGD 06-08, which is available at http://www.hnd.usace.army.mil/oew/policy/IntGuidRegs/IGD%2006-08%20MPPEH.pdf. The Contractor shall dispose of material determined by inspection not to contain an explosive hazard, as well as material remaining as MPPEH following inspection.

5.6 Vegetation Removal. The Contractor shall be responsible for performing all necessary tree/brush removal to an extent necessary to accomplish the objectives of this PWS. Controlled burns will be allowed, but must be coordinated with the Army and the US Fish and Wildlife Service (USF&WS) representatives, with notification provided to the State of Texas and local agencies, as necessary. No area burning or vegetation removal will be performed by the Government.

5.7 Location Surveys and Mapping. The Contractor shall perform civil surveys in accordance with EM 1110-1-4009 and DID MR-005-07. All data submitted shall be in the Universal Transverse Mercator (UTM) coordinate system. The Contractor shall obtain the services of a *Texas* licensed professional surveyor to interpret and delineate the boundaries to be cleared as depicted in Exhibits A and B.

5.8 Analog Geophysical Systems. The QCP shall be designed to demonstrate zero defects in workmanship. This is defined as all function tests demonstrating that systems are operational, portions of grids do not inadvertently go uninvestigated, and that no items are excavated during QC inspections that meet specified failure criteria.

5.9 Digital Geophysical Systems.

5.9.1 Should the Contractor choose to utilize digital geophysical systems, the Contractor's QCP shall be designed to demonstrate zero defects in workmanship. This is defined as all function tests demonstrating that systems are operational, portions of grids do not inadvertently go uninvestigated, no dig list anomalies remain unresolved, and that no items are excavated during QC inspections, whether selected from dig lists or not, that meet the specified failure criteria.

5.9.2 Raw Geophysical Field Data Format and Storage. Raw field data will be stored in a logical file directory (folder) structure to facilitate its management and dissemination to PDT members. Raw field data is defined as all digital data generated from the geophysical system, and includes positioning, heading, tilt, and any other peripheral or instrument measurements collected or recorded during data acquisition. All raw field data shall have a time stamp associated with each measurement event. Metadata, either in the form of a read-me file or information recorded in the project GIS, will be generated for each logical grouping of raw field data (e.g., names and contents of all files generated to map a grid, or names and contents of all files generated from a towed platform during a mapping session.) Metadata shall fully describe all measurements recorded in each data file. Metadata shall include all information necessary to successfully associate all geophysical system measurements to their correct geographical location. At the discretion of the PDT, the metadata can be limited to provide references to where this information is located. This option would typically be reserved for line and fiducial surveys where numerous field notes are required to properly position all data, and including the field notes in a digital metadata file would be time consuming and unnecessary to meet project objectives. At the discretion of the PDT, raw field data may include geophysical system data that has been checked, corrected and processed into ASCII files, either individually by instrument or merged with positioning data. Metadata shall include instructions for generating ASCII formatted data from all raw data for use in computer processing systems.

5.9.3 Final Processed Data Format and Storage. Final processed data shall be produced and presented in ASCII formatted files and/or native geophysical processing software formats; the PDT will establish which type(s) are required. Final processed data is defined as data that represents, to the best of the PDT's ability, the true potential field that exists at each actual location measured by the geophysical system. Final processed data shall have all corrections applied as needed to correct for positioning offsets, instrument bias (including instrument latency), instrument drift, yaw-angle offsets, and diurnal magnetic variations. Final processed data shall not be filtered or normalized (filtered or normalized data is addressed under Advanced Data below). All corrections will be documented. Data within the files will be delineated into individual fields for each value reported. ASCII data files shall be delineated using standard delineation protocols such as a comma (e.g. a "csv" format), a tab, or a white space. The PDT will determine which delineation protocol shall be used. Native geophysical processing software often manage and display data in spreadsheet formats not requiring specified delineation standards. Values reported in data files shall include local, geographic and/or projected coordinates for each measurement event (often referred to as x/y, latitude/longitude or easting/northing coordinates), one or more "z" values, which are the data associated with each measurement event, and a time stamp for each measurement event. Projected coordinates shall be reported in UTM/metric or State Plane/US Survey Feet coordinates and units, as determined by the PDT. Unless agreed upon otherwise by the PDT, header or metadata information shall be included in each file and describe the contents of each value field and specify its units. Data file size should be limited to 100 megabytes or less, and the file length should be limited to 600,000 lines or less. Each data file will be logically and sequentially named so that the file name can be easily correlated with the project-specific naming conventions being used by the PDT.

5.9.4 Advanced Processed Data Format and Storage. All advanced processed data shall be produced and presented in ASCII formatted files and/or native geophysical processing software formats; the PDT will establish which type(s) are required. Advanced processed data is defined as Final Processed data that has been subjected to advanced processing techniques, such as filtering or normalizing, and was used in part or in whole in the anomaly selection process. Data within the files will be delineated into individual fields for each value reported. ASCII data files shall be delineated using standard delineation protocols such as a comma (e.g. a "csv" format), a tab, or a white space. The PDT will determine which delineation protocol shall be used. Native geophysical processing software often manage and display data in spreadsheet formats not requiring specified delineation standards. Values reported in data files shall include local, geographic and/or projected coordinates for each measurement event (often referred to as x/y, latitude/longitude or easting/northing coordinates), one or more "z" values, which are the advanced-processed data associated with each measurement event, and a time stamp for each measurement event. Projected coordinates shall be reported in UTM/metric or State Plane/US Survey Feet coordinates and units, as determined by the PDT. Unless agreed upon otherwise by the PDT, header or metadata information shall be included in each file and describe all advanced processing that was applied to each value field. The Metadata shall specify the units of each value field. Data file size should be limited to 100 megabytes or less, and the file length should be limited to 600,000 lines or less. Each data file will be logically and sequentially named so that the file name can be easily correlated with the project-specific naming conventions being used by the PDT.

5.10 Geographic Information System (GIS). The Contractor shall produce concise ArcGIS map files in accordance with following guidance and submit an electronic copy of said GIS as part of every report submission. The GIS database shall be updated as needed to enable the Contractor to plan and coordinate daily, weekly, and monthly activities and for the Government to track the progress of the clearance or investigation area(s), and communicate those areas with the Government and construction contractors. The Contractor shall provide updated site maps to the Government on a weekly basis during field activities. Submittal of the weekly updates shall be by COB on Tuesday after completion of work on Friday or Saturday Close of Business (COB). The ArcGIS map file should be prepared in ArcGIS 9.x format and be compatible with ArcGIS 9.2 Personal Geodatabase. The Contractor shall apply the OE-GIS standard to the project to the extent required to create data sets that identify the following: grid identification number, grid coordinates, full or partial grid, date of mag/flag/dig and/or geophysical survey, date of QC inspection, date of QA inspection, grids containing MEC, grids containing MEC scrap, number of digs in each grid, pounds of MEC scrap, pounds of non-MEC scrap, etc. MEC items that are found and either moved or blown-in-place shall have the original coordinates documented within the GIS. Digital pictures of MEC items, items of interest, or project locations shall be digitally referenced with point locations within a Digital Picture Feature Class. The layers shall be completely independent, all spatially referenced to the appropriate UTM grid system (if not specified within the PWS) and produce a concise complete picture of all clearance or investigation activities

completed during this munitions response contract. Supporting tabular data shall be provided in ANSI SQL language format at the completion of the project, as well as in Microsoft Excel and/or Microsoft Access. All support databases shall be complete and single entities with no joins or related connections. All spatial data shall conform to the CADD/GIS Technology Center Spatial Data Standards for Facilities Infrastructure and Environment (SDSFIE) and the OE-GIS data standard. Metadata shall be created for the core OE-GIS data layers, and will be prepared in accordance with Federal Geographic Data Committee (FGDC) metadata standards. Personal Geodatabase is the preferred submittal format, contained within a single CD-ROM or DVD for submittal. Weekly reports may be conveyed electronically via email with appropriate Personal Geodatabase attached. All formal submittals shall contain a CD-ROM or DVD submittal of the supporting data set for the report being submitted to include all associated files (MXD, PDF, MDB, DBF, TIFF, JPEG, MrSID, etc.) required to support all previous field activities, findings, and conclusions stated within the report.

5.11 Project Management. The Contractor shall provide a single point of contact (POC), who is responsible for the entire project and coordination of team activities. The POC shall serve as a liaison/planner/consultant with the Government staff; advising the Government in MEC safety, as well as scheduling and execution of the operations. The POC shall attend project-planning meetings, as required, for the duration of the project. The POC shall perform project activities necessary to maintain project control, to include, but not be limited to the following:

a. Schedule. The Contractor shall develop and submit, for approval, a comprehensive project schedule for the areas being investigated. The schedule shall be updated weekly in accordance with DID MR-085 Project Status Report with changes sent directly to the USAESCH PM by e-mail in Microsoft Project. The Contractor shall be responsible for coordination and scheduling of all activities with representatives of the project to avoid conflicts with other scheduled activities.

b. Site Access and Coordination. The Contractor shall be responsible for establishing protocol for access, coordination or modification of schedules to accommodate protocol for entering and exiting the site, etc.

c. Reports/Minutes, Record of Meetings. The Contractor shall prepare and submit a report/minutes of all meetings attended in accordance with DID MR-045.

d. Telephone Conversations/Correspondence Records. The Contractor shall keep a record of telephone conversations and written correspondence, in accordance with DID MR-055. A copy of this record shall be attached to the Project Status Report.

e. Project Status Reports. The Contractor shall prepare and submit Project Status Reports in accordance with DID MR-085 to include GIS updates/information and any other items required in the PWS. The report shall also include planned and actual production curves. It shall also include planned and actual expenditure curves for time and materials tasks. If expenditures exceed the plan by more than 5%, the Contractor shall update the estimate to completion.

5.12 Time Extensions for Unusually Severs Weather. This provision specifies the procedure for determination of time extensions for unusually severe weather. In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

a. The weather experienced at the project site during the contract period must be unusually severe,

b. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

Upon acknowledgment of the NTP and continuing throughout the contract, the Contractor shall record on the daily Contractor Quality Control (CQC) report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for fifty percent (50%) or more of the Contractor's scheduled workday. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month) and be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual

adverse weather delay days impacts the Contractors completion schedule, the Contracting Officer will consider issuing a modification to the Contract to extend the allotted completion schedule by a comparable number of days.

6.0 Submittals and Correspondence:

6.1 Computer Files. All draft final, and final text files generated by the Contractor under this contract shall be furnished to the Contracting Officer in Microsoft Word 2000 or higher software. Spreadsheets shall be in Microsoft EXCEL. All CADD drawings shall be in Microstation 95 or higher. Any GIS data shall be in ESRI (Arcview/Arcinfo) format.

6.2 PDF Deliverables. In addition to the paper copies of submittals, uncompressed digital copies on CD ROM of all versions of submittal shall be provided in PDF format. The documents shall be complete with a linked table of contents, tables, photographs, graphs, figures, and appendices all of which shall be suitable for viewing on the Internet. PDF files shall be created from source documents whenever possible.

6.3 Review Comments. Various reviewers will have the opportunity to review submittals made by the Contractor under this contract. The Contractor shall review all comments received through the USAESCH Project Manager (PM) and evaluate their appropriateness based upon their merit and the requirements of the PWS. The Contractor shall issue to the USAESCH Project Manager a formal, annotated response to each in accordance with the established schedule in this PWS. The Contractor shall not non-concur with a comment without discussing the comment with the USAESCH PM. If the PM is not available then the Contractor shall contact the Technical Manager.

6.4 Identification of Responsible Personnel. Each report shall identify the specific members and title of the Contractor's staff and subcontractors that had significant and specific input into the preparation or review of the report.

6.5 Public Affairs. The Contractor shall not publicly disclose any data generated or reviewed under this contract. The Contractor shall refer all requests for information concerning site conditions to the USACE Tulsa District Public Affairs Office (PAO) with a copy furnished to the USAESCH PM. Reports and data generated under this contract are the property of the DOD and distribution to any other source by the Contractor, unless authorized by the Contracting Officer, is prohibited.

6.6 Submittals. The Contractor shall furnish copies of the plans, maps, and reports as identified as specified in this PWS, to each addressee listed below in the quantities indicated. The Contractor shall submit a CD, with each copy, of all versions of all submittals (RAWP, reports, plans, etc.). The Contractor shall submit the designated number of copies on CD of the Final Approved Versions of all submittals (RAWP, Reports, Plans, etc) in accordance with PDF Deliverables paragraph, to all addressees provided below, at the completion of the Task Order. For purposes of the PWS all days are considered calendar days. In addition to the CDs required above, the column below shows recipients in which the draft final version must be submitted also.

Addressee	Copies	CD
Commander, USA Engineering and Support Center Attn: Doug Garretson (CEHNC-OE-DC), 256-895-1066 4820 University Square Huntsville, AL 35816-1822	5	5
Department of the Army Longhorn Army Ammunition Plant Ms. Rose M. Zeiler Post Office Box 220 Ratcliff, AR 72951	6	6
U.S. Army Corps of Engineers, Tulsa District	2	2

ATTN: CESWT-EC-ER (John Lambert)
1645 S. 101st East Ave.
Tulsa, OK 74128

6.7 Submittal Due Dates.

For purposes of the PWS all days are considered calendar days.

Submittal	Due Date
Draft Removal Action Work Plan	15 days after Award
Draft Final Removal Action Work Plan	15 days after receipt of comments
Final Removal Action Work Plan	5 days after receipt of comments
Draft GPO Plan, if applicable	14 days after Award
Draft Final GPO Plan, if applicable	14 days after receipt of comments
Final GPO Plan, if applicable	5 days after receipt of comments
Draft GPO Letter Report, if applicable	5 days after completion of field activities
Draft Final GPO Letter Report, if applicable	5 days after receipt of comments
Final GPO Letter Report, if applicable	5 days after receipt of comments
Draft Site Specific Final Report	21 days after field activity completion
Draft Final Site Specific Final Report	15 days after receipt of comments
Final Site Specific Final Report	15 days after receipt of comments Final Electronic Copies provided with each Final SSFR with updated copy (if necessary) after Final SSFR approval
Clearance Progress Maps	Weekly

6.8 Project Completion Date. The Project Completion Date is **30 April 2009**.

6.9 Payment Milestone Schedule. Milestones will be considered met or completed when the appropriate QC documentation has been submitted, Government QA has been completed, and the submittal and/or product is accepted. Any payment vouchers submitted that do not coincide with the above milestones or do not have the appropriate QC documentation will be rejected. Monthly payment vouchers do not meet milestone requirements unless specific grids or acreage amounts are identified and submitted with documentation that proves Government QA has been completed. The Contractor shall submit a letter indicating milestones accomplished with each payment voucher. All payments will be made utilizing an agreed upon Payment Milestone Schedule.

Suggested Payment Milestones:

- Removal Action Work Plan (FFP), upon acceptance/approval;
- MEC and MPPEH Clearance (FFP), upon completion of identified task and/or Government acceptance of specific grids or acreage amounts;
- SSFR (FFP), upon acceptance/approval.

7.0 References.

7.1 Contract: Refer to "Basic Contract."

7.2 Data Item Descriptions (DIDs):

Data Item Descriptions are part of this contract and are available at the following:
http://www.hnd.usace.army.mil/oew/didsindex.aspx

Data Item Descriptions

Number	Title
DID MR-005-01	Type II Work Plan
DID MR-005-02	Technical Management Plan
DID MR-005-03	Explosives Management Plan
DID MR-005-04	Explosives Siting Plan
DID MR-005-05	Geophysical Investigation Plan
DID MR-005-05A	Geophysical Prove-Out (GPO) Plan and Report
DID MR-005-06	Accident Prevention Plan
DID MR-005-07	Geospatial Information and Electronic Submittals
DID MR-005-08	Work, Data, and Cost Management Plan
DID MR-005-09	Property Management Plan
DID MR-005-10	Munitions Constituents Chemical Data Quality Deliverables
DID MR-005-11	Quality Control Plan
DID MR-005-12	Environmental Protection Plan
DID MR-005-13	Investigative Derived Waste Plan
DID MR-010	Engineering Evaluation/Cost Analysis (EE/CA) Report
DID MR-015.01	Accident/Incident Reports
DID MR-025	Personnel Resume
DID MR-030	Site Specific Final Report
DID MR-040	Disposal Feasibility Letter Report
DID MR-045	Report/Minutes, Record of Meeting
DID MR-055	Telephone Conversations/Correspondence Records
DID MR-060	Conventional Explosives Safety Submission (ESS)
DID MR-080.01	Monthly Status Report
DID MR-085	Project Status Report
DID MR-100	Institutional Analysis and Institutional Control Plan

W912DY-04-D-0018
0014
Page 21 of 21

SECTION F - DELIVERIES OR PERFORMANCE

The following Delivery Schedule item has been added to CLIN 0006:

DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
POP 28-SEP-2007 TO 30-APR-2009	N/A	US ARMY ENGINEERING & SUPPORT CENTER WANDA H HAMPTON CEHNC-CT 4820 UNIVERSITY SQUARE HUNTSVILLE AL 35816-1822 256-895-1168 FOB: Destination	W912DY

SECTION G - CONTRACT ADMINISTRATION DATA

Accounting and Appropriation

Summary for the Payment Office

As a result of this modification, the total funded amount for this document was increased by $37,434.80 from $801,487.55 to $838,922.35.

CLIN 0003:

AA: 21720200000 088130 25400G422149300814000 ENVR 01110 (CIN W31RYO725336150003) was decreased by $18,487.00 from $436,470.18 to $417,983.18

CLIN 0004:

AA: 21720200000 088130 25400G422149300814000 ENVR 01110 (CIN W31RYO725336150004) was decreased by $11,233.20 from $305,568.68 to $294,335.48

CLIN 0006:
Funding on CLIN 0006 is initiated as follows:

ACRN: AB

CIN: W31RYO831036310001

Acctng Data: 21920200000 088130 25405C5L7G49300813000 ENVR 01110

Increase: $67,155.00

Total: $67,155.00

(End of Summary of Changes)

APPENDIX B
SITE MAPS

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

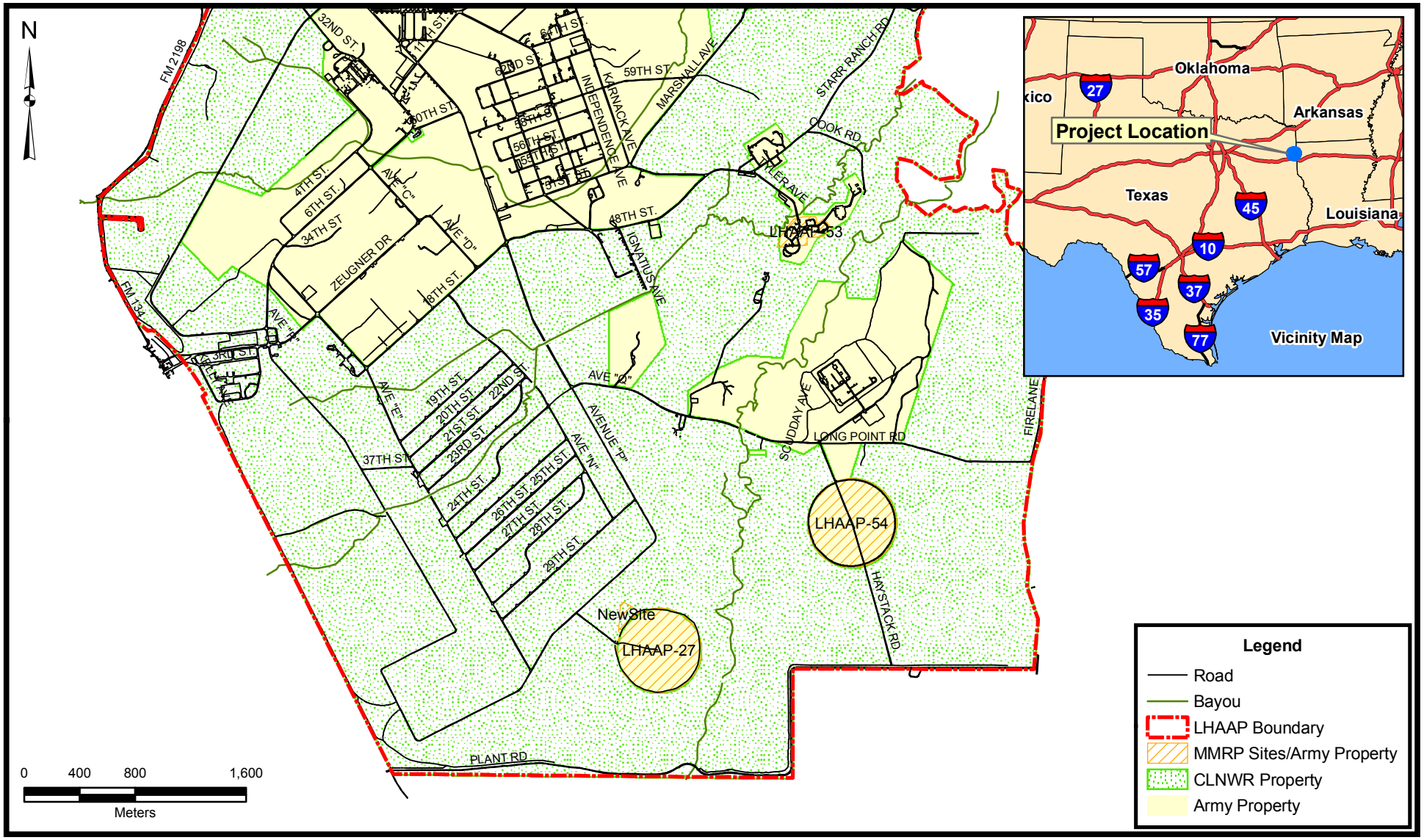


Figure B-1: Site Location Map

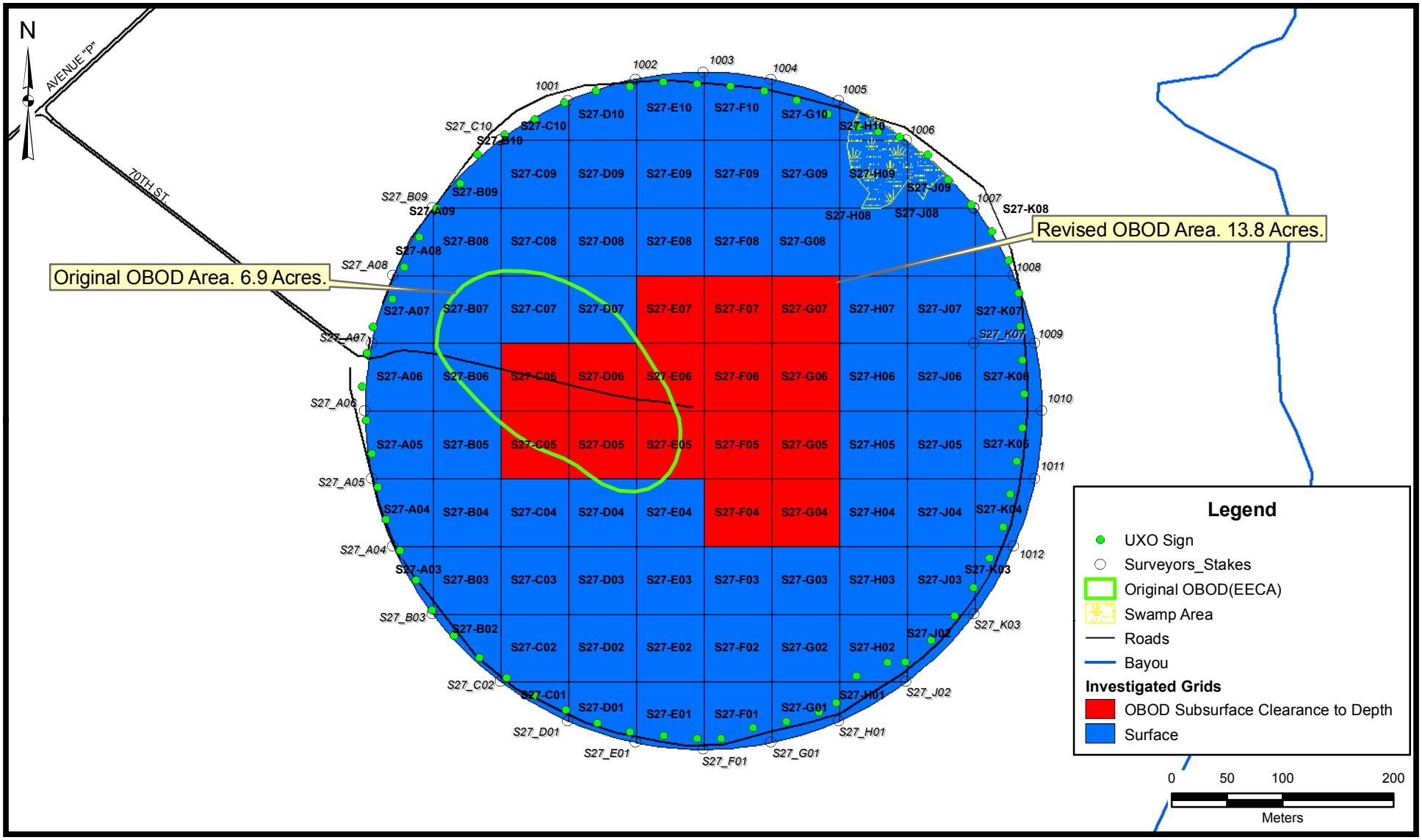


Figure B-2: Site 27 Investigation Depth/Clearance Grid Layout

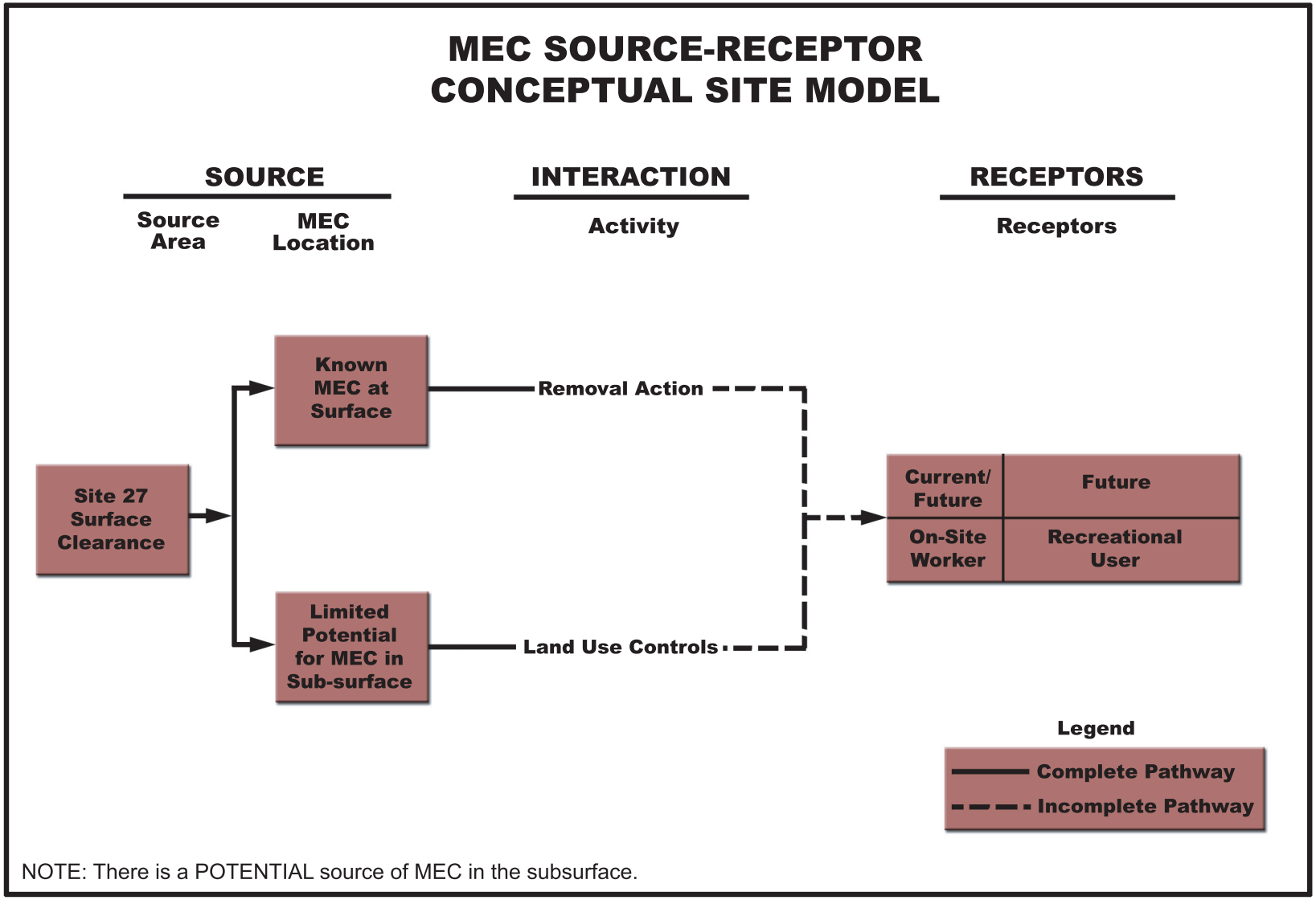


FIGURE B-2A: MEC SOURCE-RECEPTOR CONCEPTUAL SITE MODEL

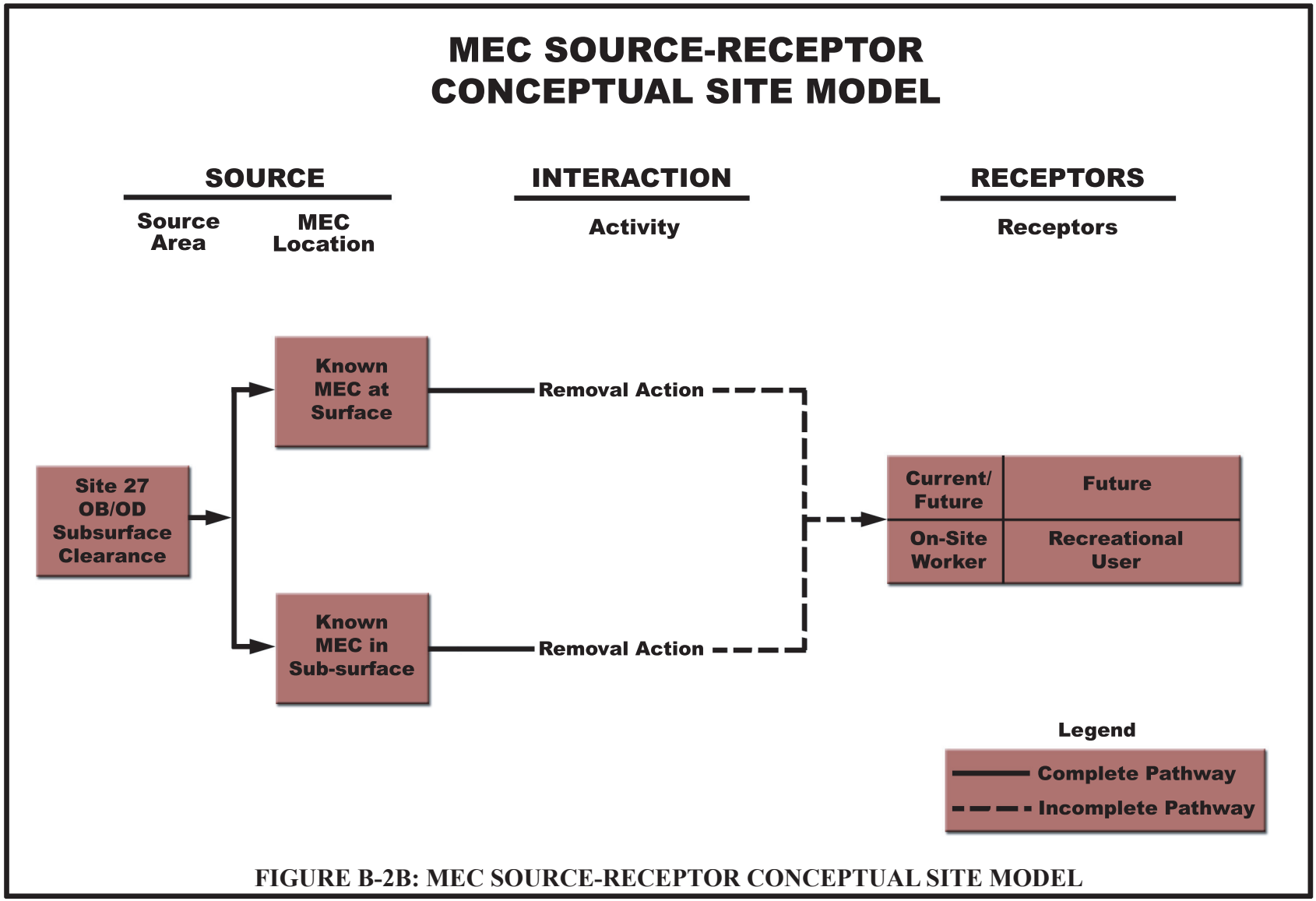


FIGURE B-2B: MEC SOURCE-RECEPTOR CONCEPTUAL SITE MODEL

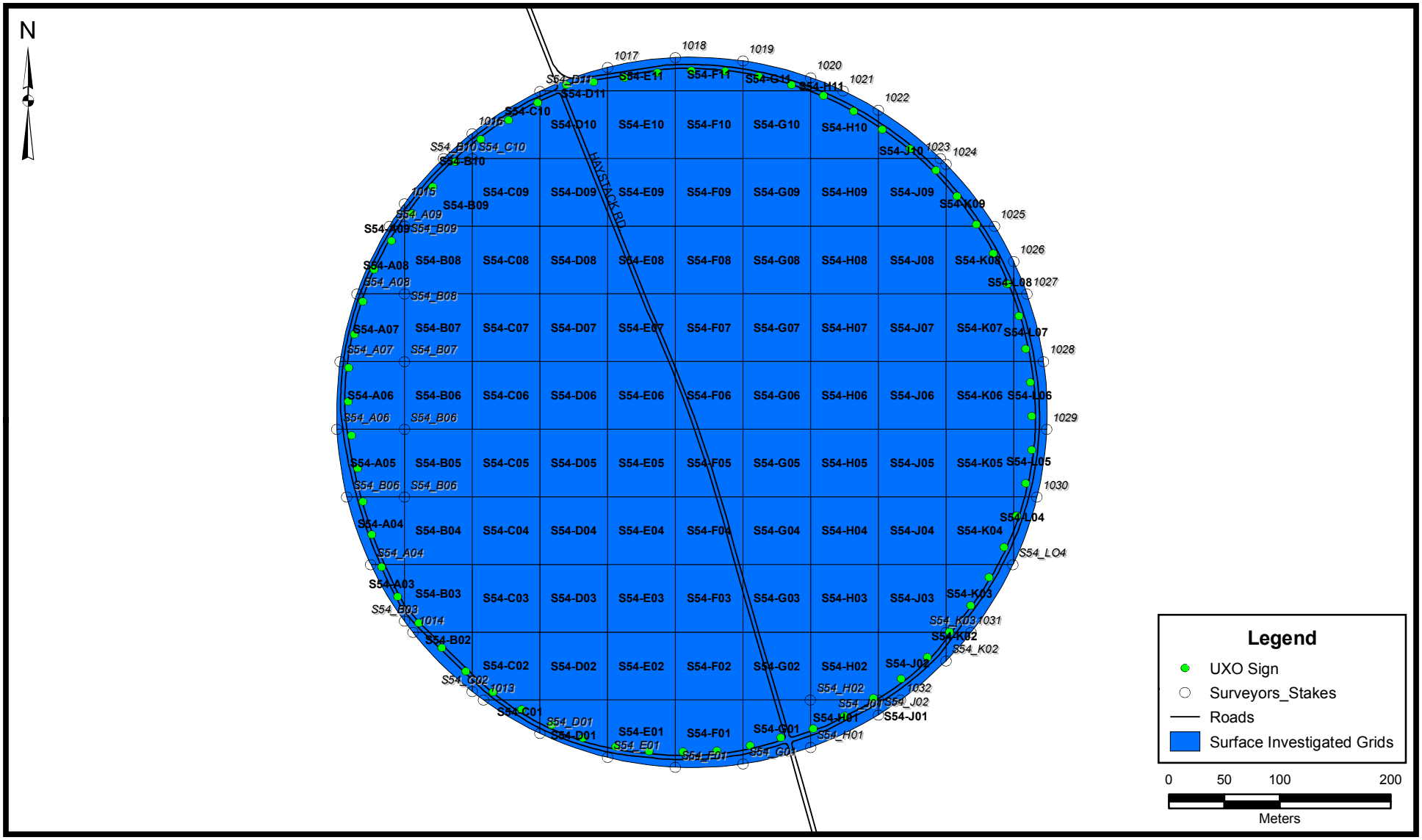


Figure B-3: Site 54 Investigation Depth/Clearance Grid Layout

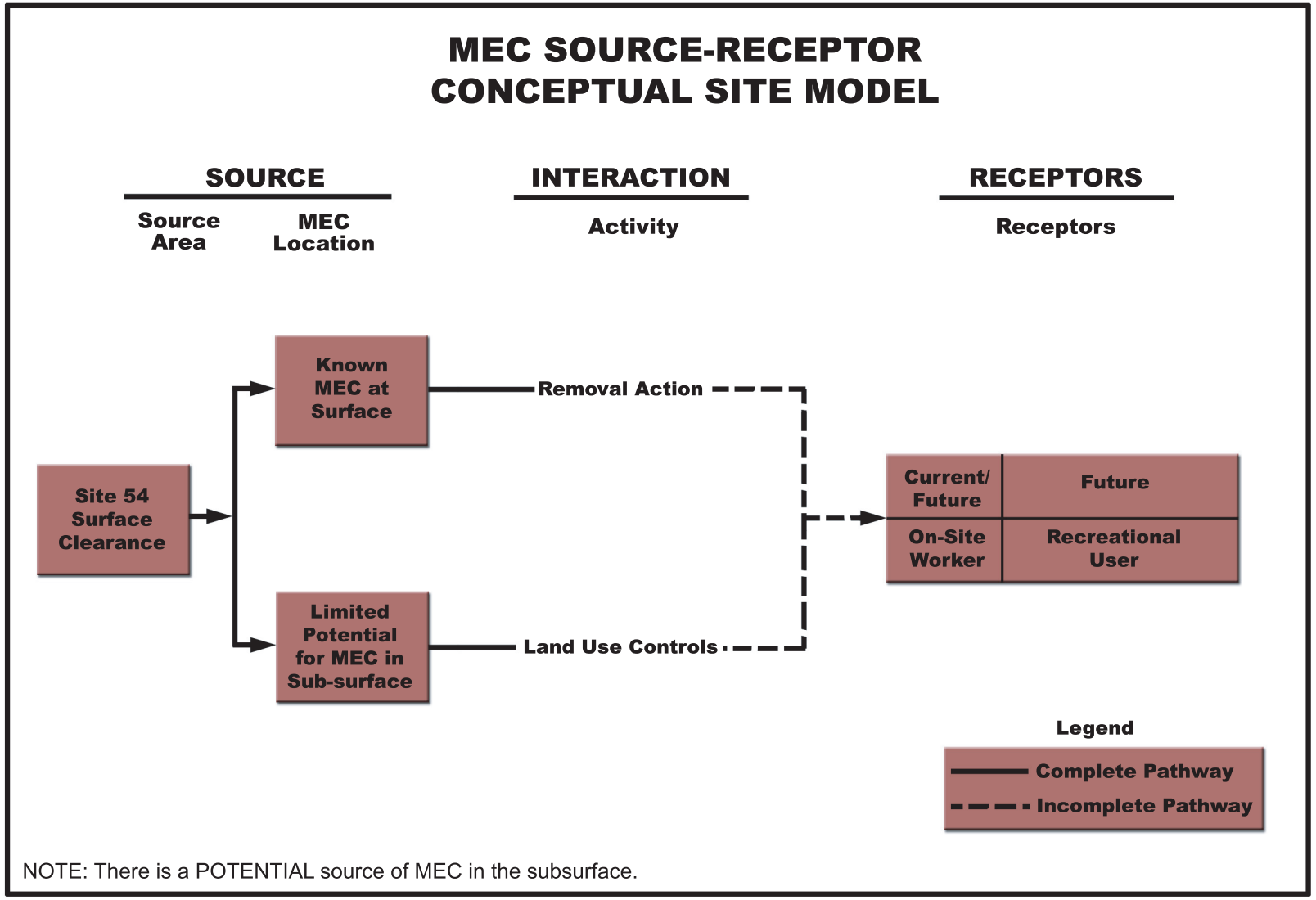


FIGURE B-3A: MEC SOURCE-RECEPTOR CONCEPTUAL SITE MODEL

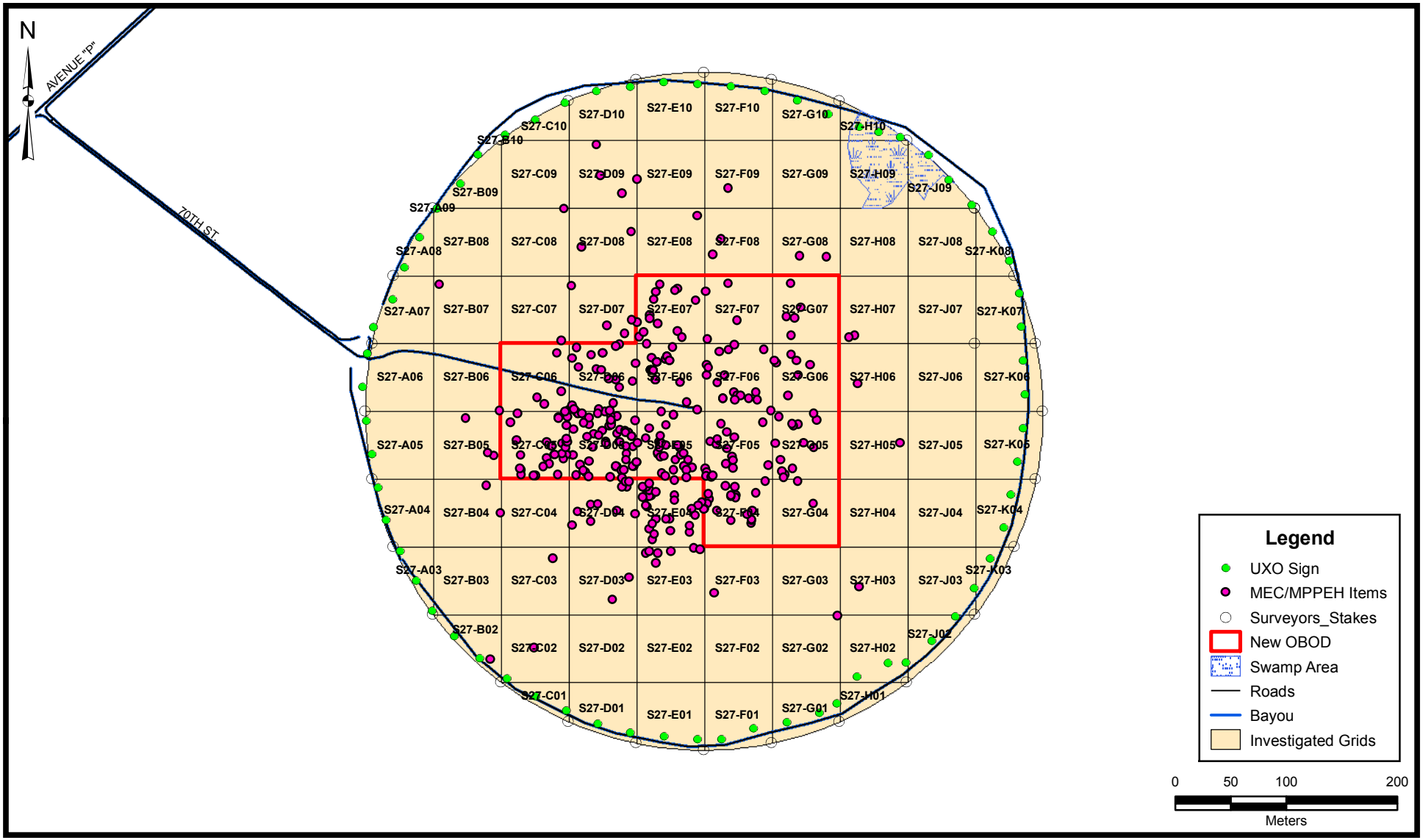


Figure B-4: Site 27 MEC/MPPEH Location Map

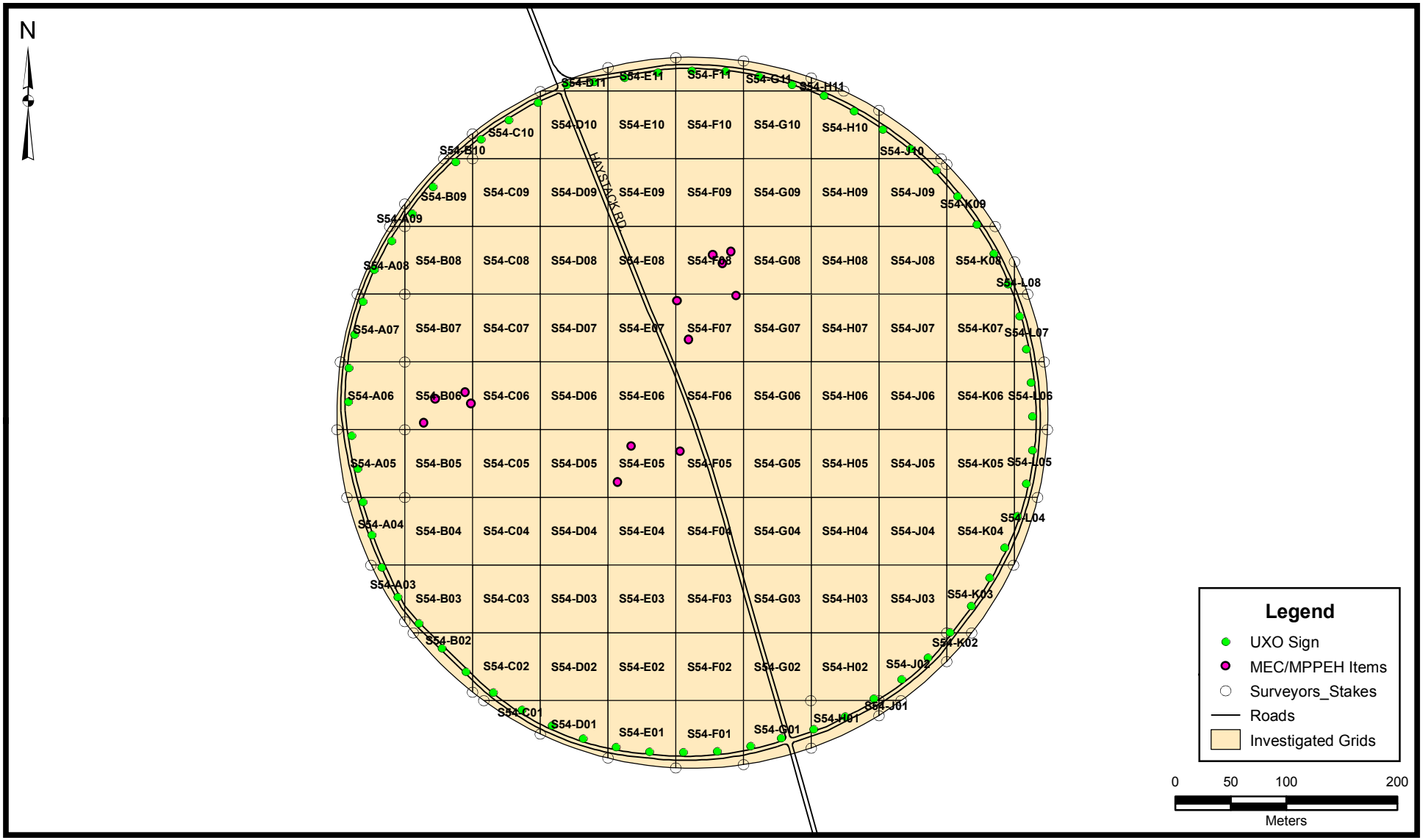
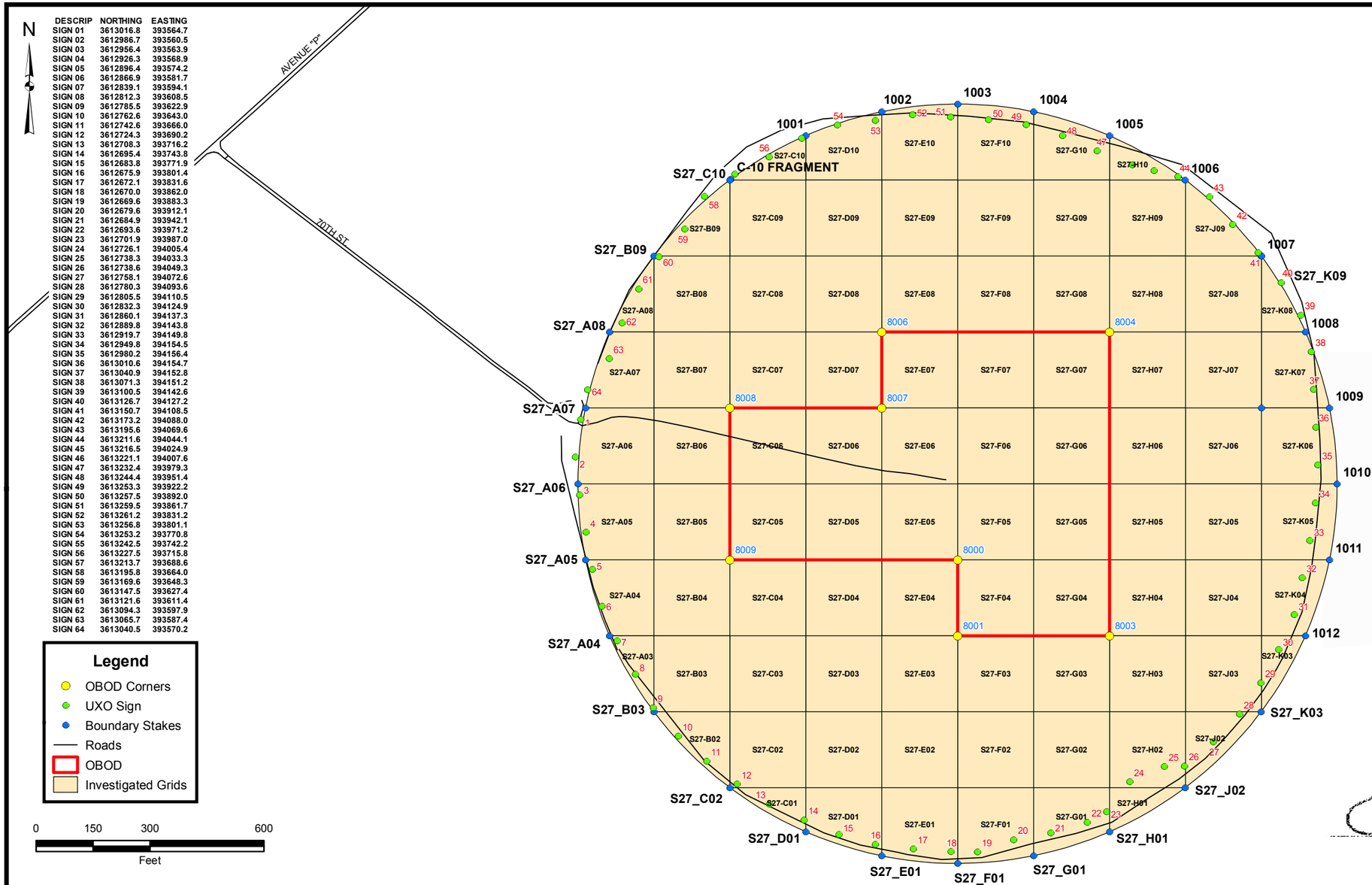


Figure B-5: Site 54 MEC/MPPEH Location Map

DESCRIP	NORTHING	EASTING
SIGN 01	3613016.8	393564.7
SIGN 02	3612986.7	393560.5
SIGN 03	3612956.4	393563.9
SIGN 04	3612926.3	393568.9
SIGN 05	3612896.4	393574.2
SIGN 06	3612866.9	393581.7
SIGN 07	3612839.1	393594.1
SIGN 08	3612812.3	393608.5
SIGN 09	3612785.5	393622.9
SIGN 10	3612762.6	393643.0
SIGN 11	3612742.6	393666.0
SIGN 12	3612724.3	393690.2
SIGN 13	3612708.3	393716.2
SIGN 14	3612695.4	393743.8
SIGN 15	3612683.8	393771.9
SIGN 16	3612675.9	393801.4
SIGN 17	3612672.1	393831.6
SIGN 18	3612670.0	393862.0
SIGN 19	3612669.6	393883.3
SIGN 20	3612679.6	393912.1
SIGN 21	3612684.9	393942.1
SIGN 22	3612693.6	393971.2
SIGN 23	3612701.9	393987.0
SIGN 24	3612726.1	394005.4
SIGN 25	3612738.3	394033.3
SIGN 26	3612738.6	394049.3
SIGN 27	3612758.1	394072.6
SIGN 28	3612780.3	394093.6
SIGN 29	3612805.5	394110.5
SIGN 30	3612832.3	394124.9
SIGN 31	3612860.1	394137.3
SIGN 32	3612889.8	394143.8
SIGN 33	3612919.7	394149.8
SIGN 34	3612949.8	394154.5
SIGN 35	3612980.2	394156.4
SIGN 36	3613010.6	394154.7
SIGN 37	3613040.9	394152.8
SIGN 38	3613071.3	394151.2
SIGN 39	3613100.5	394142.6
SIGN 40	3613126.7	394127.2
SIGN 41	3613150.7	394108.5
SIGN 42	3613173.2	394088.0
SIGN 43	3613195.6	394069.6
SIGN 44	3613211.6	394044.1
SIGN 45	3613216.5	394024.9
SIGN 46	3613221.1	394007.6
SIGN 47	3613232.4	393979.3
SIGN 48	3613244.4	393951.4
SIGN 49	3613253.3	393922.2
SIGN 50	3613257.5	393892.0
SIGN 51	3613259.5	393861.7
SIGN 52	3613261.2	393831.2
SIGN 53	3613256.8	393801.1
SIGN 54	3613253.2	393770.8
SIGN 55	3613242.5	393742.2
SIGN 56	3613227.5	393715.8
SIGN 57	3613213.7	393688.6
SIGN 58	3613195.8	393664.0
SIGN 59	3613169.6	393648.3
SIGN 60	3613147.5	393627.4
SIGN 61	3613121.6	393611.4
SIGN 62	3613094.3	393597.9
SIGN 63	3613065.7	393587.4
SIGN 64	3613040.5	393570.2

DESCRIP	NORTHING	EASTING
8000	3612904.2	393867.3
8001	3612843.2	393867.3
8003	3612843.2	393989.2
8004	3613087.0	393989.2
8006	3613087.1	393806.4
8007	3613026.1	393806.4
8008	3613026.1	393684.4
8009	3612904.2	393684.4

DESCRIP	NORTHING	EASTING
1001	393745.4	3613244.5
1002	393806.4	3613263.8
1003	393867.3	3613269.9
1004	393928.3	3613263.8
1005	393989.2	3613244.5
1006	394050.1	3613209.0
1007	394111.0	3613148.0
1008	394146.5	3613087.0
1009	394165.8	3613026.1
1010	394171.9	3612965.1
1011	394165.8	3612904.2
1012	394146.5	3612843.2
C-10 FRAGMENT	393685.2	3613209.4
S27_A04	393588.0	3612843.2
S27_A05	393568.7	3612904.2
S27_A06	393562.5	3612965.1
S27_A07	393568.6	3613026.1
S27_A08	393587.9	3613087.1
S27_B03	393623.5	3612782.3
S27_B09	393623.5	3613148.0
S27_C02	393684.6	3612721.3
S27_C10	393684.4	3613209.0
S27_D01	393745.4	3612685.9
S27_E01	393806.4	3612666.6
S27_F01	393867.3	3612660.5
S27_G01	393928.3	3612666.7
S27_H01	393989.3	3612686.0
S27_J02	394049.9	3612721.3
S27_K03	394110.9	3612782.3
S27_K07	394111.2	3613026.1
S27_K09	394111.2	3613147.9



Legend

- OBOD Corners
- UXO Sign
- Boundary Stakes
- Roads
- OBOD
- Investigated Grids

0 150 300 600
Feet

Datum: NAD83 UTM
Monument: Longhorn Army Ammunition Plant
Monument BG-1 with coordinates
NORTHING-3614801.46,
EASTING-395385.09

I, David R. Collins, Registered Professional Land Surveyor No. 1954, do hereby certify that this plat correctly represents the results of a survey made under my supervision August 4 through September 23, 2008.

Principal of the firm: _____

SUXOS: _____

Figure B-6: Site 27 Survey Certification Map

EODT
EOD TECHNOLOGY, INC.

DESCRIP	NORTH	EAST	DESCRIP	NORTHIN	EASTING
SIGN 1	3614179.4	395143.2	1013	395068.6	3613625.2
SIGN 10	3613984.2	394959.8	1014	395005.1	3613686.2
SIGN 11	3613954.6	394952.4	1015	394997.4	3614072.1
SIGN 12	3613924.6	394947.4	1016	395058.4	3614135.6
SIGN 13	3613894.1	394947	1017	395180.3	3614195.0
SIGN 14	3613863.7	394949.6	1018	395241.3	3614203.9
SIGN 15	3613833.8	394955.1	1019	395302.2	3614200.9
SIGN 16	3613803.8	394959.8	1020	395363.2	3614185.9
SIGN 17	3613774.4	394967.8	1021	395392.4	3614173.9
SIGN 18	3613745.2	394976.7	1022	395424.1	3614156.7
SIGN 19	3613718.3	394991.2	1023	395480.2	3614112.9
SIGN 2	3614163.4	395117.3	1024	395485.1	3614108.0
SIGN 20	3613694.6	395010.3	1025	395528.9	3614051.9
SIGN 21	3613672.4	395031.1	1026	395546.1	3614020.2
SIGN 22	3613651.1	395052.8	1027	395558.0	3613991.0
SIGN 23	3613632.6	395077	1028	395573.1	3613930.0
SIGN 24	3613616.8	395103.1	1029	395576.0	3613869.1
SIGN 25	3613602.8	395130	1030	395567.2	3613808.1
SIGN 26	3613591	395158.1	1031	395507.7	3613686.2
SIGN 27	3613583.5	395187.6	1032	395444.2	3613625.2
SIGN 28	3613579.1	395217.8	S54_A04	394967.3	3613747.1
SIGN 29	3613578.7	395248.2	S54_A06	394936.8	3613869.1
SIGN 3	3614147.8	395091.2	S54_A07	394939.8	3613930.0
SIGN 30	3613579.6	395278.7	S54_A08	394954.8	3613991.0
SIGN 31	3613584.2	395308.8	S54_A09	394983.9	3614051.9
SIGN 32	3613591.4	395336.3	S54_B03	394997.4	3613696.4
SIGN 33	3613599.5	395365.6	S54_B06	394997.4	3613808.1
SIGN 34	3613611	395393.8	S54_B06	394945.7	3613808.1
SIGN 35	3613626.8	395419.8	S54_B06	394997.4	3613869.1
SIGN 36	3613644.2	395444.8	S54_B07	394997.4	3613930.0
SIGN 37	3613663.6	395468.2	S54_B08	394997.4	3613991.0
SIGN 38	3613686.5	395488.2	S54_B09	394997.4	3614051.9
SIGN 39	3613710.2	395507.5	S54_B10	395032.6	3614112.9
SIGN 4	3614130.2	395066.2	S54_C02	395058.4	3613633.0
SIGN 40	3613735.9	395523.8	S54_C10	395058.4	3614112.9
SIGN 41	3613763	395537.5	S54_D01	395119.3	3613595.1
SIGN 42	3613791.2	395548.8	S54_D11	395119.4	3614173.3
SIGN 43	3613820.6	395556.7	S54_E01	395180.3	3613573.5
SIGN 44	3613850.5	395562.3	S54_F01	395241.3	3613564.6
SIGN 45	3613880.9	395562.2	S54_G01	395302.2	3613567.6
SIGN 46	3613911.3	395561	S54_H01	395363.2	3613582.6
SIGN 47	3613941.4	395556.7	S54_H02	395363.1	3613625.2
SIGN 48	3613971.3	395550.8	S54_J01	395424.1	3613611.8
SIGN 49	3613999.9	395540.5	S54_J02	395424.1	3613625.2
SIGN 5	3614110.1	395043.4	S54_K02	395485.1	3613660.5
SIGN 50	3614027.4	395527.5	S54_K03	395485.1	3613686.2
SIGN 51	3614053.7	395512.2	S54_LO4	395545.5	3613747.1
SIGN 52	3614078.9	395495.2			
SIGN 53	3614102.3	395475.8			
SIGN 54	3614122	395452.6			
SIGN 55	3614139.3	395427.5			
SIGN 56	3614155.8	395401.9			
SIGN 57	3614169.5	395374.8			
SIGN 58	3614179.6	395346			
SIGN 59	3614186.8	395316.5			
SIGN 6	3614087.5	395022.9			
SIGN 60	3614191.9	395286.4			
SIGN 61	3614192.1	395255.9			
SIGN 62	3614190.3	395225.5			
SIGN 63	3614185.9	395195.4			
SIGN 64	3614182	395167.9			
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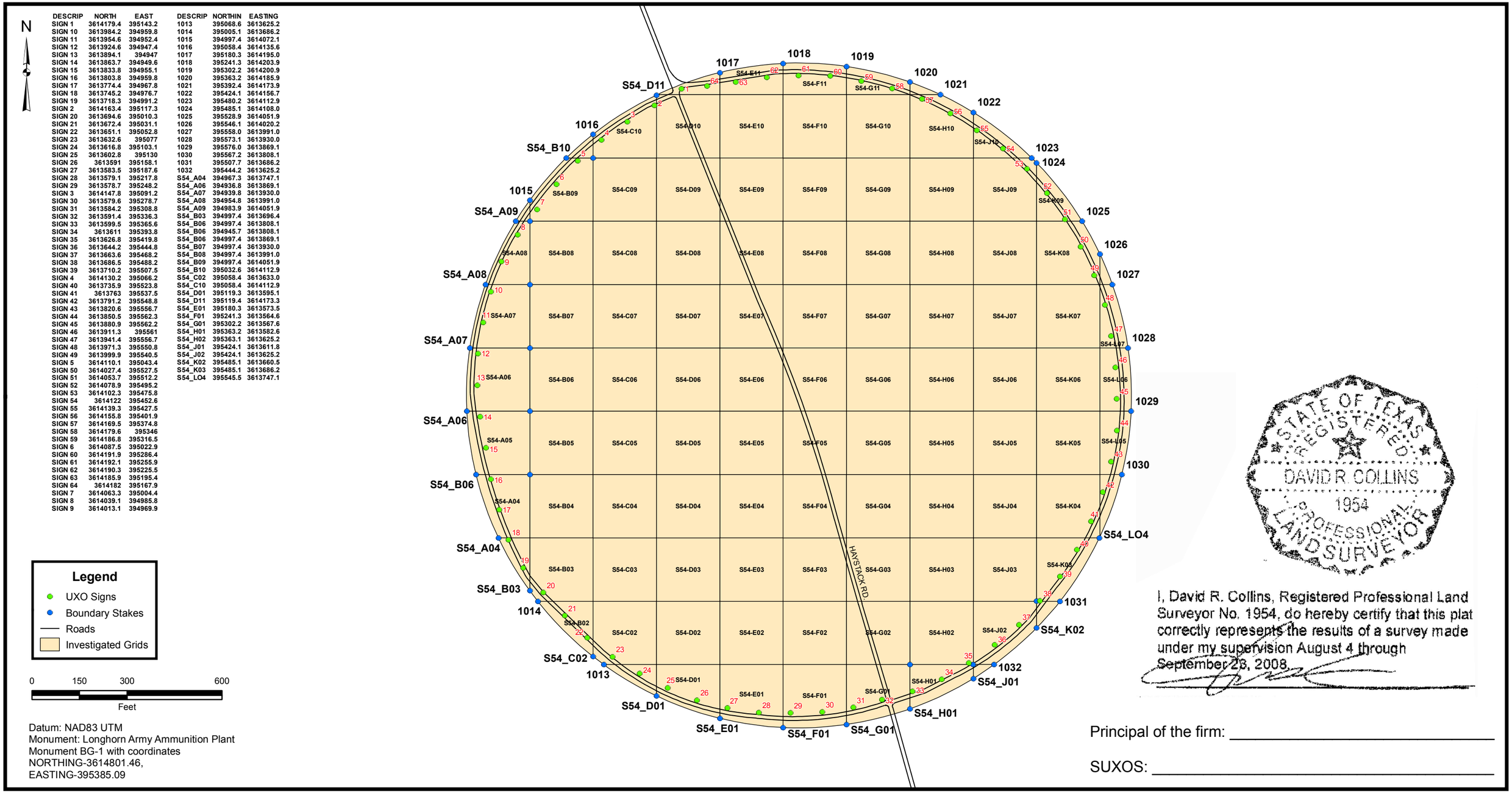
SIGN 8	3614039.1	394985.8			
SIGN 9	3614013.1	394969.9			



Legend
- UXO Signs
- Boundary Stakes
- Roads
- Investigated Grids

0 150 300 600
Feet

Datum: NAD83 UTM
Monument: Longhorn Army Ammunition Plant
Monument BG-1 with coordinates
NORTHING-3614801.46,
EASTING-395385.09

STATE OF TEXAS
REGISTERED
DAVID R COLLINS
1954
PROFESSIONAL
LAND SURVEYOR

I, David R. Collins, Registered Professional Land Surveyor No. 1954, do hereby certify that this plat correctly represents the results of a survey made under my supervision August 4 through September 28, 2008.

Principal of the firm: _____

SUXOS: _____

Figure B-7: Site 54 Survey Certification Map

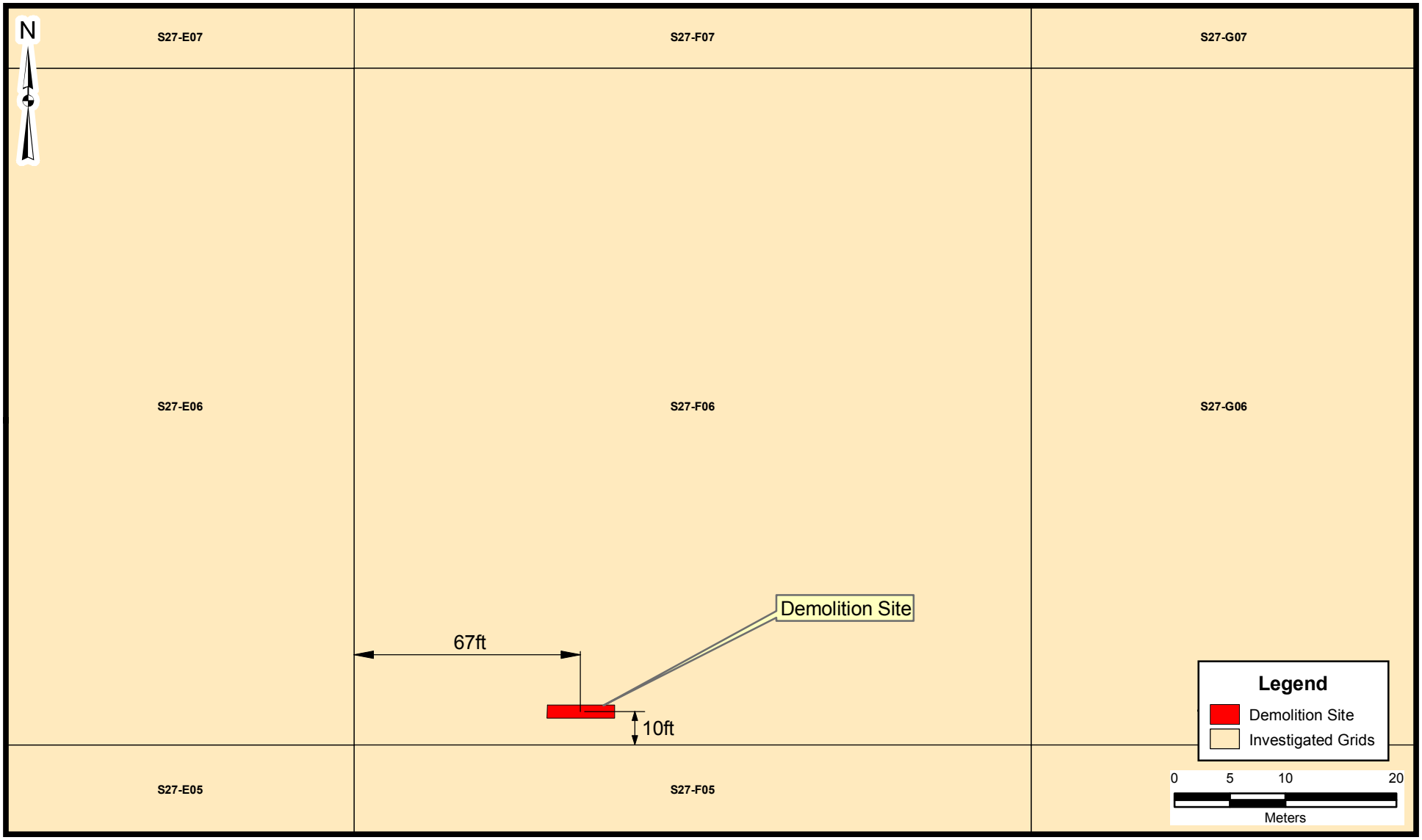


Figure B-8: Grid S27-F06 Previous Demolition Site Location - Site 27

APPENDIX C
OPERATIONS PHOTOS

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

APPENDIX C
OPERATIONS PHOTOS

Photo 1: 155mm Illumination Rounds

Photo 2: 155mm Illumination Rounds Staged for Destruction

Photo 3: Western Half of Site 54 Before Brush Cutting

Photo 4: Western Half of Site 54 After Brush Cutting

Photo 5: S54-G08 Scrap

Photo 6: Field Crew

Photo 7: 26 Test Plot

Photo 8: Shaun Woods Testing

Photo 9: QC Check on MPPEH/MD from S54-D06

Photo 10: QC Check on Scrap

Photo 11: Survey Crew

Photo 12: 155mm Illumination Cartridges

Photo 13: 155mm Illumination Cartridges

Photo 14: OB/OD Clearance

Photo 15: OB/OD

Photo 16: Shaun Woods and Yasir Adulrahman Working Standing Body of Water

Photo 17: Working Standing Body of Water

Photo 18: Working Standing Body of Water

Photo 19: Working Standing Body of Water

Photo 20: Working Standing Body of Water

Photo 21: Working Standing Body of Water

Photo 22: Working Standing Body of Water

Photo 23: Working Standing Body of Water

Photo 24: Working Standing Body of Water

Photo 25: Site 54 MD and Scrap Metal

Photo 26: Site 54 MD and Scrap Metal

Photo 27: Site 54 MD and Scrap Metal

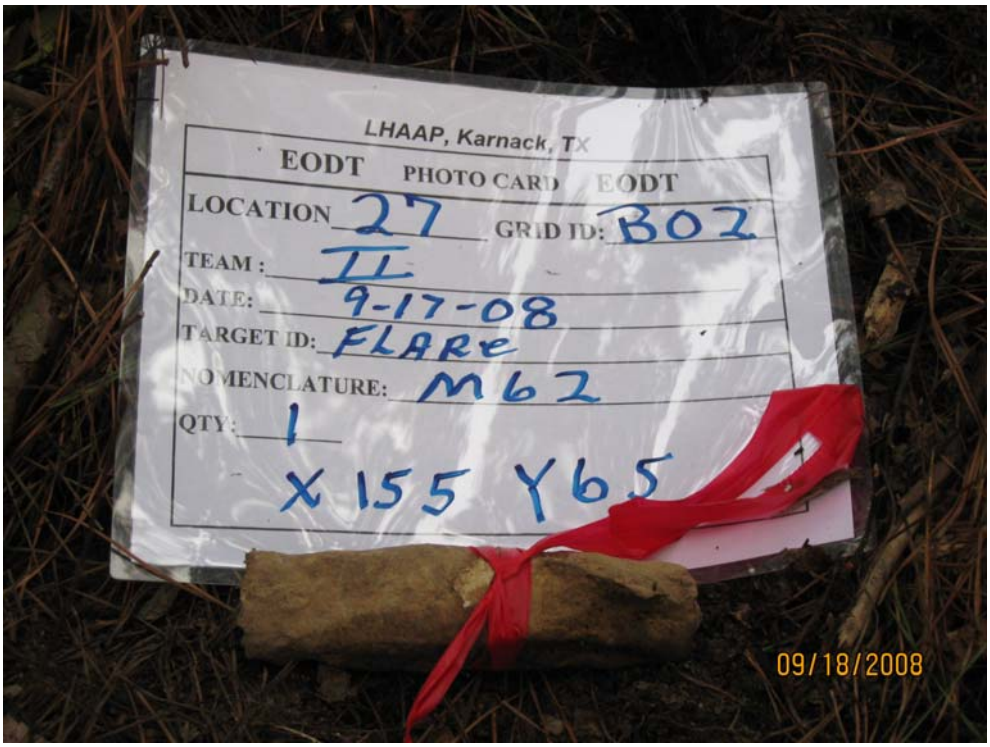


Photo 28: S27-B02 M62 Flare

Photo 29: S27-B02 M112 Flare

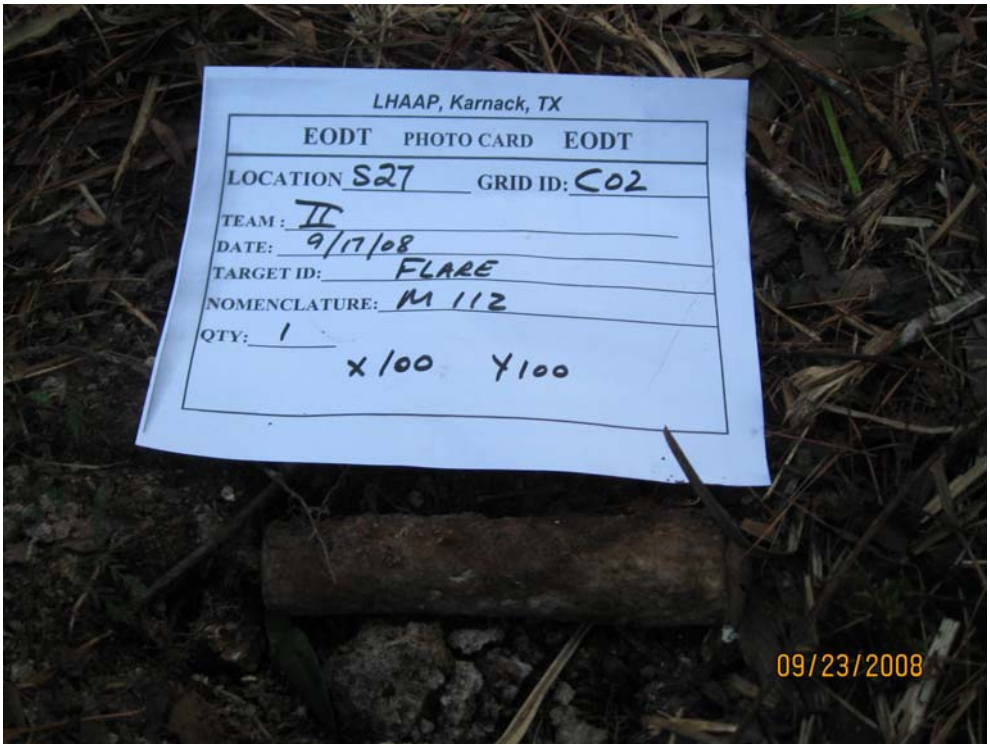


Photo 30: S27-C02 M112 Flare

Photo 31: S27-C03 M62 Flare

Photo 32: S27-D03.1 M62 Flare

Photo 33: S27-D03.2 M62 Flare

Photo 34: S27-D05.1 M112 Flare

Photo 35: S27 D05.16 M112 Flare

Photo 36: S27 E03.1 M112 Flare

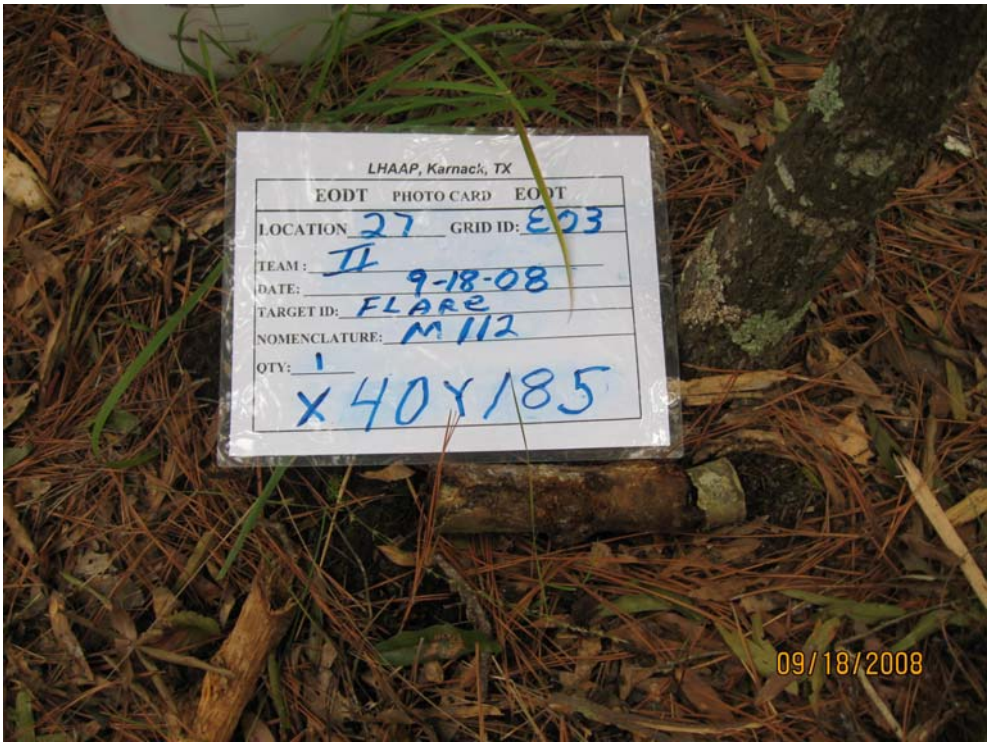


Photo 37: S27 E03.2 M112 Flare

Photo 38: S27 E03.3 M112 Flare

Photo 39: S27 E03.4 M112 Flare

Photo 40: S27 E03.5 M112 Flare

Photo 41: S27 E03.6 M112 Flare

Photo 42: S54 D06 MEC Scrap Ready for QC Check

Photo 43: MD/Scrap Metal

Photo 44: Trail to Site 27 Before Brush Cutting

Photo 45: Trail to Site 27 After Brush Cutting

Photo 46: Training Sweepers

APPENDIX D
SENIOR UXO SUPERVISOR LOG

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
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Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

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EODT Senior UXO Supervisor Daily Log
OE Removal Action, Longhorn Army Ammunition Plant
Karnack, TX

Date	Time	Event
3 Aug 08 Sunday	XXXX	Mobilization to Marshall, TX
4 Aug 08 Monday	0700	Muster on site personnel at motel room. PM: **Brian Gentry** Safety: **Robert Thomas** Survey Lead: **John Clark** Survey/UXOII: **Jathan Futral** UXO III: **Charlie Overstreet** UXO III: **Jason Birchfield** UXO III: **William Czech**
	0800	Mustered Brush crew personnel.
	0820	Survey Crew arrived.
	0830	Depart for site.
	0905	Arrive at Site. No site facilities. (Awaiting storage container / site office trailer / porta johns etc.)
	0915	Site and Safety brief. Preparatory Phase inspections completed.
	0940	Brush crew and escort depart for Site 54. (1 machine and 3 ground personnel)
	0945	Survey crew and escort depart for Site 54. (One two man team)
	0940	Site tour. (Site 54, 27, magazine area)
	1050	Equipment storage container arrived (40'). Down loaded and established.
	1200	Lunch
	1230	Started down load of all equipment brought to site. (Cargo trailer and 2 ea. wood shipping containers.) Extremely Hot…106 degrees.
	1730	Site Secured.
5 Aug 08 Tuesday	0600	Morning Muster and Safety Brief.
	0620	Brush crew and Survey crew depart for Site 54, with escorts.
	0630	Continue equipment unpacking and inventory.
	0840	Out to check on Brush and Survey.
	1000	Designated area for "Test Strip". Cleared of all anomalies.
	1230	Completed establishment of "Test Strip" (10'X20'), 15 test items placed IAW requirements.

Date	Time	Event
5 Aug 08 Tuesday (cont)	1300	Lunch
	1330	Out to check on Field teams.
	1450	Working logistics for site trailer, electrical hook up, explosive storage, and met with Shaw and Fish and Wild Life personnel. Having problems with Enterprise Rental….unable to accommodate our request for three mid size SUVs
	1628	Brush crew in from the field. Debriefed and secured. Survey having problems, will need to stay for a while longer.
	1910	Survey crew secured.
	1920	Site Secured.
6 Aug 08 Wednesday	0600	Muster and Safety Brief.
	0620	Brush and Survey departed for Site 54, with escort.
	0850	Site trailer arrives (23', very small. Need to pass on to who ever arranges these to consult with SUXOS)
	0902	Jim Craig (Electrician for power hook up) arrives on site.
	0910	Site trailer off load and set up and electrical hook up in progress.
	1005	We now have our equipment properly stowed and we have an office to establish.
	1030	Moving office equipment and supplies in. Enterprise Rental has 1 SUV and two 4 door pickups. Will pick up at 1200.
	1205	Picked up rental vehicles at the Super 8 motel. 1 ea. mid size SUV and 2 ea. four door pickups. (SUXOS, Safety, QC)
	1230	Lunch
	1320	Continue to set up office spaces and re-organize equipment storage container.
	1350	Out to check on field teams.
	1630	Secured Site
7 Aug 08 Thursday	0600	Muster and Safety Brief
	0615	Brush crew departs for Site 54, with escort.. (Survey crew late)
	0650	Survey crew on site. Given safety brief.
	0700	Survey crew departs for Site 54, with escort.
	0710	Continue working equipment, supplies and setting up site trailer. Internet is no functional. This will be a problem.
	0920	Out to check on crews.
	1135	Back at office.

Date	Time	Event
	1200	Lunch
7 Aug 08 Thursday	1625	Crews in from the field
	1630	Secured site.
8 Aug 08 Friday	0600	Muster and Safety Brief (Safety, Brush crew and escort)
	0615	Brush crew departs for Site 54, with escorts.
	0900	Out to check on Brush.
	1105	Received call from driver bringing in the explosive magazine. He about 45 minutes out. Provided directions and meeting place.
	1135	Received call from driver bringing forklift. He about 20 minutes out. Provided same.
	1203	Magazine at main gate.
	1205	Forklift at main gate.
	1207	Safety and I escort trucks to magazine storage area.
	1235	Magazine in place, drivers escorted back to main gate.
	1245	Checked on Brush crew.
	1410	Departed site.
9 Aug 08 Saturday	0600	Muster and Safety Brief (Safety, Brush crew and escort)
	0610	Brush crew departs for Site 54, with escorts. Envirogrind has brought in an additional machine and three additional personnel.
	0920	Checked on Brush crew.
	1200	Lunch
	1425	Checked on Brush crew. Doing OK.
	1630	Secured Site.
11 Aug 08 Monday	0600	Muster and Safety Brief (All personnel, Brush, Survey, UXO Techs, and Sweep personnel on site – see weekly for list of personnel).
	0615	Brush and Survey depart for Site 54, with escorts.
	0645	Start administrative processing of all new personnel. See Initial Training outline for details.
	0800	Start Indoctrination and Training for all new personnel.
	1200	Lunch
	1235	Continue Indoctrination and Training
	1630	Secured Site.

Date	Time	Event
	1755	Departed Site.
12 Aug 08 Tuesday	0600	Weather…Rain and scattered Thunder storms forecasted for the day. Cancelled all training activities. All personnel who came in were given 2 hrs credit for work. Brush clearance team and sub-contractor crew have elected to work, provided two UXO II escorts. Management staff working on much needed paperwork backlog.
	1020	Checked on crews in the field (Brush and Survey). Rain sporadic, no lightning yet.
	1230	Lunch
	1305	Continue administrative paperwork establishment. (SUXOS. Safety. (QC and FOA.)
	1440	Checked on crews in field (Brush and Survey).
	1620	Crews in from the field (Brush and Survey).
	1630	Secured Site.
13 Aug 08 Wednesday	0600	Muster and Safety Brief (All personnel, Brush, Survey, UXO Techs, and Sweep personnel)
	0615	Brush and Survey depart for Site 54, with escorts.
	0630	Passed out team assignments.
	0645	Continue Indoctrination and field training.
	1200	Lunch
	1230	Continue Indoctrination and field training.
	1630	Secured Site.
	1810	Depart Site.
14 Aug 08 Thursday	0600	Muster and Safety Brief (All personnel, Brush, Survey, UXO Techs, and Sweep personnel)
	0630	Team field training
	0840	Out to check on crews and training evolutions.
	1200	Lunch
	1230	Started Locator test strip testing. (T/Ls and UXO techs)
	1310	Three Gator (AT/UV) delivered by RSC. One without seat belts and one with two bald tires. Called RSC and they will correct the deficiencies.
	1335	Continue Locator test strip testing. (Sweep personnel)
	1400	Gator training. (Inspection, pre-start, basic controls and operation)

Date	Time	Event
	1420	RSC service truck on site. Seat belts installed on deficient unit.
	1430	Started Gator practical driving training and qualification.
14 Aug 08 Thursday	1500	Vehicle Inspections / final equipment check out by teams, while remainder complete Gator practical.
	1535	Safety told me there was a problem with Team 2's truck. Two of the rear seat belts are broken and non-functional. It had been identified during inspection. Requested that safety confirm and take appropriate actions.
	1545	Gator training completed.
	1600	Final training out brief. Reviewed next weeks schedule with crew.
	1630	Secured Site.
	1720	Received 2,500' of line from Logistics, waiting when I got back to Motel.
15 Aug 08 Friday	0600	Muster and Safety Brief (Safety, Brush escort and Brush crew) Safety: Tom Hinote / Escort: Jathan Futral
	0900	Took EODT Ford 150 to local dealership to have defected rear seat belts replaced. Must have been a mix up between Site Safety and who ever he talked with. Wrong dealership, called Safety and he wasn't sure who he talked to. Local dealership placed belts on order and I will take the truck back tomorrow morning.
	1100	Working on site paperwork.
	1330	Call IMR regarding scrap bins. Problems with their trucks. Delivery re-scheduled for Monday mid-morning. PM advised.
	1500	Check with Tom Hinote, everything going well with Brush cutters.
	1630	Secured Site.
16 Aug 08 Saturday	0600	Muster and Safety Brief (Safety, Brush escort and Brush crew) Safety: Chuck Overstreet / Escort: Manny Repollett
	0830	Billy Czech and I depart for local Ford dealership to get seatbelts replaced.
	1020	Truck ready for pick up. Billy Czech and I depart motel to pick up truck.
	1050	Truck back at motel…turned over to Team Leader, assigned to Team 2 (Billy Czech)
	1100	Depart for site.
	1135	On site. Brush crew doing OK.
	1155	During check of equipment discovered the "Gator" with "reported bald tires" had a flat on the driver's front tire. Called RSC with no luck. We can not expect support until possibly late Monday morning, at the best.

Date	Time	Event
	1240	Working on daily reports, Monday's team assignments, and finalizing required supporting paperwork and grid sheets.
	1510	Brush crew departs for the day. (Early day)
16 Aug 08 Saturday (continued)	1535	Safety and brush escort secured.
	1730	Secured Site. Departed for motel.
18 Aug 08 Monday	0505	Arrived at site trailer
	05XX	Received call from Tom Hinote….Reported that one of our company trucks had been involved in an accident at the intersection in front of the main gate to the Former Longhorn Army Ammunition Plant. Tom said all involved were walking around and appeared OK.
	0535	Departed for accident scene. Talking with ACOE Safety Specialist, advised him of situation, he is following sheriffs vehicle to main gate.
	0540	Arrived at accident site. Truck flipped and was lying upside down. All 4 passengers were walking around and coherent but appeared to have potential injuries. Driver of second vehicle was also walking around and coherent. County Sheriffs on scene.
	XXXX	Ambulance arrives
	XXXX	Accident victims being looked at by medical personnel on scene.
	XXXX	Second party and Kevin Klein being transported to Marshal Hospital. Second ambulance in route. Safety departs for hospital with first group.
	XXXX	Matt Abbott and Bill Jones transport to Marshall hospital. Pat Hinote road in ambulance with personnel.
	XXXX	Took William Czech (driver) to ER. He had earlier declined medical treatment. He was showing signs of pain/injury.
	XXXX	Talked with State Trooper at ER and verified he had no concerns with DUI issues. Verified a citation for Failure to Yield ROW issued to William Czech. Got personal information on second party
	1030	Instructed Tom Hinote (QC) to get teams in the field and start working assigned grids.
	XXXX	Checked with medical staff…They have indicated all personnel involved were OK with the exception of William Czech who has fractured ribs. He will be released with limitations on lifting.
	XXXX	Departed hospital with Pat Hinote (FOA) and Anita Thomas (UXOI) who was assisting with personnel, returned to site. Robert Thomas remaining back to support and transport personnel as required.

Date	Time	Event
	XXXX	All personnel released from hospital. Told Safety to let them stop off get some chow.
18 Aug 08 Monday	1205	All accident personnel on site. Safety getting statements and working on required paperwork. Guys are sore and a bit banged up. Not putting them in the field, after required interviews and paperwork sending them home to rest and recuperate.
	1450	Accident victims being transport back to motels. Those that had vehicles drove home.
	1520	Out to check on teams and provide update.
	1605	All personnel in from the field
	1630	Site secured
	1840	Depart site
19 Aug 08 Tuesday	0600	Muster and Safety Brief
	0615	Brush crew and escort depart for Site 54
	0630	Teams depart for Site 54
	0850	Out to check on teams (Advised Billy Czech that his driving privilege of EODT vehicles has been suspended until further notice by Corporate)
	1130	Back at office
	1205	Lunch
	1235	Out to check on teams
	1455	Back at office
	1515	Admin
	1610	Teams in from the field
	1635	Secured site
	1820	Depart site
20 Aug 08 Wednesday	0600	Muster and Safety Brief
	0615	Brush crew departs fro Site 54 with escort.
	0633	Teams depart for Site 54.
	0915	Out to check on teams
	1120	Back at office
	1130	Admin duties
	1200	Lunch
	1230	Out to check on teams

Date	Time	Event
	1435	Back at office
	1530	Paperwork
20 Aug 08 Wednesday (continued)	1620	Teams in from the field
	1630	Site Secured
	1740	Depart site.
21 Aug 08 Thursday	0600	Muster and Safety Brief / Vehicle Inspections. (Verbally counseled Billy Czech on his unsafe driving and his responsibilities to insure all personnel in company vehicles wear seat belts. He acknowledged his responsibilities and his suspension of driving privileges. Advised Billy that any further safety violations would result in my recommendation for his termination). (Verbally counseled Kevin Klein on his violation of company seat belt policy and warned that any future violation would result in my recommending his termination. He acknowledged this warning and indicated he would comply with all company safety policies)
	0615	Brush crew and escort depart for Site 54
	0630	Teams depart for Site 54
	0800	Start follow-up on internet and repeater activation
	0830	Escorted 1 brush machine out magazine area to clear around magazine (Required by USACE Safety Rep)
	0905	Brush machine and escorts depart for Site 27
	0945	Out to check on teams
	1115	Back at office
	1200	Lunch
	1230	Out to check on teams
	1245	Safety put site on lightning hold as a result of indications on lightning meter (Thunderbolt) None seen or heard.
	1315	Safety lifted lightning hold. Seems meter doesn't work well in the vehicle when it is running. Picking up EMRs and giving false readings.
	1350	Assigned second brush escort on Site 54. Hand cutting crews area separating.
	1600	Brought all crews in from the field. Weekly out brief, weekend driving/safety. Issued EODT shirts.
	1630	Site Secured
	1700	Call from Vanessa of Fish and Wildlife, we have a package that was dropped off. After a brief conversation it turned out to be an explosive delivery.

Date	Time	Event
	1710	Tom Hinote and I depart to pick up package and place in magazine. Turned out to be 50 ea. perforators. Items secured and paperwork completed.
	1745	All management personnel depart.
21 Aug 08 Thursday	1850	Depart site. Nothing heard from Windstream who were suppose to be on their way to hook up internet.
22 Aug 08 Friday	1750	Depart for Hospital to check on Chuck Overstreet was has gone to the ER to have his Poison Ivy rash/reaction checked out.
25 Aug 08 Saturday	0600	Muster and Safety Brief
	0615	Brush crew and escort out (Site 54 and 27)
	0630	Teams out to Site 54. Have combined Teams 1 and 2. Billy Czech (T/L Team 2) back on site. (Verbal counseling regarding the accident as well as his responsibilities as Team Leader in regards to Safety. Let him know I have been told by PM that he is not to drive EODT or rental vehicles for 1 year. But he is still allowed to operate our "Gators" and any other off road vehicle/equipment on site.)
	0650	Meeting with Safety and QC.
	0715	Working with FOA on expense reports.
	0905	Out to check on teams and get expense reports signed.
	1010	Call from Austin Power, driver inbound with booster.
	1030	Escorting driver to magazine, Safety with us.
	1045	Received and stored 60 Black Cap Boosters
	1055	Safety escorting driver out. Depart for Site 27.
	1130	Call checking status of repeater activation……pending.
	1150	Brush crew on Site 27 doing OK.
	1210	Depart for office.
	1315	Out to Site 54 to check on crews. Still no repeater. And it looks like we will have to start over on the internet issue.
	1440	Back at office.
	1455	Repeater activated and working. Switched all personnel to repeater channel for radio checks, we now have solid communication at all sites, even in the Marshall area. Safety was in town and I had good communications with him.
	1610	Teams in from the field.
	1625	FEDEX arrives with detonating cord.
	1630	Site secured.

Date	Time	Event
	1640	Tom Hinote and I depart for magazine to place det cord in magazine.
	1820	Depart Site.
25 Aug 08 Saturday	1945	Completed daily report and sent out.
	1950	End of the Day.
26 Aug 08 Sunday	0600	Muster and Safety Brief
	0615	Brush crew departs for Site 27.
	0630	Teams out to Site 54.
	0700	Admin
	0855	Out to check on the teams.
	1145	Returned to office.
	1200	Lunch
	1310	Out to check on teams.
	1655	Returned to office.
	1510	FedEx arrives with blasting caps and shock tube.
	1520	Safety and I depart to place items in magazine.
	1545	Back at office.
	1610	Crews in from the field.
	1630	End of the day.
27 Aug 08 Monday	0600	Muster and Safety Brief
	0615	Brush crew departs for Site 27.
	0630	Teams out to Site 54.
	0750	Out to check on teams.
	1015	Back at office.
	1120	Stopped by Fish & Wildlife to arrange receipt of “Icebox” commo package tomorrow.
	1200	Depart site / fueled truck / sent out yesterday’s daily report from my room.
	1300	Picked up John Clark at motel and departed for airport.
	1335	Dropped John Clark off at airport. Returning to site.
	1420	Arrived back on site.
	1500	Jonathan McCarty (1st Choice Sweep personnel) brought in from the field. He had complained of feeling light headed and felt like he was going to faint. Team Leader took correct actions by putting him in a vehicle w/ AC, water and

Date	Time	Event
		monitoring him. Safety was contacted and in route.
27 Aug 08 Monday (continued)	1530	Jonathan arrived at office. Indicated he was fine. His mother is in route to take him home. Note: Jonathan has been a substandard performer since day one. Considerable time has been spent by management, Team leaders, and UXO Techs, trying to help him come up to a minimal acceptable level of work and quality. He has required constant supervision and seems to do as little as he can. Frequent and long restroom (porta-john) trips, excessive requirements for breaks, and constant reminders to get back to work have been a daily issue. I contacted 1st Choice earlier before this event and we were discussing the very real possibility of placing Jonathan on the standby list and bring in someone more suited for this type of work.
	1545	Directed Jonathan to report to 1st Choice first thing in the morning. Jonathan departs site with his mother. I explained to his mother what happened and actions taken.
	1550	Called 1st Choice and briefed on situation.
	1600	Notified PM of situation.
	1610	Crews in from the field.
	1630	Site secured.
	1655	Call from Trae Brown (1st choice). Discussed situation with Jonathan; she will contact individuals on standby-list for potential training Tuesday, 2 Sep 08)
	1720	Depart Site.
28 Aug 08 Tuesday	0600	Muster and Safety Brief
	0615	Brush crew departs for Site 27.
	0630	Teams out to Site 54.
	0735	Explosive inventory (SUXOS/QC)
	0815	Working on PSR with FOA
	0840	Call from 1st Choice…Jonathan McCarty will be moved to the back-up list.
	0900	Out to check on teams.
	1210	Back at office
	1230	Called 1st Choice regarding the excessive absences of two individuals.
	1300	Call back from 1sr Choice. One was in jail (traffic tickets) the other was suffering from a stomach virus. Was assured both will be here next Tuesday. We will be conducting training for the two back up personnel on Tuesday.
	1320	Out to check on teams
	1535	Back at office

Date	Time	Event
	1610	All field teams in
28 Aug 08 Tuesday (continued)	1625	Out brief / Weekend safety
	1630	Site Secured
	1800	Departed site. ("Icebox system not delivered here as planned.)
	1840	At Motel. "Icebox" system delivered to the motel.
	1900	End of the Day.
29 Aug 08 Wednesday	0700	Received e-mail from Jet Research regarding shipment and receipt of demo materials. They dropped both shipments off without getting anyone signing for them. (perforators and det cord). Printed out paperwork and will FAX out this morning.
	1130	Call from Manny Repollet, he has not been paid. All other personnel have received earned pay. E-mail to Gina Grizzard, cc to Brian Gentry. Call into Gina, not available yet. Also have call into Stuart regarding per diem payments due today. Will continue to pursue; crew is working hard and one thing they depend on is being paid on time for their efforts.
	1210	Called Kelly Walker regarding per diem. She assured me that despite the delays that all per diem would be posted by COB today.
	1800	Guess corporate has different values and priorities than those in the field. No Per Diem. E-mail sent to Kelly and cc: PM. This is totally UNSAT. 4 day weekend and the working crew goes without AGAIN. Will follow up Tuesday morning. .NOT happy with corporate / PM concern and support.
	1900	Final check on e-mail etc. End of the Day
1 Sep 08 Monday	0845	In preps for Gustav. At Site to check on facilities/Magazine. All OK.
	0930	Working on White's program to possibly reduce amount of smaller anomalies during sweeps.
	1120	Depart site, not a lot of luck on modifying program.
	1530	Attempted to call Team Leaders on work cells….no luck. Did get in touch with Safety. He is in-route and will be available tomorrow. Talked with Brush crew and they are on the road in bound.
	1545	Winds are increasing and rain has started sporadic, heavy/light.
	1600	Doesn't look good for tomorrow. Heavy rains, thunder storms, tornados, and high winds predicted. Will continue to contact Team Leaders in case I need to call tomorrow off early. Want Team Leaders to be able to shut down their people before they get on the road and it causes the project un-productive costs. Guess I have to remind all that they have responsibilities along with their positions. Greenhorn field personnel and Greenhorn Team Leaders. QC and

Date	Time	Event
		FOA in Pensacola; will try to get here sometimes tomorrow afternoon. Out of here.
1 Sep 08 Monday (continued)	1830	Finally contacted all three team leaders. Advised them I will be contacting them later tonight or early tomorrow morning and making a decision on whether we will be working.
	1840	Contacted Trae @ 1st Choice and briefed her on weather concerns. She agrees that in light that the center of the storm passing over us may be a good reason to call tomorrow off, (over 3 million people evacuated from the Gulf coast.)
	1930	Notified team leaders to call all assigned personnel and advise them we will NOT be coming in tomorrow (Tuesday, 2 Sept 08). Also told them to standby and wait for calls Tuesday night or Wednesday morning. Contacted Robert Thomas (Safety) and let him know I am calling tomorrow. Will see how Wednesday pans out.
2 Sep 08 Tuesday	0930	Out to site with Brush cutter crew who need to do maintenance on equipment.
	1020	Working on setting up "Ice box" internet system.
	1240	Brush cutting crew depart.
	1300	Have internet system set up and all systems seem to be working. Due to weather not able to receive a strong enough signal to actually log on. Weather should clear up in a few days.
	1335	Depart site.
	1500	Checking e-mail and notifying personnel that we will be coming in tomorrow unless they are called tomorrow am.
	1720	End of the Day. (Charging 5 hours)
3 Sep 08 Wednesday	0600	Muster and Safety Brief
	0615	Brush crew departs for Site 27.
	0630	Teams out to Site 54.
	0845	Out to check on teams
	1020	Back at office
	1030	Admin work
	1210	Lunch
	1305	Out to check on the teams
	1445	Out to Site 27 to check on Brush/Survey.
	1535	Back at office
	1610	All field teams in

Date	Time	Event
	1625	Daily 0ut brief
	1630	Site Secured
	1820	Departed site
4 Sep 08 Thursday	0600	Muster and Safety Brief. New personnel on site: Ricky Brown and Derrick Black, (1st Choice back up personnel) They are here for training and integration into the teams as a result of our recent personnel losses. (Two, 1st Choice moved from active to standby status due to excessive absences and/or poor performance).
	0615	Brush crew departs for Site 27.
	0630	Teams out to Site 54.
	0645	Conducted in brief for new personnel.
	0820	Turned new personnel over to Safety.
	1005	Provided White's locator training for new personnel.
	1115	Took new personnel out on a site tour and had them observe field operations.
	1150	Received call from Team 1 team leader requesting I come to his location. He has issues with one of his team members. Depart Site 27.
	1205	Brought new personnel back to site office for lunch.
	1215	Out to Team 1's location to remove Dajuan Wollen (sweep personnel) from the grid. Team leader indicated that his insubordination and work performance today has finally reached a point where he feels the individual is becoming a liability and negatively impacting production, safety, and quality. His performance, quality of work, attitude, and his overall ability to meet the basic minimum standards of what is expected and which has been achieved by the other 1st Choice personnel is extremely substandard. His insubordination displayed to his Team Leader and his constant failure to comply with basic safety standards along with his overall lack of work ethics is having a negative effect within his assigned team as well as production and quality. He will be directed to report to 1st Choice for counseling and his status will be pending.
	1245	Drove Dajuan Wollen to the main gate where his ride will pick him up.
	1525	Call from 1st Choice (Trea). Dajuan has been counseled by her and the company's safety manager. I indicated that I am reluctant to bring him back on site tomorrow. Will discuss matter with PM and make my decision on Monday, 8 Sep 08.
	1610	All teams in from the field.
	1630	Site secured.
	1720	Depart site.

Date	Time	Event
5 Sep 08 Friday	0600	Muster and Safety Brief
	0615	Brush crew departs for Site 27.
	0630	Teams out to Site 54.
5 Sep 08 Friday (continued)	0650	Meeting with CEHNC Safety Specialist regarding QA procedures. Based on his discussion with Huntsville PM the issues have been resolved and will have no impact on the project, at this time.
	0730	Meeting with Safety and QC. General overview of where we are and where we need to be going, etc.
	0840	Out to check on teams.
	0920	Notified by Team 1 that they have items that will required demolition procedures applied.
	0940	Items have been identified as: 1 ea. 4.2" mortar (illumination), 2 ea. 40mm ground signal, 1 ea. 155mm illumination candle. CEHNC Safety Specialist notified. Scheduled Demo Ops for this afternoon.
	1035	Together with Safety and planning this afternoons Demo Ops.
	1200	Lunch
	1240	Tested RFD and consolidated Demo support equipment/materials.
	1330	Issued demolition materials.
	1400	Demo Brief to all personnel. All personnel consolidated. Advised QC that scrap removal operations could be conducted during demo preps.
	1445	Demo Ops start.
	1615	Shot fired.
	1620	Sent all non-essential personnel back to site office…secured for the day under QC's supervision. Demo Sup down range to check shot.
	1625	Shot cleared. (4.2" is inert).
	1645	All personnel off Site 54.
	1700	All Demo materials returned to magazine. Weekly inventory. Paperwork completed.
	1740	Demo paper work completed and Site secured.
	1830	Departed Site.
6 Sep 08 Saturday	0720	Working on site paperwork. Daily report for yesterday out. We have Brush removal operations going on at Site 27.
	1120	Secured for the day. (only added 5 additional hours in order to keep my time to a 40 hour week)

Date	Time	Event
	1620	Washed vehicle.
8 Sep 08 Monday	0630	Muster and Safety Brief (Adjusted working hours)
	0645	Brush crew departs for Site 27.
8 Sep 08 Monday (continued)	0655	Teams out to Site 54. (Matt Abbott reported to Safety that he had pain on his right side, lower back. And indicated he wanted to have it checked out. Safety will take him in town to the Occupational medical facility for exam.
	0940	Safety reported that Matt Abbott has been placed on limited duty until 12 Sep 08 and prescribed pain medicine. Doctor has attributed the muscle spasms to the auto accident three weeks ago. Matt Abbott to remain off site until he is capable/fit to resume normal duties.
	1005	Completed Saturday's daily and PSR with FOA. She is trying to send it out. Internet system very slow……
	1045	Out to check on the teams.
	1200	Lunch
	1235	Call to Enterprise regarding new contracts for vehicles.
	1300	Call to Super 8 to check on delivery of Schonstedts. They have arrived.
	1320	Depart for Marshall to: drop off FEDEX, get rental contracts, pick up locators.
	1510	Back on site.
	1600	Picked up Derrick Black and Leotis Webb. They need to leave early to pick their kids up from their babysitters.
	1645	Teams in from the field.
	1700	Site secured.
	1825	Depart site
9 Sep 08 Tuesday	0630	Muster and Safety Brief
	0645	Brush crew departs for Site 27.
	0650	Teams out to Site 54. (Matt Abbott back to work)
	0710	Working on Daily report.
	0825	Out to check on teams at Site 54.
	1035	Out to Site 27 to check on Brush.
	1210	Back at office.
	1250	Checked out Schonstedts. QC is running personnel through test strip one at a time as to not impact production.
	1400	Out to check on the teams

Date	Time	Event
	1610	Back at office
	1645	Teams in from the field
	1700	Out brief / Site secured
	1820	Depart site
10 Sep 08 Wednesday	0630	Muster and Safety Brief
	0645	Brush crew departs for Site 27.
	0650	Teams out to Site 54.
	0700	Survey crew departs for Site 27. Surveying in LUC sign points.
	0720	Working on daily report.
	0850	Out to check on the teams.
	1215	Lunch
	1340	Out to Site 27 to check on teams.
	1520	Back at office
	1645	Teams in from the field.
	1700	Out brief / Site secured
	1830	Depart site
11 Sep 08 Thursday	0630	Muster and Safety Brief
	0645	Brush and survey crews depart for Site 27.
	0650	Team 1 out to Site 54, Team 2 out to Site 27.
	0710	Daily report
	0850	Out to check on teams.
	1230	Explosive inventory
	1410	Out to check on teams
	1600	Back at office.
	1645	All teams in from the field. Survey completed LUC requirements on Site 27. Will schedule their return for Site 54.
	1700	Out brief / Site secured
	1820	Depart site.
12 Sep 08 Friday	1000	Out to site to meet scrap dealer (River City iron and metal) and await delivery of replacement 4×4 Gator.
	1120	Met with Mike of River City……He will be delivering containers once he finalizes with Jason Kidd.

Date	Time	Event
	1220	RSC not able to deliver Gator…..everyone is preparing for Hurricane IKE.
	1400	Departed site.
13 Sep 08 Saturday	XXXX	Hurricane Ike has hit the area. Power out….Strong winds and heavy rains. Everyone hunkered down. Super 8 filled to capacity.
14 Sep 08 Sunday	XXXX	IKE is moving away. Tom and Pat stopped by to take a cold shower. They have no power and no water. Power back on at 1700. Most of the crew (Techs) have checked in….all OK.
	XXXX	Notified all we will work on Monday.
15 Sep 08 Monday	0630	Muster and Safety Brief
	0650	Teams out to Site 54. Site 27 access blocked due to downed trees in roadway. Combined Teams 1, 2, & 3 to work Site 54.
	0720	Working on Daily report and PSR with FOA.
	0915	Daily and PSR reports sent out.
	0925	Out to check on the teams.
	1010	Sorting scrap with QC…on the grid.
	1130	Scrap run back to the office.
	1205	Lunch
	1240	Out check on Magazine.
	1320	On site 54. Check on teams and assist with scrap/QC & QA support.
	1625	Back at office.
	1645	Teams in from the field.
	1700	Site secured.
	1750	Depart site.
16 Sep 08 Tuesday	0630	Muster and Safety Brief
	0645	Brush crew and Team 2 depart for Site 27 to clear trees from road.
	0650	Teams 1 and 3 out to Site 54.
	0700	Working with FOA on Daily report.
	0940	Daily sent out. Depart to escort RSC driver to site trailer with replacement "Gator"
	1000	RSC driver departs.
	1020	Drive Gator out to Site 27 to deliver to Brush escort.
	1050	Checked on Team 2 and general site conditions.

Date	Time	Event
	1110	Gator has a flat tire. Called RSC; they will be back out to correct problem. We are getting junk that has not been properly prepped prior to delivery.
	1300	Lunch
	1340	Out to check on teams.
	1550	Back at office
16 Sep 08 Tuesday (continued)	1645	All teams in from the field.
	1700	Out brief / Site secured
	1850	Depart site
17 Sep 08 Wednesday	0630	Muster and Safety Brief (Combined personnel from teams 1, 2, 3 into two teams)
	0645	Brush crew and Team 2 depart for Site 27.
	0650	Teams 1 out to Site 54.
	0700	Team 1 finishing up last grid in Site 54. This is a very high density grid.
	1200	Lunch
	1400	Out to check on teams. Team 1 bogged down on grid.
	1500	Team 2 making progress at Site 27
	1550	Brush Removal ops completed on Site 27. Brush crew and Jathan Futral packing up fro demo tomorrow.
	1615	Team 1 reports they will need a few hours tomorrow in order to complete last grid.
	1645	All teams in from the field
	1700	Out brief / Site secured
	1805	Depart site
18 Sep 08 Thursday	0630	Morning Muster and Safety Brief
	0645	Team 1 departs for Site 54 / Team 2 departs for Site 27.
	0830	Team 1 completed final grid on Site 54.
	0850	Notified QC and QA that final grid was ready for inspection.
	0935	Final QC and QA completed on Site 54.
	0955	Sent Team 1 personnel to Site 27 to set up and get ready to start work on 27. Demo team making preps for final demo cleanup shot on Site 54.
	1020	Start Demo Ops Site 54
	1050	Shot fired

Date	Time	Event
	1107	Shot cleared.
	1120	Demo Ops completed
	1145	Team 1 personnel reunited on site 27.
18 Sep 08 Thursday (continued)	1220	Lunch. Pizza and Wings for the crew. Trae Brown (1st Choice) on site for lunch and morale. All personnel advised of current manning changes, 1st Choice personnel's last day is 25 Sep 08. I will have to down size UXO crew after 25 Sep 08, unless we are behind schedule. Which we already are, due to constant changes to schedule and a very poorly bid project. .I refused to not tell the crew the truth…they deserve it. Will see what we have Monday…
	1310	Continue ops on Site 27.
	1645	Teams in from the field.
	1701	Out brief / Site secured.
	1830	Depart site.
21 Sep 08 Sunday	1000	Call from Woog, he is rescheduling the site audit until 6 Oct 08 to coincide with his filling in for Tom Hinote and Pat's vacation starting 10 Oct 08. (*I will need to schedule at least one trip home before project ends in order to get my stuff home since I will be flying from Lenoir City back home.)*
22 Sep 08 Monday	0630	Morning Muster and Safety Brief
	0650	Teams 1 and 2 depart for Site 27.
	0810	Completed daily report and PSR.
	0825	Out to check on the teams.
	0920	Weekly check of magazine.
	1030	Back at Site 27.
	1205	Lunch (Returned to office)
	1255	Out to check on the teams.
	1530	Back at office.
	1645	Teams in from the field.
	1700	Out brief / site secured
	1750	Departed site.
23 Sep 08 Tuesday	0630	Morning Muster and Safety Brief
	0650	Teams 1 and 2 depart for Site 27. Survey and escort depart for Site 54. (LCU points)
	0900	River City Iron and Metal dropped off scrap containers. They will be our new scrap dealer.

Date	Time	Event
	1015	Out to check on the teams.
	1200	Lunch
	1230	USACOE Rep, QC and my self looking at areas for the re-delineation of the OBOD.
23 Sep 08 Tuesday (continued)	1520	Completed OBOD delineation survey.
	1535	Checked on teams
	1615	LUC survey points completed by survey team.
	1645	Teams in from the field
	1700	Out brief / site secured
	1755	Depart site.
24 Sep 08 Wednesday	0630	Morning Muster and Safety Brief
	0650	Teams 1 and 2 depart for site 27.
	0800	Finalized OBOD recommendation with USACOE Rep for submission to respective PMs.
	0945	Out to check on the teams.
	1200	Lunch
	1340	Highway 59 Environmental on site to pick up MD & RRD. FOA and QC completed required paperwork.
	1435	Verified scrap paperwork. Had QC escort scrap to destination for official transfer.
	1645	Teams in from the field.
	1705	Our brief / site secured
	1800	Departed site.
25 Sep 08 Thursday	0630	Morning Muster and Safety Brief (only 3 of 7 local hires showed up). This is their last day.
	0650	Teams 1 and 2 depart for Site 27. (Combined teams)
	0900	Demo team breaks off from Team 1
	0910	Start initial Demo preps.
	1005	Issue explosives. Depart for site.
	1020	Demo Ops
	1120	Shot fired
	1140	Shot cleared.

Date	Time	Event
	1130	Demo Ops complete
	1200	Lunch
	1210	Back at office. Paperwork
	1400	Out to check on the teams
25 Sep 08 Thursday (continued)	1600	Return to office. Last day for Ken Barnett (USACOE). All QC/QA completed to date.
	1645	Teams in from the field
	1700	Out brief / site secured
	1810	Depart site
26 Sep 08 Friday	0830	Started cleaning the two rental vehicles in preps for turn in.
	1015	Started getting calls from the crew regarding no per diem.
	1040	Called Kelly Walker on per diem issue. She said it should be paid today.
	1200	Completed vehicle cleaning.
	1220	Called Enterprise to arrange pick up. They are busy.
	1300	Took first vehicle down.
	1320	Call to Brian Gentry (PM) advising him of per diem problem.
	1425	Turned in both vehicles and was taken back to motel.
	1520	On my time now.
28 Sep 08 Sunday	0900	William Czech stopped by my room and let me know he was going to the Emergency Room to have his Poison Ivy Rash looked at. It had progressively gotten worse over the weekend spread to his left eye, which was badly swollen earlier. Based on Billy's concern I saw no other option.
	XXXX	Late entry: I failed to contact Safety and advise, and as a result this was not reported to Corporate until Monday morning. My mistake.
29 Sep 08 Monday	0630	Morning Muster and Safety Brief
	0640	Combine all personnel into one team. Tom Hinote is taking both QC and Safety as of this morning.
	0655	Team departs for Site 27.
	0730	Working on PSR with FOA
	0910	All reports out. Out to check on crew.
	1200	Lunch
	1230	Continuing working with crew.
	1630	Back at office

Date	Time	Event
	1645	Team in from the field
	1705	Out brief / secured site
	1820	Depart site.
30 Sep 08 Tuesday	0630	Morning Muster and Safety Brief
	0645	Team departs for Site 27.
	0730	Paperwork completed / Out to check on team.
	1200	Lunch
	1230	Continuing working with team.
	1510	Stung on the nose by a bee. Hurt like heck….I'll live.
	1620	Depart site 27 and returned to office. Reported bee sting to QC/Safety. (nose is red a little swollen and painfull)
	1650	Team in from the field.
	1710	Out brief / Site secured
	1740	Depart site.
1 Oct 08 Wednesday	0630	Muster and Safety Brief
	0645	Team departs for Site 27.
	0710	Assisted Tom Hinote (QC/Safety) with reorganizing the mess that Robert Thomas (former Safety) left.
	0830	Reports out / Safety files will need a little administrative repairs for continuity purposes. Tom will take care of it.
	0845	Out to check on the team.
	0940	Assisted QC with OBOD seeds.
	1030	Continued working with the team.
	1200	Lunch
	1230	Continue working with the team.
	1600	Returned to office.
	1645	Team in from the field.
	1705	Out brief / Site secured
	1805	Depart site
2 Oct 08 Thursday	0630	Muster and Safety Brief
	0645	Team departs for site 27. All 4 grids remaining were originally in the initial OBOD and expect heavy contamination.

Date	Time	Event
	0720	Reports out / Out to check on the team
	1200	Lunch
	1230	Continue working with the team.
2 Oct 08 Thursday (continued)	1420	Completed last grid. Surface clearance completed pending QC and final QA inspections. (30 grids are pending QA)
	1425	Call to PM to advise of status.
	1440	Team gathering all equipment and line and setting up on first OBOD subsurface grid.
	1610	Team in from the field. Reorganized equipment for shift to intrusive Ops.
	1645	Out brief / secured site early
	1740	Departed site
3 Oct 08 Friday	0630	Muster and Safety Brief (**down to 5 field personnel**)
	0645	QC/SUXOS conducted Preparatory Phase Inspection on team for Intrusive Ops.
	0720	Vallon assignments and training. (All field personnel have little to no experience with the Vallon)
	0840	Completed subsurface Test Strip with Vallons. Everyone passed.
	0845	Team departs for site 27.
	0905	Start Intrusive operations Site 27
	0910	Working on getting a Tech I replacement for Kevin Klein. He let me know yesterday that today was his last day.
	0920	Fish and Wildlife personnel dropped by for an update. Briefed them on current status. Provided a picture of the LUC signs that will be installed. Also let them know I would assist them with info or whatever for next weeks meeting. We still assume we are not involved as of yet; They left pleased.
	1020	Out to check on the team. Used a Schonstadt behind the team to identify additional ferrous anomalies below White's detection depth. Team is using White's ("compent out") in order to eliminate the many small anomalies through out the grid.
	1115	Used a Vallon to check swept lanes. Found far too many anomalies that were within the failure criteria.
	1200	Lunch
	1230	Working with QC and Team Leader on a solution to increase production and still maintaining quality.
	1605	Return to office

Date	Time	Event
	1645	Team in from the field. Team cleared over 1,400 surface/subsurface anomalies on their first pass of about 50% of the grid. This won't work.
	1700	Out brief / site secured
	1810	Departed site
6 Oct 08 Monday	0630	Muster and Safety Brief New personnel: J.R. Castor UXO II and Pat Milling UXO I
	0650	Team minus new personnel departs for Site 27.
	0700	New personnel indoc/training.
	0920	J. R Castor out with QC to join team. Pat Milling back at office working on required ESS training.
	0930	Moved team from grid E07 to F06. I made a mistake putting team in E06 Friday. It has not officially been added to the OBOD. I wasted a half a day with that move.
	1030	Took Pat Milling out to join team. Working with the team.
	1200	Lunch
	1230	Continue intrusive ops.
	1640	Returned to office.
	1706	Out brief / site secured
	1715	PSR out.
	1800	Depart site.
	1930	Depart for Airport to pick up Woog.
	XXXX	Back at Motel. End of the Day.
7 Oct 08 Tuesday	0630	Muster and Safety Brief. Eugene Mikell (EODT Safety Manager) on site to conduct Site Safety/QC Audit.
	0655	Team departs for Site 27. (Light rain, possible T-Storms in forecast)
	0730	Start Audit
	0900	Daily report out.
	0930	Out to check on the team and delivery "large head" for Vallon.
	1005	Stopped by Fish & Wildlife to confirm mailing address and arrange for them to be receiving our shipment.
	1035	Back with teams. Identifying our first areas needing backhoe support.
	1200	Lunch
	1230	Continue Audit

Date	Time	Event
	1320	Out to site to check on team
	1440	Back to office
	1645	Team in from the field
7 Oct 08 Tuesday (continued)	1700	Out brief / Site secure
	1730	Depart site.
8 Oct 08 Wednesday	0630	Muster and Safety Brief
	0645	Team out
	0700	Continue audit
	0800	2 visitors from USACE Tulsa District stopped by office. Advance party for today's site visit.
	0820	Visitors depart to pick up additional visitors.
	0850	Visiting party arrives. 4 personnel (TCEQ, EPA, USACE Tulsa district)
	0855	Site brief, safety brief, question and answer period. Tour off compound / Scrap containers and procedure brief.
	0940	Depart with visitors for Site 27.
	0945	Site tour. (Briefed on OBOD area, procedures, and observation of team working "mag & flag)
	1030	Visitors depart.
	1040	Back at office.
	1200	Lunch
	1230	Back at Site 27. Working with team and QC.
	1645	Depart Site 27.
	1705	Out brief / site secured
	1730	Depart site.
9 Oct 08 Thursday	0630	Muster and Safety Brief (In depth brief on new Bio Hazard Procedures provided by Eugene Mikell)
	0700	Team out
	0710	Audit continues.
	1000	Audit Out Brief.
	1100	FOA depart on Admin run.
	1200	Lunch
	1230	Out to check and work with the team & QC.

Date	Time	Event
	1615	Return to office.
	1645	Team in from the field.
9 Oct 08 Thursday (continued)	1705	Out brief / site secured
	1720	Departed site.
10 Oct 08 Friday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0700	Admin work
	1000	Start initial Demo preps
	1115	Issued demo materials / weekly explosive inventory
	1212	Demo shot fired.
	1218	Shot cleared. Disposed of 66 ea. MEC items.
	1230	Post Demo paperwork.
	1520	Out to check on team
	1615	Back at office
	1645	Team in from the field.
	1700	Out brief / site secured.
13 Oct 08 Monday	0630	Muster and Safety Brief (New UXOI on site, Yasir Abdulrahman)
	0655	Team out to Site 27
	0700	Yasir starting site indoc/training.
	1215	Safety took new UXO I out to join team.
	1240	Weekly magazine inspection.
	1255	Out to Site 27 to check on and work with team
	1605	Back at office. Re-sent PSR to PM
	1645	Team in from the field.
	1700	Out brief / Site secured.
14 Oct 08 Tuesday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0715	Paperwork (Time sheets and daily report)
	0845	Out to Site 27 to check on team and assist QC and work with team. Snake reported to be active this morning.
	1210	Back at office. Sent follow-up e-mail on explosive request and status of OBOD

Date	Time	Event
		and our expected UASCOE Safety Rep.
	1230	Lunch
	1340	Out to check on the team.
14 Oct 08 Tuesday (continued)	1520	Back at office.
	1645	Team in from the field
	1700	Out brief / site secured
	1730	Depart site
15 Oct 08 Wednesday	0630	Muster and Safety Brief
	0640	Conducted some testing with the Vallon (sensitivity) in order to see if we can reduce the amount of small anomalies detected. Initial testing indicates we need to be on 3 in order to detect 40mm and larger at 12 inches.
	0735	Team out to Site 27
	0800	Daily report out.
	0805	E-mail response from Dough Royster regarding explosive request. He is working it.
	0810	Working with QC on White's setting to assist in speeding up initial clearance prior to Vallon checks.
	0930	Out with the teams and assisting QC.
	1230	Took Chuck Overstreet back to his place, he was feeling and looking ill. Manny Repolett assumed T/L position.
	1315	Back with team
	1610	Return to office
	1645	Team in from the field
	1700	Out brief / site secured
	1715	Depart site
16 Oct 08 Thursday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0700	Admin work
	1040	Out to check on the team.
	1230	Installed fire code sign at entrance to magazine access road.
	1400	Admin work
	1645	Team in from the field

Date	Time	Event
	1700	Out brief / site secured
	1720	Depart site.
17 Oct 08 Friday	0630	Muster and Safety Brief
	0655	Team out to Site 27
17 Oct 08 Friday (continued)	0710	Admin work
	0830	Call to Austin Powder to verify and set up delivery.
	1115	Austin Powder truck at magazine. Driver forgot paperwork. Will return.
	1210	Bought Pizza for the team. (On PM)
	1240	Sign for and received 60 ea. Black Cap Boosters. Placed in magazine. Conducted weekly explosive inventory.
	1320	At site 27 to check and work with the team.
	1630	Return to office.
	1705	Out brief / site secure
	1745	Depart site.
20 Oct 08 Monday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0710	Admin work (PSR etc.)
	0900	Out to conduct weekly check on magazine
	0940	At Site 27 to check and work with QC/team
	1215	Lunch
	1245	Continue working with team.
	1615	Return to office.
	1645	Team in from the field
	1700	Out brief / site secured
	1740	Depart site
	1820	At Wal-Mart for site supplies. (no water)
	1850	At Kroger's for water
	1920	End of the day.
21 Oct 08 Tuesday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0700	Admin (daily and verify anomaly count to date. (16,840 total / daily adjusted to

Date	Time	Event
		reflect corrected count))
	0820	Advised by PM that we will be receiving two additional UXO Techs next week.
	0850	Out to Site 27 to work with QC/Team.
	1200	Lunch
21 Oct 08 Tuesday (continued)	1240	Back at office. Helped off load LUC signs and posts.
	1320	Out to site to work with team.
	1635	Returned to office.
	1645	Team in from the field
	1705	Out brief / site secured.
22 Oct 08 Wednesday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0700	Admin work
	0815	Picked up Auger that had been delivered to Fish & Wildlife yesterday. Did not come with the one tool we need to assemble.
	0950	Issued explosives for Demo Ops.
	1120	Demo shot (59 MEC items)
	1126	Shot clear
	1200	Lunch
	1230	Continue working with team.
	1540	Back at office.
	1645	Team in from the field.
	1700	Out brief / site secured.
23 Oct 08 Thursday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0700	Admin work
	0920	Off to Marshall to obtain supplies/materials for scrap bins and magazine sign.
	1200	Lunch
	1230	Continue working on scrap bin covers.
	1425	Out to check and work with team
	1630	Return to office

Date	Time	Event
	1645	Team in from the field
	1700	Out brief/site secured
	1800	Depart site
24 Oct 08 Friday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0700	Admin work
24 Oct 08 Friday (continued)	0920	Out to site to work with team.
	1200	Lunch
	1230	Continue working with team
	1440	Call from PM regarding working swamp area. We will be required to clear area one way or the other.
	1450	Out to issue explosives
	1520	Start Demo Ops.
	1600	Shot fired
	1605	Shot clear
	1645	Team in from the field
	1700	Out brief / site secured
	1730	Depart site
27 Oct 08 Monday	0630	Muster and Safety Brief (2 New personnel on site: Bob Chandler and Jacob Payton, UXO IIs)
	0655	Team out to Site 27
	0700	Admin work / New personnel briefings, indoctrination and training.
	1015	New personnel taken to join team.
	1040	Out to check on and work with team.
	1200	Lunch
	1230	Continue with team
	1400	Tim Bohannon (USACE Safety Specialist) on site. SUXOS and Safety/QC In briefings.
	1645	Team in from the field.
	1705	Out brief / site secured.
28 Oct 08 Tuesday	0630	Muster and Safety Brief
	0655	Team out to Site 27

Date	Time	Event
	0700	Admin work
	0820	Out to site to work with team.
	0845	Checked on "swamp area" with QC. Area has dried up with very little standing water remaining. We will be able to complete surface sweep as planned without requiring any special procedures. Info passed on to PM.
	0940	Corps Safety on site. Provided site indoc/walk around.
	1000	Escorted Corps Safety to swamp area for assessment.
28 Oct 08 Tuesday (continued)	1010	Received verification that Steve Voland and Ron Madden will be visiting site tomorrow.
	1020	Corps Safety and QC started QA activities in OBOD area.
	1200	Lunch with Corps Safety and QC. 4 of the 6 completed grids in the OBOD have passed QA inspection.
	1250	Back on site. QA activities continue. Working with the team.
	1445	Remaining two completed grids have passed QA inspection. (6 of 6)
	1610	Returned to office with QC to work on scrap process corrections.
	1650	Team in from the field.
	1710	Out brief / site secured.
	1810	Departed site.
29 Oct 08 Wednesday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0700	Admin work
	0950	Out to check on the team and check progress of swamp conditions.
	1040	Escorted Steve Voland and Ron Madden to site trailer.
	1230	Escorted Steve Voland and Ron Madden to Site 27.
	1415	Escorted Steve Voland and Ron Madden out. They departed for Airport.
	1650	Team in from the field.
	1700	Out brief / site secured
	1820	Departed site.
30 Oct 08 Thursday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0700	Admin work
	0850	Out to check on the team and "Swamp area". Swamp area has dried up and

Date	Time	Event
		will be workable with out special controls.
	1200	Lunch
	1230	Continue working with team
	1650	Team in from the field
	1700	Out brief / site secured
	1755	Depart site
31 Oct 08 Friday	0630	Muster and Safety Brief
	0700	Team out to Site 27
	0930	Took a 3 man team to complete surface sweep in the swamp area.
	1130	Surface sweep of swamp area completed.
	1200	QC and QA inspection complete on swamp area. Area passed both.
	1500	Demo operations preps.
	1630	Demo Ops completed
	1700	Out brief / site secured
	1815	Depart site
3 Nov 08 Monday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0820	Out to check on and work with the team.
	1125	Back at office - Admin
	1200	Lunch
	1230	Working with UXOSO/UXOQC on LUC sign installation on Site 27.
	1650	Team in from the field
	1700	Out brief / site secured
	1830	Depart site
4 Nov 08 Tuesday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0750	Out to check on and work with the team.
	1035	Working with UXOSO/UXOQC on LUC sign installation.
	1200	Lunch
	1230	Continue working on LUC sign installation.
	1650	Team in from the field

Date	Time	Event
	1700	Out brief / site secured
	1800	Depart site
5 Nov 08 Wednesday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0745	Out to check on and work with the team.
	0820	Continue LUC sign installation.
	1200	Lunch
5 Nov 08 Wednesday (continued)	1230	Continue Intrusive and LUC Ops.
	1540	All LUC signs installed and QC'd. Site 27 LUC completed.
	1650	Team in from the field
	1700	Out brief / site secured
	1740	Depart site
6 Nov 08 Thursday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0710	Lightning Hold
	0810	Crew back to work.
	0825	Out to check on and work with the team.
	0830	Crew started LUC sign installation on Site 54.
	1015	Backhoe arrived on site. Inspected and ready for use.
	1045	Start backhoe ops on Site 27 OBOD area. Started LUC sign installation on Site 54.
	1200	Lunch
	1230	Continue Intrusive and started LUC Ops on Site 54.
	1650	Team in from the field
	1700	Out brief / site secured
	1745	Depart site
7 Nov 08 Friday	0630	Muster and Safety Brief
	0700	Team out to Site 27
	0805	Out to check on and work with the team.
	1200	Lunch
	1230	Continue Intrusive Ops.

Date	Time	Event
	1500	Demo Op preps
	1635	Demo Ops completed.
	1650	Team in from the field
	1700	Out brief / site secured / 2 personnel will demob tomorrow)
	1715	Depart site
10 Nov 08 Monday	0630	Muster and Safety Brief (1 five man team remaining)
	0700	Team out to Site 27
	0805	Out to check on and work with the team.
10 Nov 08 Monday (continued)	1200	Lunch
	1230	Continue Intrusive Ops.
	1650	Team in from the field
	1700	Out brief / site secured
	1715	Depart site
11 Nov 08 Tuesday	XXXX	Field work cancelled due to extreme inclement weather. Thunderstorms and very heavy rain.
12 Nov 08 Wednesday	0630	Muster and Safety Brief
	0655	Team out to Site 27
	0700	Shifted team to another grid. Working grid is 1/3rd underwater due to storm.
	0710	Continue Intrusive Ops.
	1200	Lunch
	1230	Continue Intrusive Ops.
	1650	Team in from the field
	1700	Out brief / site secured
	1725	Depart site
13 Nov 08 Thursday	0630	Muster and Safety Brief
	0655	Team out to Site 27 / Continue Intrusive Ops.
	0725	Out to check on and work with the team.
	1200	Lunch
	1230	Continue Intrusive Ops.
	1420	All LUC signs have been installed at Site 54. All LUC signs have been installed at both sites and have passed final QC/QA.

Date	Time	Event
	1650	Team in from the field
	1700	Out brief / site secured
	1735	Depart site
14 Nov 08 Friday	0630	Muster and Safety Brief
	0655	Team out to Site 27 / Continue Intrusive Ops.
	0725	Out to check on and work with the team.
	1200	Lunch
	1230	Continue Intrusive Ops.
	1500	Demo Op preps
14 Nov 08 Friday (continued)	1635	Demo Ops completed.
	1650	Team in from the field
	1700	Out brief / site secured / Chuck Overstreet UXO III to demob tomorrow.
	1725	Depart site
17 Nov 08 Monday	0630	Muster and Safety Brief / Assumed additional position of Team Leader.
	0655	Team out to Site 27 / Continue Intrusive Ops.
	1200	Lunch
	1230	Continue Intrusive Ops.
	1520	Completed work on “Pit” area, grid F06 has the potential for anomalies below 4 feet. Area marked and documented.
	1650	Team in from the field
	1700	Out brief / site secured /
	1715	Depart site
18 Nov 08 Tuesday	0630	Muster and Safety Brief / Assumed additional position of Team Leader.
	0655	Team out to Site 27 / Continue Intrusive Ops.
	0910	Three members from the USACE, Tulsa district stopped-by to discuss LHAAP clean-up effort and progress to date. Members were given a short briefing and they indicated they would stop by tomorrow for a tour of Site 27 and the OB/OD area.
	1200	Lunch
	1230	Continue Intrusive Ops.
	1650	Team in from the field
	1700	Out brief / site secured /

Date	Time	Event
	1715	Depart site
19 Nov 08 Wednesday	0630	Muster and Safety Brief / Assumed additional position of Team Leader.
	0655	Team out to site 27 / Continue Intrusive Ops.
	1035	Visitors at site 27. All were briefed and given a tour as requested. LUC signs were inspected and found to be within required standards.
	1200	Lunch
	1230	Continue Intrusive Ops.
	1650	Team in from the field
	1700	Out brief / site secured /
	1715	Depart site
20 Nov 08 Thursday	0630	Muster and Safety Brief / Assumed additional position of Team Leader.
	0655	Team out to Site 27 / Continue Intrusive Ops.
	1200	Lunch
	1230	Continue Intrusive Ops.
	1540	Completed mag and dig operations in las grid, Grid F05 which completes all intrusive work in Site 27 OBOD, and commenced field clean-up.
	1650	Team in from the field
	1700	Out brief / site secured
	1745	Depart site
21 Nov 08 Friday	0630	Muster and Safety Brief
	0655	Team out to Site 27 to conduct final demolition operations, clean up and close out Site 27.
	1700	Demolition operations complete; disposed/de-milled all remaining MEC and shapes (empty rounds/carts); expended all remaining explosives. Crew to de-mobilize tomorrow. River City Iron & Metal picked-up all scrap and signed all required documents. Conducted a final sweep of Sites 54 & 27 to ensure the sites were properly policed up and ready for turnover.
	1800	Depart site
22 Nov 08 Saturday	**XXXX**	**Demobilization of all personnel. Project completed.**

APPENDIX E
SURVEILLANCE REPORTS

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

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Date	Time	Event
08/11/08	0600-1630	Mobilized to LHAAP yesterday, 08/10/08. Received initial in-brief from EODT PM, Brian Gentry, SUXOS, Mick Doak and UXOSO, Robert Thomas who was acting UXOQC during the first week of site preparations/operations, last week. Last week the initial field management team commenced site set-up as well as brush cutting and surveying. EODT subcontracting with EnviroGrind as bush cutters and Collins Survey along with two EODT surveyors. In addition, nine local hires arrived this morning as part of the surface sweep investigation crews. Organizationally, we will have three 7-man UXO teams consisting of 1 UXOT3, 2 UXOT2, 1 UXOT1 and 3 local hires. Commenced 3-day training for all hands. Specific training to local hires complies with the standards directed in DDESB TP 18 for surface sweep operators. Training included major topics and issues regarding site specific objectives, SSHP, and QCM directives. A tour and briefing of the work site was provided, and detailed instruction, training and familiarization was provided for the White magnetometers. Teams were assigned and UXOT3's given the opportunity to give further direction and training on the White magnetometers. At the same time, we continued brush cutting and surveying with UXO escorts. QC surveillance checks were conducted on the survey crews and brush cutters. I was reviewing the WP, SOP's, APP and AHA forms and provided QC training and familiarization to the crews. No field office internet service available at this time. Plans are to receive service on 8/14. Conducting e-mail reviews and e-mail corresponding after hours.
08/12/08	0600-1630	Heavy rains and thunderstorms in the area precluded full operations. Majority of crew secured for the day. One brush cutting crew (3 personnel) and the survey crew from Collins Survey on site to continue operations. Both crews with UXO escorts. PM, SUXOS, UXOSO, myself and FOA on site to continue site set-up and coordination with local agencies.1015: Rains and storms let-up allowing for full survey and brush cutting operations. Conducted multiple QC surveillance of field operations along with the UXOSO. Reviewed QC administrative reports and refined initial reporting forms to satisfy field reporting and documentation requirements. Commenced initial drafts of the QC Three-phase checklist forms.
0813/08	0600-1645	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Continued brush cutting and surveying with UXO escorts. Continued 3-day training for crew; finalizing site set-up; and completion of all administrative forms and reporting requirements. Local electrician on-site to confirm ohm readings on explosive magazine. Ohm's read under the minimum requirement.

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Date	Time	Event
		Conducted Test Strip qualification on nine (9) UXO Technicians All passed first time with a 100% location of all seed items. Continued field surveillance of brush cutting and surveying operations. Continued working initial drafts on QC Three-phase checklist forms. Nicholas Hefty, of EODT is assisting in drafting the checklists and we are coordinating those efforts.
08/14/08	0630-1640	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Continued 3-day training, magnetometer familiarization and site specific requirements. 1320: Completed Test Strip testing of all remaining personnel. Two members failed on the first attempt; were provided remedial training and successfully completed on the second try. 1400: Finalized my portion of QC Three-phase checklist forms. E-mailed my drafts to Nicholas Hefty for review. Three John Deere Gator ATV's arrived on site. SUXOS and UXOSO provided familiarization and training to all hands. Observed brush cutting operations. 1500: Received (via PM's field e-mail) the QC checklists drafted by Nicholas Hefty to do a field comparison on his to mine. Informed by SUXOS that plans to have field office Internet service connected today has been delayed until next week. 1600: PM, SUXOS, UXOQC, UXOSO and Team Leaders meeting to discuss planned field operations (starting 8/18) reporting requirements, procedures and objectives and confirm all are in agreement for what is expected starting next week. It's understood, by all, that initial production numbers will be low and that there will be an initial learning curb to allow the high number of new-hires to become familiar and comfortable with operational procedures. At the same time, it is understood that expectations are to increase production daily while meeting safety and quality requirements.
08/15/08	0600-1630	On site this Friday to provide safety/QC support during continued brush cutting operations. Jathon Futral on site to provide UXO escort, along with six members from EnviroGrind. Commenced field review of completed draft QC checklist forms. 0800: Some rain clouds overhead and thunder heard off in the distance. No detection of severe weather or lightning in the area by the Thunderbolt lightning detector. Field crews directed to continue work while keeping a visual and audible observance of possible threatening weather. 1015: Rain and heavy clouds depart the area. Weather no longer a factor. Conducted multiple surveillance checks on field crew.
08/18/08	0600-1815	0540: On the way in to work, came across vehicle accident involving EODT vehicle and one civilian vehicle. EODT members

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Date	Time	Event
		include; (Team 2). Billy Czech, Bill Jones, Matt Abbott and Kevin Klien, plus one civilian from the other vehicle. Initially assessed that all involved personnel were not seriously injured and then notified SUXOS. 911 called by EODT local hire who observed accident. SUXOS, UXOSO and USACOE UXO Safety Specialists, Ken Barnett, arrived shortly afterward, along with local police and took control of the situation. Gathered all remaining EODT personnel and departed for the field trailer. Conducted daily morning safety meeting. Conducted a Preparatory QC checklist for MEC Surface Clearance prior to teams departing for the work site. Received periodic updates from SUXOS informing me that he and the UXOSO, FOA will go along with the EODT accident victims' to the local hospital for check-up. In the interim, we will be in a safety stand-down and conduct additional training, particular vehicle safety training. Brush cutting and surveying crews depart, with UXO escorts. Jathan Futral qualified using the White magnetometer through the QC Test Strip. Conducted a QC check of the brush cutting that had been done over the weekend. Informed brush cutting crew that there are approximately two grids where dead-fall needs to be moved and/or grinded. 0915: Received update call from SUXOS. Discussed possibility of commencing field operations with Teams 1 & 3. Confirmed via USACOE representative that we can commence surface sweep operations. Notified teams to commence operations ensuring that they are at least 400' from the brush cutters while they are re-doing grids. 1015: Collins surveyors completed survey of the boundary at Site 27. Observed crews on multiple occasions. John Clark and Jathan Futral assisting QC with placement of seeds items in ready grids. Conducted a courtesy QC check of what areas had been cleared to give teams an idea of how they are doing. 1400: EODT PM arrived on site to attend meeting with state and federal regulators, and curators of the LHAAP property. SUXOS and PM conducted tour of the work site and observed teams. 1600: attended above mentioned meeting along with PM. Meeting centered around a briefing by the PM on planned operational approaches and questions and answers sessions to confirm EODT procedures and satisfy requirements. Small discussion on QC Checklists followed.
8/19/08	0600-1640	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Team 2 Team Leader and one other team 2 member absent. Remaining team 2 members assigned escort duty and/or to other teams. Observed teams 1 & 3 field operations and brush cutting. Planted additional 20+ seed items in grids completely grubbed and ready for surface sweep. Weather was cloudy with

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Date	Time	Event
		occasional rain throughout the day. Two scrap containers arrive and are located inside the fenced compound.
8/20/08	0600-1130	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Continued field operations with one less team than planned (2 out of 3). 0805: Crew placed on lightning hold. 0930: Based on forecasted rain and thunderstorms all day, EODT PM, SUXOS and UXOSO secured field operations. Crews directed to gather gear, return to field office and secure. Escorted local explosive vendor to field office to discuss explosive licensing and delivery requirements.
8/21/08	0600-1730	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Continued field operations with just 2 of the 3 assigned teams due to absences. Conducted QC of first five grids completed this week; all passed. Forwarded memorandum to Site USACE Safety Specialist listing grids ready for QA. Observed teams conducting surface clearance operations. Conducted QC surveillance of final brush cutting on Site 54 and surface clearance.
8/25/08	0600-1645	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. All three teams up and running. 0900: Brush cutting crew completed grubbing on site 54. Conducted a QC Surveillance of the last remaining area brush cut at Site 54. Area passed QC and EnviroGrind shifting operations to Site 27.Conducted a QC check of five grids; all passed. Conducted a quick tour of Site 27 in the afternoon to check on the escorts and EnviroGrind personnel. 1500: Received notification that the radio repeater is up and running. Conducted a radio check of all operating areas with satisfactory results. Site USACE UXO Safety Specialists completed a QA on five grids; all passed. 1700: FedEX delivered explosives. SUXOS and I inventory received explosives and place in magazine.
8/26/08	0600-1700	Mustered the crew. Shaun Woods, UXOT1, checked-in this morning. Daily tailgate safety briefing and planned operations discussed. Conducting in-brief for Shaun. Crews continue surface clearance operations in Site 54. Conducted QC on what grids have been turned-in. Grid G-08 failed QC due to high number of uninvestigated anomalies and QC finds. Majority of day centered around QC checks of grids, particularly trying to identify deficiencies' and provide solutions.
8/27/08	0600-1645	Mustered the crew. Robert Thomas away at UXOSO safety training for the next two days with Eugene "Woog" Mikell, EODT UXO Safety Operations Manager. I'll be the acting UXOSO during that

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Date	Time	Event
		period. Daily tailgate safety briefing and planned operations discussed. SUXOS moved certain individuals (rearranged teams) in an effort to see if that may help in production/quality. Conducted QC and visual surveillance on the two teams. That and today's QC indicate that new personnel are becoming more familiar with procedures and practices. 1330: Received radio call, from team 1 (team leader), that Jonathon McCarty (local hire) reports he is feeling faint. Team leader placing McCarty in vehicle with AC running and having member drink semi-cool water. McCarty continually monitored during the time he is in the vehicle. After approximately one hour, McCarty reports he is feeling better. Further conversations with McCarty divulge that this is a reoccurring incident and that while employed at Lowe's he had a fainting spell. He further stated that is how he knew he was about to faint. At this time I made the call to release McCarty for further evaluation and notified the SUXOS. While transporting McCarty back to the field trailer, he tells me that he is on medication for manic depression and attention deficit disorder and that he's prone to diabetes. McCarty is 26 years old and weighs approximately 300 pounds at 5' 8'' tall. 1515: Notified Eugene Mikell of incident. After further discussions, SUXOS and I felt it best to terminate McCarty for health, safety and liability reasons.
8/28/08	0600-1700	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Crews continue surface clearance operations in site 54. Conducted multiple QC checks on all remaining completed grids. A follow-on QA of all QC'd grids was completed by the on-site USACE representative. We are 100% caught-up on all QC/QA. 1010: Brush cutting escort (Jathan Futral) reports that he and one brush cutter (Noah Davis) were stung by yellow jackets that had been disturbed during brush cutting. 1200: Eugene Mikell on-site, along with UXOSO, to observe field operations and discuss reporting requirements. Commenced scrap sorting and final QC checks. Still have lots of scrap to collect from the field.
9/3/08	0600-1645	Back from holiday weekend, coupled with Hurricane Gustav weather delay (yesterday). Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Weather continues to be a factor, with misty rains and extremely wet conditions in the field. Two (2) combined teams continue to surface clear in S54. Planted fourteen (14) additional seeds in S54.
9/4/08	0600-1645	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Weather calls for clearing skies and milder temperatures. Currently overcast and misting. Two new local hires

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Date	Time	Event
		arrived today for indoctrination; Ricky Brown and Derrick Black. Conducted QC on 15 grids. Subsequent QA followed; all grids passed. Ran above named new local hires through test strip. Both passed 100% on the first try with relative ease. Completed seeding in S-54. Commenced retrieving scrap which had been removed and staged from various grids in S-54. Anticipate recovering all remaining staged scrap tomorrow. All hands thoroughly briefed on scrap handling and inspection procedures.
9/5/08	0600-1730	Working Friday due to last Monday holiday. Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Teams continue operations in S54. Conducted QC on eleven (11) grids. All but one (D08) passed; see DNR 090508-002. Team 1 report finding a 4.2” mortar in grid B06. SUXOS, UXOSO and USACE SO identify item as misfired illumination round with the fuze intact. Demolition operations scheduled for the afternoon. 1400 - 1630 demolition operations coupled with scrap sorting and training for those personnel not actually involved in the demo op.
9/6/08	0600-1630	Jathan Futral and I supporting brush cutting crew this Saturday. Brush cutting operations continue in an effort to complete S27 prior to shifting surface clearance operations. Mustered the crew. Six (6) Envirgrind personnel on site. Daily tailgate safety briefing and planned operations discussed. Brush cutting crew to continue grubbing in S27. Gathered all remaining MEC scrap from S54 and conducted a final QC check prior to placement in the MEC Scrap dumpster.
9/8/08	0630-1715	Moved work hours back a half an hour. New hours 0630-1700. Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Teams continue surface clearance operations in S54. Brush cutters continue in S27 with escort. Conducted QC on all outstanding completed grids on S54. Commenced seed planting in S27; planted 27 seeds.
9/9/08	0630-1720	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Surface clearance crews continue operations in S54. Brush cutting crew, with escort, continues working in S27. Conducted QC of all outstanding completed grids. Hard rain in the area from approximately 1100-1500. Local scrap vendor on site to receive briefing and investigate scrap collected to date.
9/10/08	0630-1750	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Clearance crews continue work in S54. We are down to the last remaining grids which are in a high density anomaly area. Conducted Schonstedt test strip qualifications for the

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Date	Time	Event
		UXO techs assigned with team 3 (combination of team 3 and some members from team 2). These team members are working in the high density areas of S54. Our experience has shown that using Schonstedts first helps discriminate the larger anomalies. White's all metals detectors will follow sweeps using the Schonstedts. Brush cutters, with escort, continue operations in S27. Collins surveyors return to survey in OB/OD area on S27.
9/11/08	0630-1725	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Clearance, brush cutters and survey crews continue operations in S54. Team 2 separated from assisting teams in S54 and commenced clearance operations in S27. Had the opportunity to spend a considerable amount of time with each team (today) and assist wherever possible. Teams are doing a superb job and local hires have improved drastically.
9/15/08	0630-1720	Mustered the crew. Brush cutters out due to Hurricane Ike. Daily tailgate safety briefing and planned operations discussed. Cannot access S27 due to downed trees from Hurricane Ike. Consequently, all teams will work in S54 until we can clear access to S27. Conducted a thorough QC of grid G-08 which was a Re-do from a previous QC failure; grid passed QC.
9/16/08	0630-1715	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Brush cutters on site and will clear access to S27. Teams 1 & 3 working in S54; Team 2 working in S27. 0730: Access cleared to S27. Conducted the first QC of grids in S27; all passed. During QC of S27, noticed considerably more downed trees as a result of Hurricane Ike. Consequently, brush cutters are having to re-do many areas that have been previously completed.
9/17/08	0630-1715	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. One team is working on S27; two working on S54; brush cutters, with escort, continue to clean-up S27. EnviroGrind completed brush cutting on S27. SUXOS and I conducted a final check of the area, took "after" pictures, and released the brush cutting crew.
9/18/08	0630-1720	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. 0745: Team 1 completed the last grid in S54 (F08). Team 1 shifted operations to S27. Selected Team 1 members conducting final demolition operations in S54. 1300: SUXOS announces EODT corporate plans to downsize crew after next week.
9/22/08	0630-1715	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Both teams working in S27. Completed

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Date	Time	Event
		surface seeding in S27. Routine day.
9/23/08	0630-1720	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Collins survey onboard to complete placement of LUC signs at S54; Matt Abbott providing escort. 0900: RIVER City Scrap arrives to drop-off five small containers for RRD and MD. River city is now the designated scrap receiver from this point on. SUXOS, myself and USACOE representative investigated the area outside the currently surveyed OB/OD area to try and determine where is best suited to expand the OB/OD area to satisfy contractual requirements. Currently we feel the best area to expand is primarily to the east of the existing area. SUXOS and Corps rep will discuss further with both PM's. 1615: survey crew completes survey of LUC sign placement in S54.
9/24/08	0630-1715	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Crews continue to operate in S27. SUXOS, myself and USACOE representative finalize expanded OB/OD area proposal and submitted recommendations to respective PM's. 1340: Highway 59 Environmental trucks arrive to transport RRD and MD to the local scrap yard. Escorted scrap transfer to Texas Scrap and Salvage in Marshall, Texas (see scrap documentation for specifics).
9/25/08	0630-1725	Mustered the crew. Last day for all local hires and a small number of UXO technicians. All but three local hires showed. Daily tailgate safety briefing and planned operations discussed. Crews combined for surface sweeps. Demolition operations conducted this AM. Chuck Overstreet demo supervisor with Dave Wetstone as assistant. SUXOS and UXOSO oversee demolition operations while I concentrate on field crews. Combined surface crew completes eleven grids. Last day for on-site USACOE representative. All QC/QA completed to date.
		START OF DUAL POSITION QC/SSHO
9/29/08	0630-1720	Mustered the crew. Total of twelve (12) personnel on-site; all UXO technicians with the exception of one FOA. Daily tailgate safety briefing and planned operations discussed. Plans are to combine all field personnel into one team. I will be the dual-functioned UXOSO and UXOQC. Billy Czech reports that he had to go to the local hospital for poison ivy relief yesterday 9/28/09. A rash that he had contracted on 9/25/08 (last work day) had continued to spread on his arms and had totally closed one eye. 0700: contacted EODT UXO Safety Manager, Eugene Mikell. Completed EODT Accident, Incident and Near Miss Report and USACOE Accident Investigation

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Date	Time	Event
		Report 3394 and forwarded to EODT via e-mail. Completed QC on nine outstanding grids.
9/30/08	0630-1715	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Plans are to continue surface sweep operations in S27. Conducted a formal Surface Clearance Checklist and Surveillance on crew (Team 1). Conducted a QC of each individual by anonymously placing a nail in each members sweep lane. Each team member located the nail without incident. 1645: SUXOS reports he was stung by a bee while with Team1 in the field. First aid of alcohol and antiseptic applied. Reports he'll survive.
10/01/08	0630-1710	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Team 1 continues surface clearance operations in S27. Spent at least an hour reorganizing the previous UXOSO files. Found Robert Thomas (previous UXOSO) files to be disorganized, in many cases with duplicated documents and numerous missing daily inspection forms. Informed SUXOS of situation and reorganized as best I could. NOTE: I have started separate UXOSO files commencing the day I took over as UXOSO/QC on 9/29/08. Completed QC of all outstanding completed grids; as I do each day. Placed eight (8) subsurface seeds in the re-designated OB/OD area in S27. There were three grids in the re-designated OB/OD area that were originally planned as surface clearance grids and seeded accordingly. I will leave those seeds as the seed for the OB/OD intrusive operation.
10/02/08	0630-1715	Mustered the crew. Matt Abbott and Adam Hymas, both UXOT2's, demobilized. Daily tailgate safety briefing and planned operations discussed. Team 1 continues surface sweep operations in S27 Four (surface) grids remaining. All four of these grids were originally designated in the OB/OD area, so we anticipate heavy concentrations of anomalies. SUXOS and I recovered old surface test strip anomalies and set-in the sub-surface anomalies in anticipation of upcoming intrusive operations. Caught up on all QC. 1445: Crew completed last surface grid in S27. **SURFACE CLEARANCE OPERATIONS COMPLETE.** Commenced grid set-up in the OB/OD area. Conducted initial training and familiarization of Vallon magnetometer.
10/03/08	0630-1725	Mustered the crew. Norman Miller and David Wetstone demobilized. Down to five field UXO technicians. Daily tailgate safety briefing and planned operations discussed. Discussed, in detail, plans to start intrusive operations and field procedures. Weekly vehicle inspections completed, no discrepancies noted.

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Date	Time	Event
		Insurance cards expire 11/01/08; FOA sent e-mail to EODT for updates. Continued training and familiarization with the Vallon magnetometer. All personnel qualified on the Vallon and Schonstedt magnetometer through the Test Strip for sub-surface operations. Completed QC for all of the surface clearance phase. Thirty grids are waiting final QA. Spent a better part of the day with the crew in the field doing mag and dig operations. Crew is using the White (compensated using a 40mm cartridge at 12") for the initial sweep followed by either the Vallon or Schonstedt for the final sweep. Crew working in Grid E-07. Grid has a large amount of anomalies and the pace is very slow. Estimate crew completed approximately half the grid with over 1,400 anomalies investigated.
10/06/08	0630-1715	Mustered the crew. Kevin Klien demobilized 10/04. JR Castor (UXOT2) and Patrick Milling (UXOT1) report aboard. Daily tailgate safety briefing and planned operations discussed. Crew to continue mag and dig operations in the OB/OD area. Communications check in AM. Processing 2 new hires this AM. 1200: Completed in-processing and qualified two new hires through the test strip. Observed crew better part of the day. Mag and dig operations continue to be slow and tedious. Seems the quickest game plan is to pair members up as a mag and dig pair (one member magging, one digging). Crew was able to complete approximately half a grid with an exorbitant amount of MEC scrap pulled (approximately 600 pounds).
10/07/08	0630-1720	Mustered the crew. Eugene "Woog" Mikell on site to conduct a QC Audit and relieve me next week during my vacation. Daily tailgate safety briefing and planned operations discussed. Crew continues mag and dig operations in the OB/OD area. Communications check first thing in the field. Two John Deere Gators were picked-up by RSC. Participated in QC Audit first half of the day. The second half was spent with the crew in the field. Mag and dig is slow going. Crew dug an additional 660 pounds of scrap and a considerable amount of anomalies. Crew reports sighting a couple snakes in the late afternoon.
10/08/08	0630-1715	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Crew continues mag and dig operations in Area 27. 0710: Communications check from field. Continue EODT QC Audit by Eugene Mikell. USACE Tulsa District and Texas regulators on site to receive briefing on site operations and tour Site 27 (see Visitors Log for names). Observed crew better part of the second half of the day.
10/09/08	0630-	Mustered the crew. Daily tailgate safety briefing and planned

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MEC Removal Action at the Former LHAAP

Date	Time	Event
	1720	operations discussed. Safety briefing discussed (in detail) the Biological Hazard Precautions letter, issued from EODT Corporate Safety regarding poison ivy prevention. Each Individual signed the letter acknowledging their compliance with the preventative measures. Crew continues mag and dig operations in Site 27. 1100: Eugene Mikell completes EODT QC Audit and debriefs SUXOS and I. Comments will be forwarded separately. Observed crew continuing mag and dig operations. Crew experimenting with mag and flagging using the White's, followed by mag and digging, using the Vallons, to see if this process is more efficient. Appears that by doing this we're able to more easily track White's deficiencies (anomalies that the White's may not detect).
10/10/08	0630-1730	Mustered the crew. Daily tailgate safety briefing and planned operations discussed. Conducted weekly vehicle inspections; no major discrepancies noted. 0800: Shawn Woods departs for annual OSHA medical physical. 1000-1200: Conducted demolition operations to dispose of all suspected live MEC located to date (see demolition shot record). 1300: Shawn Woods returns from annual physical with approved Doctor's Certificate. Team 1 continues operations in the OB/OD area. Note: I will be on scheduled vacation next week. Eugene Mikell will fill-in during my absence.
10/13/08	0630-1730	Morning Daily Operations and Safety Brief conducted. Eugene Mikell assumed Safety/QCS duties as of today for the next week. All personnel present and accounted for. One new individual arrived on site (Yasir Abdulraham). Individual will review work plan, APP, and receiving training on PPE, HAZCOM and equipment certification. Teams conducting operations in S27-G-04. Communication check status green (good). Conducted indoctrination training with Yasir. Completed all required training/certification on magnetometers at 1230. Individual assigned to team working in OB/OD. QC continued working with Yasir instructing him on dig techniques, magnetometer operations and general grid operations.
10/14/08	0630-1730	Morning operations and safety briefing conducted. Items covered during safety briefing include hand tool use, care and maintenance, expected weather conditions for the day, PPE. Communications check with team (good). Inspected 1000 lbs of MEC Debris, planted remaining seed items in OB/OD Area and conducted QC of Grid S27 G-04 (passed).
10/15/08	0630-1730	Morning operations and safety briefing conducted. Items covered included hydration, site cleanliness, slips trips & falls.

EODT UXOQC Daily Log
MEC Removal Action at the Former LHAAP

Date	Time	Event
		Communication check with team (good). The SUXOS reiterated the fact that we are looking for 40mm and above items. Inspected 400 lbs of munitions debris. 1230 Chuck Overstreet (TL) was taken home sick, Manny Repollet will replace Chuck as Team Leader.
10/16/08	0630-1730	Morning Operations and Safety Briefing conducted. Items covered Seatbelts, Drivers responsible to ensure all occupants have seatbelt on before moving, weather, extra vehicular traffic (logging trucks), wet surfaces due to rain last night watch footing when digging. Random seatbelt check conducted vehicle occupants compliant with requirements. Communications check conducted with team (good). During today's operations I spoke with Billy Czech about wearing safety glasses and JR Castor about wearing gloves while handling debris. Both individuals complied with request and donned PPE. Observed biological precautions, all team members are performing decon as instructed during breaks and at the end of the day. Observed team operations for entire afternoon.
10/17/08	0630-1730	Conducted Daily Safety Brief, items discussed weather, PPE wear, biological hazard precautions, SOP 112 (heavy equipment) and briefed the goal and importance of no recordable accidents in the next 3 months. Communications check with team (good). Inspected and separated 300 lbs of scrap, no MEC found. Advised SUXOS that the Red F150 was past due (Aug 08) an oil change. He will address. Conducted QC of grid S27 F-04, grid requires rework of open area. Observed team operations and decon at breaks and end of day. Personnel are becoming more aware of the biological issues and the impact on EODT as a company. Eugene Mikel will depart 18 Oct and Tom Hinote will return to the site on 20 Oct 2008.
10/20/08	0630-1715	Back from vacation. Mustered the crew. Billy Czech demobilized 10/18. Daily safety briefing and planned operations discussed. Briefed weekly reminder regarding biological hazard precautions and comments from corporate safety (Eugene Mikell) from last night's conversation. Equipment and radio check with crew completed. Inspected and separated approximately 200 lbs of scrap. Observed and spent majority of day with crew in the field. Mag and dig operations continue to encounter a high count of anomalies. Conducted QC check of grid F-04; grid passed QC.
10/21/08	0630-1710	Mustered the crew. Daily safety briefing and planned operations discussed. Briefed need to re-program White's magnetometers. Re-programmed all White's used in the field. Equipment and radio check with crew completed. Crew continues mag and dig operations in the OB/OD area. LUC warning signs arrive. Inspected and segregated approximately 300 lbs of scrap.

EODT UXOQC Daily Log
MEC Removal Action at the Former LHAAP

Date	Time	Event
10/22/08	0630-1715	Mustered the crew. Daily safety briefing and planned operations discussed. Briefed 4-step MEC-scrap inspection process and search techniques. Equipment and radio check with crew completed. Crew continues mag and dig operations in the OB/OD area. 1000-1130: Conducted demolition operations to dispose of all live MEC recovered since the last demolition operations. Crew continued working until final set-up and detonation (approximately 15 minutes total own time).
10/23/08	0630-1710	Mustered the crew. Daily safety briefing and planned operations discussed. Reminded crew of not getting complacent and the hazards of complacency. Equipment and radio check with crew completed. Conducted a QC check of grids C-05 & C-06; C-06 has a concrete culvert that parallels the south side of the road that runs approximately 50-70 ft. Crew working in grid D-05 which is highly saturated with anomalies.
10/24/08	0630-1725	Mustered the crew. Manny Repollet demobilized. Daily and weekly safety briefing and planned operations discussed. Weekly vehicle inspections completed with no major discrepancies. Equipment and radio check with crew completed. Crew continues mag and dig ops in OB/OD area. Conducted demolition operations in the afternoon to dispose of all live items for the week. During conversations between myself, SUXOS and EODT PM, the PM has informed us that we will have to investigate the swamp area previously identified in the northern portion of Site 27. Previous discussions centered around safety concerns and issues regarding large numbers of venomous snakes as well as health risks with operating in this environment. I phoned the EODT UXO Safety, Eugene Mikell to (further) express my concerns.
10/27/08	0630-1715	Mustered the crew. Robert Chandler and Jacob Payton (both UXOT2) checking aboard. Individuals will review work plan, APP, and receive training on PPE, HAZCOM and equipment certification. Daily safety briefing and planned operations discussed. Reminded crew of bio-hazard precautions and preventions. Radio check with crew completed. Two new members fully in-briefed and qualified through the test pit. 1500: Tim Bohannon, USACE UXO Safety representative reports aboard and provided briefing on site and issues of concern.
10/28/08	0630-1710	Mustered the crew. Daily safety briefing and planned operations discussed. Briefed crew on changes to bio-hazard precautions and directives as stipulated in the recent e-mail forwarded by EODT Safety. Equipment and radio check with crew completed. SUXOS and I conducted a survey of the swamp area to ascertain the best

EODT UXOQC Daily Log
MEC Removal Action at the Former LHAAP

Date	Time	Event
		plan of attack. During the survey, discovered that the swamp has dried significantly, allowing for access by foot for the vast majority of the swamp area. SUXOS informed PM of findings. Assisted USACE representative with the initial QA of the six completed grids in the OB/OD area of site 27. All six grids passed QA, CEHNC 948 form to follow. As directed by the EODT PM, pulled the old OB/OD boundary stakes and replaced them along the six turning points in the new (re-designated) OB/OD area (12 total grids). Received the AHA for Wetland Surface Sweep Using Boat. Contacted EODT MR UXO Safety Specialist, Eugene Mikell, to inform him that the swamp area has dried-up significantly. He had been notified earlier by the PM. Swamp area is a go!!
10/29/08	0630-1710	Mustered the crew. Daily safety briefing and planned operations discussed. Discussed MGFD and pass/fail criteria. Equipment and radio check with crew completed. Crew continues to work in Grid D-05 of the OB/OD area. 1030-1430; Steve Voland and Ron Madden on site to observe operations and discuss company issues with crew. Steve and Ron briefed crew from 1230-1415 then departed. USACE safety representative continued QA on the surface clearance grids in Site 27.
10/30/08	0630-1715	Mustered the crew. Daily safety briefing and planned operations discussed. Discussed CPR and snake bite first aid and response/specifics of dealing with a potential snake bite. Equipment and radio check with crew completed. 0930: Team 1 finally completed grid D-05. Subsequently conducted a QC and QA, both passed. Team shifted ops to grid D-06.
10/31/08	0630-1720	Mustered the crew. Daily safety briefing and planned operations discussed. Discussed surface sweep in the wetlands area and potential hazards. Conducted weekly vehicle inspections (Ford Expedition needs tire repairing (slow leak), and new gas cap). Equipment and radio check with crew completed. Team 1 continues intrusive operations in the OB/OD area. 0930: SUXOS, UXOSO/QC, and three team members from Team 1 break-off and conduct a final surface sweep of the “swamp area” in grids H09, H10, & J09 that were previously underwater. 1130: Surface sweep completed and subsequently passed QC/QA. 1500-1630: Conducted demolition operations to dispose of all live items located since the last disposal operation (see demolition Shot record for this date).
11/03/08	0630-1710	Returned to “standard time” over the weekend. Mustered the crew. Daily safety briefing and planned operations discussed. Team 1 will continue intrusive operations in the OB/OD area. Radio and

EODT UXOQC Daily Log
MEC Removal Action at the Former LHAAP

Date	Time	Event
		equipment check with crew good. SUXOS and I installed eleven (11) LUC signs in site 27; 5 of the 11 were in the swamp area.
11/04/08	0630-1715	Mustered the crew. Daily safety briefing and planned operations discussed. Briefed safety program overview and minor/major disciplinary infractions and consequences. Equipment and radio check completed. Team completed intrusive operations in grid D06 and shifted operations to E05. SUXOS and I placed 16 LUC signs in site 27. Certain ground areas in site 27 are extremely hard packed and consequently require a considerable more amount of drilling to complete the required 2 feet in the ground.
11/05/08	0630-1710	Mustered the crew. Daily safety briefing and planned operations discussed. Discussed EODT Policy and Procedures and specifically the requirement to wear seat belts any time a vehicle is moving. Equipment and radio check with crew completed. Crew continues to work grid E05. Completed QC of grid D06 in the OB/OD area; grid passed QC. Completed placement of all LUC signs in area 27; installed 37 signs today. Conducted a final QC check of all 64 LUC signs placed in area27. All signs meet or exceed PWS requirements.
11/06/08	0630-1715	Mustered the crew. Daily safety briefing and planned operations discussed. Safety discussions centered on mini-excavator/backhoe operations and AHA briefing. Equipment and radio checks with crew completed. 0710-0810: Thunderstorm delay due to inclement weather in area. Crew continues to work grid E05. 1015: Backhoe arrived and thoroughly inspected. Shawn Woods designated as the backhoe operator. Shawn fully qualified, in writing. Observed Shawn operating backhoe outside the OB/OD area to ensure his proficiency. Shawn has clearly demonstrated he has the knowledge and experience to effectively and safely operate the backhoe. Commenced backhoe operations in the afternoon. Twenty-two LUC signs were installed at Site 54 (#'s 1-22).
11/07/08	0630-1710	Mustered the crew. Bob Chandler and Jake Payton's last day. Both will demobilize tomorrow. Daily safety briefing centered on 3-Phase quality checks and purpose of quality program. Weekly vehicle inspections conducted; no major discrepancies. See vehicle inspection sheets for specifics. Equipment and radio checks with crew completed. Crew completed backhoe digs in F06 and D06. Conducted demolition operations in the afternoon to dispose of all located MEC this week.
11/10/08	0630-1715	Mustered the crew; down to one, 5-man team. Daily safety briefing and planned operations discussed. Briefed crew on weekly

EODT UXOQC Daily Log
MEC Removal Action at the Former LHAAP

Date	Time	Event
		reminder to continue prescribed bio-hazard precautions. Equipment and radio checks with crew completed. Conducted initial QC of 2 grids (partially) completed in the OB/OD area. Grid F06 requires additional backhoe digs in the one main pit where we pulled numerous items out. Grid E05 is completed. Installed an additional 22 LUC signs at Site 54. To date 44 of the 64 LUC signs are installed and QC completed.
11/11/08	_	Veterans Day Holiday. Plans to work this day are cancelled due to extreme inclement weather (thunderstorms and heavy rain).
11/12/08	0630-1715	Mustered the crew. Daily safety briefing and planned operations discussed. Weather forecast calls for scattered rain and possible thunderstorms to remain in the area until this afternoon. Equipment and radio check with crew completed. Crew continues to work in Grid E06. Completed final QC of Grids E05 & F06. An investigation of Grid F05 revels that approximately 1/3rd of this grid is currently underwater. Parts of the standing water are over a foot in depth. As a result, we will shift mag and dig operations to E07, F07, & G07 to allow the water to subside.
11/13/08	0630-1710	Mustered the crew. Daily safety briefing and planned operations discussed. Heavy fog in the area this morning. Equipment and radio check with crew complete. JR Castor accidentally cuts right index finger while sharpening a shovel. Member was properly wearing all required PPE. The wound was field cleaned and dressed and Castor returned to work. Crew completed Grid E06 and E07 and shifted to F07. Completed installation of LUC signs at Site 54. **ALL LUC signs are installed and final QC conducted.**
11/14/08	0630-1720	Mustered the crew. Daily safety briefing and planned operations discussed. Weekly vehicle inspections completed; see vehicle inspection form for specifics. Equipment and radio check with crew completed. Crew continues mag and dig in Grid F07. Completed QC of Grid E06 & E07. Conducted demolition operations in the afternoon to dispose of all MEC located this week (see demo shot record for details). Weekly magazine inspection and inventory completed.
11/17/08	0630-1715	Mustered the crew. Chuck Overstreet (UXOT3) demobilized 11/15/08. Down to 4 UXO technicians (1 UXOT2, 3 UXOT1). SUXOS to fill role as Team Leader for this week. Daily safety briefing and planned operations discussed. Plans are to complete all field operations this week. Equipment and radio check with crew completed. Assisted with final QA of Grids E06, E07 and the pit in F06. It was determined that the pit in F06 could potentially have

EODT UXOQC Daily Log
MEC Removal Action at the Former LHAAP

Date	Time	Event
		MEC below the required 4 feet depth. To date we have excavated and pulled (13) empty (expended) 155mm illumination rounds and a large quantity of expended 155mm cartridges from the 155mm round. The onsite USACE UXO safety representative (Tim Bohannon) has confirmed that the pit could have items below 4 feet and has documented that on the CEHNC 948 Form for grid F06. Crew completed grid E07 and shifted operations to grid G07.
11/18/08	0630-1710	Mustered the crew. Daily safety briefing and planned operations discussed. Equipment and radio check with crew completed. Completed QC check of Grid F07. Team completed G07 and shifted operations to F05 (last grid). Three members from the USACE, Tulsa district stopped-by to discuss LHAAP clean-up effort and progress to date. Members were given a short briefing and they indicated they would stop by tomorrow for a tour of Site 27 and the OB/OD area.
11/19/08	0630-1715	Mustered the crew. Daily safety briefing and planned operations discussed. Equipment and radio check completed. 0730: Assisted the LHAAP Fish & Wildlife to detect an underground water main. 1000: Completed QC of Grid G07. Subsequently assisted USACE representative with a QA of F07 & G07. Crew continues to operate in F05. 1615: Yasir Abdulrahman was stung by ground bees (approximately 5 times). First aid administered in the field and Yasir returned to work while being observed the remainder of the day. Yasir reports that the bee stings hurt, but that he'll be OK.
11/20/08	0630-1715	Mustered the crew. Daily safety briefing and planned operations discussed. Equipment and radio checks with crew completed. Assisted LHAAP Fish & Wildlife to confirm location of a water line they have been searching for. Crew completed mag and dig operations in Grid F05, and commenced field clean-up.
11/21/08	0630-1700	Mustered the crew. Daily safety briefing and planned operations discussed. Plans are to finalize clean-up at Site 27, conduct final demolition operations, completed QC/QA, and complete site cleanout and pack-out. Grid F05 passed QC/QA. Demolition operations complete; disposed/de-milled all remaining MEC and shapes (empty rounds/carts); expended all remaining explosives. Crew to de-mobilize tomorrow. River City Iron & Metal picked-up all scrap and signed all required documents. Conducted a final sweep of Sites 54 & 27 to ensure the sites were left cleaned and uncluttered. I will stay until all the trailers and last remaining rental equipment is picked-up, next Monday. **LAST ENTRY THIS LOG**

EODT UXOQC Daily Log
MEC Removal Action at the Former LHAAP

Notes for Using This Log: This log is intended to be a continuous table that will extend from page to page. The header, footer and first row of the table will be carried to each new page and a running log of the pages will be kept in the footer. To extend the length of the table (i.e., add additional rows) simply place the cursor in the Event column of the last row and press the “Tab” key. For simplicity of use, make each new entry in a new line within the table. For the first event entry each day enter the date in the first row under the previous days events, enter the time of the event and then the event description After that just enter additional time and event information on successive rows. There is no need to enter a new date with every event recorded within a given date since the rows in the date column can be merged at the end of the entries for a given date (see Example below). To merge the rows in the Date column at the end of the day, place your cursor in the row at the start of the day, click left mouse button, drag down and highlight all rows in the date column down to the last entry for the day. Release the left mouse button and with the cursor over part of the highlighted column click the right mouse button and select “Merge Cells” in the pop-up menu. Once you have mastered these instructions, or before final submission of this log, delete these instructions and the example table below.

Date	Time	Event
03/22/01	0700	Event 1
	0730	Event 2
	0800	Event 3
	Etc	Event 4
	Etc	Event 5
	Etc	Event 6
	1630	Event 7
03/23/01	0700	Event 1
	0745	Event 2
	01630	Event 3

Three Phase Quality Control Checklist
LHAAP
MEC Surface Clearance
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): Preparatory (P); Initial (I); Follow-up (F)		

Checklist						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	WP	Have all team members reviewed the current Work Plan (WP)?				(*P)July 08*
2	WP	Is a current copy of WP available to the Team when conducting field ops?				(*P),(I),(F) July 08*
3	WP, DDESB TP 18	Do the UXO Team members meet personnel training requirements of the references?				*(P)*
4	WP	Are required metal detector calibration records on site and are detectors operated on the required programs/settings?				*(P),(I)*
5	WP	Has each metal detector operator successfully passed the Test Strip prior to field operations and his/her qualification properly documented?				*(P)*
6	WP	Have all unauthorized personnel been evacuated before beginning field operations?				*(I),(F)*
7	WP	Are ingress routes to the work zone (WZ) monitored to ensure unauthorized personnel cannot enter the WZ?				*(I),(F)*
8	WP	Are teams establishing control lanes approx 5ft in width and using detectors to aid in search for surface anomalies?				*(I), (F)*
9	WP	Have all MEC/MPPEH items been positively identified before movement and those unsafe and/or unidentifiable photographed and marked appropriately for avoidance?				*(I),(F)*
10	WP	Has all MEC/MPPEH and MD/RRD been properly inspected, segregated, and removed from the grid surface?				*(I),(F)*
11	WP	Are the Team Leaders observing each worker and randomly inspecting a portion of his/her swept lane(s)?				*(I),(F)*
12	WP	Are all live MEC items discovered disposed of properly (BIP, consolidated, etc)?				*(I),(F)*
13	WP	Were 100% of QC surface seed items located?				*(I),(F)*

Three Phase Quality Control Checklist
LHAAP
MEC Surface Clearance
Karnack, TX

14	WP	Is the UXO team leader performing the secondary inspection of all MEC and non-MEC scrap?				*(I), (F)*
15	WP	Did the SUXOS or UXOQCS complete the third inspection of all MEC and non-MEC scrap?				*(I), (F)*
16	WP	Are MEC and non-MEC scrap containers properly marked?				*(I),(F)*
17	WP	Has the Grid Map and Grid Tracking Log been completed for each grid?				*(I),(F)*

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
LHAAP
Brush Cutting
Karnack, TX

Team Information		
Team:	Location:LHAAP	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): Preparatory (P) Initial (I) Follow-up (F)		

Checklist						
Item	Reference.	Inspection Point	Yes	No	N/A	Comments
1	WP	Have all team members reviewed the current Work Plan (WP)?				*(P) July 08*
2	WP	Is a current copy of WP available to the Team when conducting field ops?				*(P),(I),(F) July 08*
3	WP	Are brush cutters and escorts maintaining 50 ft clearance from other field teams?				*(P), (I), (F)*
4	WP	Do the UXO Escorts meet personnel training requirements of the WP?				*(P)*
5	WP	Are brush cutters being escorted by a minimum 1 UXOT2?				*(P), (I), (F)*
6	WP	Are UXO Techs/metal detector operators performing hand held detector aided surface sweeps for MEC?				*(I), (F)*
7	WP	Are all live MEC items discovered: visually inspected, characterized and flagged?				*(I),(F)*
8	WP	Are all MEC items discovered disposed of daily?				*(I),(F)*
9	WP	Are MEC items that can be moved consolidated for later disposal the same day found?				*(I),(F)*
10	WP	Are MEC items unacceptable to move disposed of in place (Blow In Place, BIP)?				*(I), (F)*
11	WP	Prior to moving MEC items, did the UXOT3 or UXOSO/QC determine the item was considered safe to move?				*(I),(F)*
12	WP	Were all trees 1 inches or less cut?				*(I),(F)*
13	WP	To the greatest extent possible, has the grubbing crew cleared debris to allow an unobstructed view of the ground?				*(I),(F)*
14	WP	Were all brush cutting personnel wearing appropriate PPE?				*(I),(F)*
15	WP	Are all personnel involved with brush cutting aware of the safety distance for operating Hydro Ax, Fecon Grinder and tractor with rotary motor (300ft)?				*(P),(I),(F)*
16	WP	Are non-UXO personnel aware of the				*(P), (I), (F)*

Three Phase Quality Control Checklist
LHAAP
Brush Cutting
Karnack, TX

		three "R"s? Recognize potential MEC, Report location of MEC to UXO Tech, and Retreat to safe area.				
17	WP	If UXO Escort suspects Chemical Warfare Material (CWM) is discovered was the SUXOS notified and appropriate actions taken?				*(I), (F)*
18	WP	Did UXO personnel secure the CWM site until appropriate authorities arrive?				*(I), (F)*
19	WP	Were "before" and "after" photos taken of the area designated to be grubbed?				*(P),(I)*

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
Coordination
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): Preparatory (P); Initial (I); Follow-up (F)		

Checklist						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	PWS, WP	Did the EODT PM make contact with the LHAPP site manager two weeks prior to operations?				(P) July 08
2	WP/APP	Has contact and coordination been made with local and regional agencies as directed by the WP/APP?				*(P), (I),(F) July 08*
3	WP	Have arrangements for site-specific support services been made and prerequisite site work completed?				(P), (I) July 08
4	WP	Has contact been made with the local EOD support agency (705th Ord. Co., Ft Polk, LA)?				(P)

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
Log Book Inspections
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): Preparatory (P); Initial (I); Follow-up (F)		

Checklist						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	WP	Are Team Leaders properly documenting daily activities, work-stoppages, equipment quality checks, and all other pertinent entries?				(P), (I),(F) July 08
2	WP	Are all logs and log entries consistent with format and entry requirements?				*(P),(I),(F) July 08*
3	WP	Are logbooks and records being inspected by the SUXOS on a weekly basis?				*(P), (I),(F) July 08*
4	WP	Is the SUXOS' electronic log e-mailed to the PM for QC review at the end of each workweek?				(P), (I), (F) July 08
5	WP	Ensure that the UXOQC is checking logbooks every other Thursday (QCM check).				(F)

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
Mag and Dig Operations
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle) Preparatory (P); Initial (I); Follow-up (F)		

Checklist						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	WP	Have all team members reviewed the current Work Plan (WP)?				*(P) July 08*
2	WP	Is a current copy of WP available to the Team when conducting field ops?				*(P),(I),(F)*
3	WP, DDESB TP-18	Do UXO team members meet personnel requirements?				*(P)*
4	WP	Are required metal detector calibration records on site and are detectors operated on the required programs/settings?				*(P),(I),(F)*
5	WP	Have all UXO team members been tested on all selected detectors at the Test strip and his/her qualification documented?				*(P), (I),(F)*
6	WP	Are metal detectors checked before and after use each day, and documented accordingly?				*(I) ,(F)*
7	WP	Have all unauthorized personnel been evacuated before beginning field operations?				*(P), (I), (F)*
8	WP	Was the exclusion zone established prior to conducting intrusive ops?				*(I), (F)*
9	WP 2.3.3.4	Are Intrusive Teams maintaining a 50 ft buffer between each other and other essential operations?				(I), (F)
10	WP	Are teams establishing control/sweep lanes approximately 5ft in width?				*(I), (F)*
11	WP	Have all MEC/MPPEH items been positively identified before movement and those unsafe and/or unidentifiable photographed and marked appropriately for avoidance?				*(I),(F)*
12	WP	Has all MEC/MPPEH and MD/RRD been properly inspected, segregated, and removed from the work zone?				*(I),(F)*
13	WP	Have all excavation holes been rechecked following anomaly removal to ensure that all anomalies have been prosecuted?				*(I),(F)*

Three Phase Quality Control Checklist
EODT LHAAP
Mag and Dig Operations
Karnack, TX

14	WP	Are all MEC items disposed of properly (BIP, Consolidated, etc)?				*(I),(F)*
15	WP	Are Team Leaders observing each worker and randomly inspecting a portion of his/her sweep lanes?				*(I),(F)*
16	WP	Were 100% of all blind seed items recovered by the intrusive team?				*(I),(F)*
17	WP	If UXO teams discover suspect Chemical Warfare Material (CWM), was the SUXOS notified and were appropriate actions taken?				*(I), (F)*
18	WP	Did UXO personnel secure the CWM site until appropriate authorities arrive?				*(I), (F)*
19	WP	Are UXO team members performing the initial inspection and segregation of MEC and non-MEC scrap?				*(I), (F)*
20	WP	Is the UXO team leader performing the secondary inspection and segregation of MEC and non-MEC scrap?				*(I), (F)*
21	WP	Did the SUXOS or UXOQCS complete the third inspection of MEC Non-MEC scrap?				*(I), (F)*
22	WP	Are MEC and Non-MEC scrap containers properly marked?				*(I),(F)*

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
Mag and Dig Operations
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle) Preparatory (P); Initial (I); Follow-up (F)		

Checklist						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	WP	Have all team members reviewed the current Work Plan (WP)?				*(P) July 08*
2	WP	Is a current copy of WP available to the Team when conducting field ops?				*(P),(I),(F)*
3	WP, DDESB TP-18	Do UXO team members meet personnel requirements?				*(P)*
4	WP	Are required metal detector calibration records on site and are detectors operated on the required programs/settings?				*(P),(I),(F)*
5	WP	Have all UXO team members been tested on all selected detectors at the Test strip and his/her qualification documented?				*(P), (I),(F)*
6	WP	Are metal detectors checked before and after use each day, and documented accordingly?				*(I) ,(F)*
7	WP	Have all unauthorized personnel been evacuated before beginning field operations?				*(P), (I), (F)*
8	WP	Was the exclusion zone established prior to conducting intrusive ops?				*(I), (F)*
9	WP 2.3.3.4	Are Intrusive Teams maintaining a 50 ft buffer between each other and other essential operations?				(I), (F)
10	WP	Are teams establishing control/sweep lanes approximately 5ft in width?				*(I), (F)*
11	WP	Have all MEC/MPPEH items been positively identified before movement and those unsafe and/or unidentifiable photographed and marked appropriately for avoidance?				*(I),(F)*
12	WP	Has all MEC/MPPEH and MD/RRD been properly inspected, segregated, and removed from the work zone?				*(I),(F)*
13	WP	Have all excavation holes been rechecked following anomaly removal to ensure that all anomalies have been prosecuted?				*(I),(F)*

Three Phase Quality Control Checklist
EODT LHAAP
Mag and Dig Operations
Karnack, TX

14	WP	Are all MEC items disposed of properly (BIP, Consolidated, etc)?				*(I),(F)*
15	WP	Are Team Leaders observing each worker and randomly inspecting a portion of his/her sweep lanes?				*(I),(F)*
16	WP	Were 100% of all blind seed items recovered by the intrusive team?				*(I),(F)*
17	WP	If UXO teams discover suspect Chemical Warfare Material (CWM), was the SUXOS notified and were appropriate actions taken?				*(I), (F)*
18	WP	Did UXO personnel secure the CWM site until appropriate authorities arrive?				*(I), (F)*
19	WP	Are UXO team members performing the initial inspection and segregation of MEC and non-MEC scrap?				*(I), (F)*
20	WP	Is the UXO team leader performing the secondary inspection and segregation of MEC and non-MEC scrap?				*(I), (F)*
21	WP	Did the SUXOS or UXOQCS complete the third inspection of MEC Non-MEC scrap?				*(I), (F)*
22	WP	Are MEC and Non-MEC scrap containers properly marked?				*(I),(F)*

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
Prepare Plans
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): Preparatory (P); Initial (I); Follow-up (F)		

Checklist						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	PWS DID MR-005-01	Has an approved Work Plan (WP) been prepared, completed, and approved in accordance with the references?				(*P)July 08*
2	WP	Is a current copy of the WP on site and available to assigned members?				(*P),(I),(F) July 08*
3	WP	Have all site members received training, and/or reviewed the WP/APP and signed the 3-Day On-Site Training and APP Review Form?				(P)
4	WP	Have all assigned members been briefed and are they fully aware of daily, weekly and situational reporting requirements?				(P),(I),(F)

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
Surveyor Support/Surveying
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): Preparatory (P); Initial (I); Follow-up (F)		

Checklist						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	WP	Have all team members reviewed the current Work Plan (WP)?				(*P)July 08*
2	WP	Is a current copy of WP available to the Team when conducting field ops?				(*P),(I),(F)* *July 08*
3	WP DDESB TP 18	Does the UXO escort meet personnel training requirements of the WP?				*(P)*
4	WP	Are the surveyors/escort maintaining a 50 ft buffer between other simultaneous operations?				(*P),(I),(F)*
5	WP	Did the UXO escort conduct a visual and hand-held detector aided surface search for MEC ahead of the survey crew?				(*P),(I),(F)*
6	WP	Is the UXO escort verifying the area is clear of subsurface anomalies prior to installing grid stakes/survey pins?				(*P),(I),(F)*
7	WP	Are grids set at 200 ft X 200 ft and each southwest corner identified by a unique number?				(*P),(I)*
8	WP	Are non-UXO personnel aware of the three "R"s? Recognize a potential MEC item, Report location to UXO Tech and Retreat to a safe area?.				*(P), (I), (F)*
9	WP	Are all GPS control points confirmed/placed as directed?				*(P),(I),(F)*
10	WP	When a new station is occupied with the GPS, has a check been made to another known position to ensure that the station was set up properly?				*(P),(I),(F)*
11	WP	Have traverse points (points set by and used by the Total Station) been looped back to their beginning or tied to other Control points?				*(P),(I),(F)*
12	WP	Have the surveyors logged all positional checks in their daily logbooks?				*(P),(I),(F)*

Three Phase Quality Control Checklist
EODT LHAAP
Surveyor Support/Surveying
Karnack, TX

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
Test Strip Certification
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): Preparatory (P); Initial (I); Follow-up (F)		

Checklist						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	WP	Were members properly trained and given adequate time to become proficient in detection equipment and procedures?				(P) July 08
2	WP	Did the member detect 100% of all placed seed items (within the prescribe distance) with the requisite magnetometer to be used in the field?				*(P), (I) July 08*
3	WP	If a member failed, did he/she receive efficient remedial training?				(P)

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
Test Strip Establishment
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): Preparatory (P); Initial (I); Follow-up (F)		

Checklist						
Item	Ref.	Inspection Point	Yes	No	N/A	Comments
1	WP	Was the designated test strip area investigated using a hand-held magnetometer and clear of any anomalies prior to placement of seed items?				(P) July 08
2	WP	Were the appropriate number and type seed items placed representative of MEC expected for each task?				*(P), (F) July 08*
3	WP	Was detection of the placed seed item confirmed with the requisite magnetometer to be used in the field?				(P) July 08
4	WP	Is the Test Strip clearly marked and convenient to the assigned work areas?				(P)

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
Demolition Operations
Prior – During – After
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): *Preparatory (P); Initial (I); Follow-up (F)*		

Checklist						
Item	Reference	Inspection Point	Yes	No	N/A	Comments
1	*EODT SOP 120D*	Have all team members reviewed the current EODT SOP-120D? *Check Dates/Record of training.*				(*P)*
2	*EODT SOP 120D*	Do the provisions of EODT SOP-120D meet procedural and safety requirements for performing explosive demolition operations at LHAAP and do personnel selected to participate in the procedures meet the requirements specified in the WP?				*(P), (I), (F)*
3	*EODT SOP 120D*	Has the SUXOS completed the mandatory notifications in advance of the conduct of Explosive Demolition Operations (i.e. *Medical, Fire, Security)?*				*(P),(I),(F)*
4	*EODT SOP 120D*	Has the Explosive Safety Quantity Distance arc for the largest munition that will be detonated been used to calculate the Exclusion Zone (EZ) prior to the conduct of demolition operations?				*(P),(I),(F)*
5	*EODT SOP 120D*	Are proper visitor access and control procedures known and followed?				*(P),(I),(F)*
6	*EODT SOP 120D*	Does the integrity of the EZ remain intact until Explosive Demolition Operations are complete?				*(P), (I), (F)*
7	*EODT SOP 120D*	Are appropriate personnel requirements met/achieved for the proper conduct of Explosive Demolition Operations?				*(P), (I), (F)*
8	*EODT SOP 120D*	Is the two man rule concept religiously followed whenever explosives are transported or handled during explosive operations?				*(P), (I), (F)*

Three Phase Quality Control Checklist
EODT LHAAP
Demolition Operations
Prior – During – After
Karnack, TX

9	*EODT SOP 120D*	Does a demolition procedures review occur prior to the conduct of Explosive Demolition Operations in accordance with the requirements of EODT SOP-120D?				*(P), (I), (F)*
10	*EODT SOP 120D*	Is all the equipment/ and materials required for Explosive Demolition Operations available and checked prior to operation conduct in accordance with the provisions of EODT SOP-120D?				*(P), (I), (F)*
11	*EODT SOP 120D*	Is a current copy of EODT SOP-120D, Explosive Safety Submission, Range Certification (when applicable) and EOD Publications (minimum TM60A-1-1-31) available to the Team when conducting Explosive Demolition Operations? *Check dates.*				(*P),(I),(F)*
12	*EODT SOP 120D*	Have sufficient communications been established to enable team/field personnel to communicate with the Site Field Office and emergency response agencies prior to the conduct of operations?				*(P), (I), (F)*
13	*EODT SOP 120D*	Has a backup emergency communication system (air horns) been established in accordance with EODT SOP-120D in the event that radios are inoperative in the EZ?				*(P), (I), (F)*
14	*EODT SOP 120D*	Are there sufficient range vehicles available, with appropriate safety devices installed, to transport and support Explosive Demolition Operation Personnel?				*(P), (I), (F)*
15	*EODT SOP 120D*	Are all vehicle safety requirements of EODT SOP-120D known and strictly observed?				*(P), (I), (F)*
16	*EODT SOP 120D*	Does the SUXOS obtain a weather report prior to the conduct of Explosive Demolition Operations?				*(P), (I), (F)*
17	*EODT SOP 120D*	Are Explosive Demolition Operations denied or cancelled when electrical storms are within 10 miles of the disposal site or when other severe weather conditions exist that would have a negative impact on safety?				*(P), (I), (F)*

Three Phase Quality Control Checklist
EODT LHAAP
Demolition Operations
Prior – During – After
Karnack, TX

18	*EODT SOP 120D*	Are emergency medical support administrative, notification, training, and equipment requirements observed for Explosive Demolition Operations in accordance with EODT SOP-120D?				*(P), (I), (F)*
19	*EODT SOP 120D*	Are fire support administrative, notification, training, and equipment requirements observed for Explosive Demolition Operations in accordance with EODT SOP-120D?				*(P), (I), (F)*
20	*EODT SOP 120D*	Are the PPE items required for Explosive Demolition Operations present and serviceable in accordance with EODT SOP-120D?				*(P), (I), (F)*
21	*EODT SOP 120D*	Are disposal operations only performed by qualified UXO Personnel following the requirements specified in EODT SOP-120D?				*(P), (I), (F)*
22	*EODT SOP 120D*	Does the SUXOS or Demolition Supervisor take the appropriate actions as specified in EODT SOP-120D prior to initiating a demolition shot?				*(I), (F)*
23	*EODT SOP 120D*	Are explosive initiation systems chosen in accordance with EODT SOP-120D provisions?				*(I), (F)*
24	*EODT SOP 120D*	Are only Blow-in-Place (BIP) operations performed for MEC/MPPEH determined to be unsafe to move in accordance with the provisions of EODT SOP-120D?				*(I), (F)*
25	*EODT SOP 120D*	Is the appropriate disposal procedures followed for munitions containing White Phosphorous (WP) filler in accordance with the provisions of EODT SOP-120D?				*(I), (F)*
26	*EODT SOP 120D, WP*	Following the performance of disposal operations does an inspection occur for MPPEH and any other potential anomaly?				*(I), (F)*
27	*EODT SOP 120D*	Does the SUXOS or Demo Supervisor prepare (or modify to meet site specific requirements) Disposal Operations Checklists and Explosive Disposal Logs in accordance with the provisions of EODT SOP-120D?				*(I), (F)*

Three Phase Quality Control Checklist
EODT LHAAP
Demolition Operations
Prior – During – After
Karnack, TX

28	*EODT SOP 120D and WP Sections 8 and 9*	Do all demolition operations conform to the requirements set forth within the EODT SOP 120D and any other germane regulatory guidance?				*(I)*
29	*EODT SOP 120D and WP Sections 8 and 9*	Have all associated hazards, (if any), been cleared and checked?				*(F)*

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
Final Report
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): *Preparatory (P); Initial (I); Follow-up (F)*		

Checklist						
Item	Reference	Inspection Point	Yes	No	N/A	Comments
1	*PWS rev.1 20SEP07*	5.9.2 – Is raw geophysical field data formatted and stored in accordance with specified requirements?				*(P)*
2	*PWS rev.1 20SEP07*	5.9.3 – Is all final processed data formatted and stored in applicable ASCII files, are all inclusions present in files?				*(P)*
3	*PWS rev.1 20SEP07*	5.9.4 – Have all advanced processed data met compliance requirements with this section of the PWS?				*(P)*
4	*PWS rev.1 20SEP07*	5.10 – Are all Geographic Information System (GIS) map files submitted in accordance with all aspects of this section within the PWS?				*(P)*
5	*PWS rev.1 20SEP07*	5.11 c DID MR-045 – Are all meetings supported with the provision of the referenced DID completed and available for inclusion as appendices?				*(P)*
6	*PWS rev.1 20SEP07*	5.11 d DID MR-055 – Have all telephone conversations been supported with the provision of the referenced DID completed and available for inclusion as appendices?				*(P)*
7	*PWS rev.1 20SEP07*	5.11 e DID MR-085 – Are completed Project Status Reports completed in accordance with the referenced DID and available for inclusion as appendices?				*(P)*
8	*PWS rev.1 20SEP07*	6.0 – Are all submittals and correspondence in compliance with guidance provided within the PWS?				*(I)*
9	*PWS rev.1 20SEP07*	6.1 – Are all draft final and final text files in Microsoft Word 2000 or higher? Are all spreadsheets provided in Microsoft EXCEL? Are CADD drawings submitted in Microstation 95 or higher? Are all GIS files in ESRI format?				*(I)*
10	*PWS rev.1 20SEP07*	6.2 – Is a CD ROM of all submittals provided in PDF format uncompressed with links as described in the PWS?				*(I)*

Three Phase Quality Control Checklist
EODT LHAAP
Final Report
Karnack, TX

11	*PWS rev.1 20SEP07*	6.3 – Have all review comments been addressed and provided to the USAESCH Project Manager?				*(I)*
12	*PWS rev.1 20SEP07*	6.6 – Are all items described within this section of the PWS provided to the appropriate addressees inclusion of the required number of copies?				*(I)*
13	*PWS rev.1 20SEP07*	Draft Site Specific Final Report – Has the submission of this document been provided within 21 days upon completion of field activities?				*(I)*
14	*PWS rev.1 20SEP07*	Draft Final Site Specific Final Report – Has this document been submitted within 15 days after receipt of comments?				*(F)*
15	*PWS rev.1 20SEP07*	Final Site Specific Final Report – Has this document been submitted within 15 days after receipt of comments? Has a final electronic copy been provided with each SSFR with updated copy (if necessary) after Final SSFR approval?				*(F)*

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
Land Use Control
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): *Preparatory (P); Initial (I); Follow-up (F)*		

Checklist						
Item	Reference	Inspection Point	Yes	No	N/A	Comments
1	*PWS Task 8*	Do the LUCs outlined in Section 2.4 of the WP and Appendix I meet all performance metrics as identified within the PWS?				*(P) (I) (F)*
2	*PWS Task 8*	Have each of the task requirements of PWS Task 8 been addressed within the WP and/or Appendix I?				*(P) (I) (F)*
3	*WP Section 2.4*	Have the maintenance and monitoring of LUCs included contingencies?				*(P) (I) (F)*
4	*WP Section 2.4.1*	Are all current and future LUCs consistent with CERCLA and TCEQ regulatory guidance?				*(P) (I) (F)*
5	*WP Section 2.4.2*	Have LUC restrictions, signage, and educational information requirements been identified and addressed				*(P) (I) (F)*
6	*WP Section 2.4.2*	Has signage for LUCs been designed and approved? Has a map been created for signage locations?				*(P) (I) (F)*
7	*WP Section 2.4.2.3*	Have boundaries for LUCs been completed and recorded in accordance with 30 TAC 335.569, Appendix III ?				*(P) (I) (F)*
8	*WP Section 2.4.2.4*	Have DoD personnel been identified to provide guidance in the development of educational materials?				*(P) (I) (F)*
9	*WP Section 2.4 Figures 2-2, 2-3A, and 2-3B*	Have signage and educational materials received approval from the appropriate regulatory authority?				*(P) (I) (F)*
10	*WP Section 2.4.2.5*	How will the Environmental Condition of Property document be developed and by which agency?				*(P) (I) (F)*
11	*WP Section 2.4.2.5*	To whom will the educational materials be provided?				*(P) (I) (F)*
12	*WP Section 2.4.2.5*	Have U.S. Army offices been identified to complete annual inspections? Are annual inspection forms provided for site specific inspections?				*(P) (I) (F)*
13	*WP Section 2.4.2.5*	Has a schedule been developed for annual inspections and five year inspections?				*(P) (I) (F)*

Three Phase Quality Control Checklist
EODT LHAAP
Land Use Control
Karnack, TX

14	*WP LHAAP Appendix I*	Have LUC site been identified and mapped? Have potential MEC items been identified?				*(P) (I) (F)*
15	*WP LHAAP Appendix I*	Is there a procedure to up-date information from sites identified for LUCs? As built maps and additional MEC items identified?				*(P) (I) (F)*
16	*WP LHAAP Appendix I*	Are LUC objectives clear and supported by activities to identify, ensure, and restrict possible encroachment?				*(P) (I) (F)*
17	*WP LHAAP Appendix I*	Has a LUC Plan been established and provided to the regulators for comment and approval?				*(P) (I) (F)*
18	*WP LHAAP Appendix I*	Are implementations of the LUCs identified with personnel responsible for documentation, maintenance, monitoring, and reporting?				*(P) (I) (F)*

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

Three Phase Quality Control Checklist
EODT LHAAP
MEC-Related Scrap Inspection/Certification
Karnack, TX

Team Information		
Team:	Location:	Date:
Personnel Present:		
Phase of Inspection (**Highlight** or Circle): *Preparatory (P); Initial (I); Follow-up (F)*		

Checklist						
Item	Reference	Inspection Point	Yes	No	N/A	Comments
1	*WP Section 2.2.1.7*	Are random checks conducted by the UXOQCS on scrap for MEC/MPPEH to ensure items are free from explosives and HTRW? Is documentation utilized?				*(P) (I) (F)*
2	*WP Section 2.3.3.1.2*	Is all scrap material certified prior to removal from site for its intended destination?				*(P) (I) (F)*
3	*WP Section 2.3.7*	Are personnel tasked with inspection and certification of MEC/MPPEH scrap familiar with Chapter 14 of EM 1110-1-4009?				*(P) (I) (F)*
4	*WP Section 2.3.7.2*	Is the UXO Technician III trained to supervise consolidation and containerization of MEC/MPPEH scrap?				*(P) (I) (F)*
5	*WP Section 2.3.7.3*	Is EODT Form 120G-1 available on site for use by the UXOQCS?				*(P) (I) (F)*
6	*WP Section 2.3.7.3*	Are MEC/MPPEH scrap metal procedures available on site?				*(P) (I) (F)*
7	*WP Section 2.3.7.4*	Has the Senior UXO Supervisor ensured that procedures for processing MEC/MPPEH scrap metal and final disposition are adhered to?				*(P) (I) (F)*
8	*WP Section 2.3.7.5*	Did the SUXOS certify all MEC/MPPEH scrap metal prior to final disposition?				*(P) (I) (F)*
9	*WP Section 2.3.7.5*	Is all MEC/MPPEH scrap metal properly containerized, sealed, and labeled?				*(P) (I) (F)*
10	*WP Section 2.3.7.5*	Does documentation for MEC/MPPEH scrap metal include contents, weight of container, location where scrap was obtained, names of certifying and verifying individuals, unique container identification, and seal identification.				*(P) (I) (F)*
11	*WP Section 2.3.7.5*	Is DD form 1348-1A available on site for use in certification/verification documentation?				*(P) (I) (F)*

Three Phase Quality Control Checklist
EODT LHAAP
MEC-Related Scrap Inspection/Certification
Karnack, TX

12	*WP Section 2.3.7.5*	Have all elements of subsection (2) been included on form DD 1348-1A?				*(P) (I) (F)*
13	*WP Section 2.3.7.5*	Has the SUXOS been authorized to sign form DD 1348-1A certifying a 100% verifiable inspection of MEC/MPPEH scrap metal?				*(P) (I) (F)*
14	*WP Section 2.3.7.6*	Is a tracking methodology utilized to assure the receipt of a Certification of Disposal (CDs) for containerized MEC/MPPEH scrap metal?				*(P) (I) (F)*
15	*WP Section 2.3.7.6*	Are these CDs available for inclusion within the final report?				*(P) (I) (F)*
16	*WP Section 8.5.1*	Have the appropriate personnel responsible for MEC/MPPEH scrap metal certification and inspection received documented training?				*(P) (I) (F)*
17	*WP Section 10.3.6*	Has scrap been inspected for MPPEH before being placed in a container?				*(P) (I) (F)*
18	*WP Section 10.3.6*	Has each container been sealed with a unique, tamper-evident seal following insertion of scrap?				*(P) (I) (F)*
19	*WP Section 10.3.6*	Are containers that are full or are not frequently visited, sealed and inspected at least weekly?				*(P) (I) (F)*
20	*WP Section 10.3.6*	Are inspection and transfer-of-custody procedures in strict observance of work plan provisions?				*(P) (I) (F)*
21	*WP Section 10.3.6*	Is a 100% inspection and 100% re-inspection performed for all material removed from site?				*(P) (I) (F)*
22	*WP Section 10.3.6*	Are daily scrap totals estimated by the field teams daily?				*(P) (I) (F)*

Punch list Items	
No.	

Conducted by: _____ Acknowledged by: _____

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -080608-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☒ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☒ Preparatory ☒ Initial ☐Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

QC Checklist "Brush Cutting"; WP: 2.3.3.1.1 (page 2-8), 10.3.2 (page 10-4)

4- Observed Conditions/Activities :

Brush Cutting Escort Activities

5 - Comments:

Briefed Jason Birchfield EODT UXOT3 and Ronney Stewart and Tim Griffin of EnviroGrind on preparatory and initial phases of Brush Cutting escort requirements and brush cutting sub-contractor requirements.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Robert Thomas	Signature: Robert Thomas, UXOQCS (acting)	Date: 08/06/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Robert Thomas, UXOQCS (acting)	Date: 08/06/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -080708-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☒ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

QC Checklist "Brush Cutting"; WP: 2.3.3.1.1 (page 2-8), 10.3.2 (page 10-4)

4- Observed Conditions/Activities :

Brush Cutting and Brush Cutting Escort Activities

5 - Comments:

Briefed Jason Birchfield EODT UXOT3 and Ronney Stewart and Tim Griffin of EnviroGrind on follow-up phases of Brush Cutting escort requirements and brush cutting sub-contractor requirements.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Robert Thomas	Signature: Robert Thomas, UXOQCS (acting)	Date: 08/07/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Robert Thomas, UXOQCS (acting)	Date: 08/07/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -081108-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☒ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☒ Preparatory ☒ Initial ☐Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

Brush Cutting QC Checklist; WP: 2.3.3.1.1 (page 2-8) and 10.3.2 (page 10-4)

4- Observed Conditions/Activities :

Brush Cutting and Brush Cutting Escort Activities

5 - Comments:

Briefed Manny Repollet and William Jones (both EODT UXOT2) on preparatory and initial phases of Brush Cutting escort requirements. In addition, members will receive on-the-job training and familiarization from current brush cutting escorts prior to turn-over.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 08/11/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/11/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -081108-002** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☒ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

Brush Cutting QC Checklist; WP: 2.3.3.1.1 (page 2-8) and 10.3.2 (page 10-4)

4- Observed Conditions/Activities :

Brush Cutting and Brush Cutting Escort Activities

5 - Comments:

First day of permanent UXOQC on-site. Given tour of work site in conjunction with UXOSO oversight. Observed Jason Birchfield during ongoing brush cutting escort services. Jason has been providing UXO escort services to EnviroGrind personnel and received original Bush Cutting Surveillance from acting UXOQC, Robert Thomas (last week).

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 08/11/08

7- Comments

EnviroGrind personnel briefed and complying with references.

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/11/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -081408-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☒ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

Brush Cutting QC Checklist; WP: 2.3.3.1.1 (page 2-8) and 10.3.2 (page 10-4)

4- Observed Conditions/Activities :

Brush Cutting and Brush Cutting Escort Activities

5 - Comments:

Conducted QC Surveillance of UXO Escort, Mallory Miller and EnviroGrind sub-contractors during brush cutting at Site 54.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 08/14/08

7- Comments

EnviroGrind personnel briefed and complying with references for meeting the requirements of contract. Mallory miller extremely alert and aware of escort duties. I find Miller to be a very reliable and diligent UXO Tech.

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/14/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -081808-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☒ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

Brush Cutting QC Checklist; WP: 2.3.3.1.1 (page 2-8) and 10.3.2 (page 10-4)

4- Observed Conditions/Activities :

Brush Cutting and Brush Cutting Escort Activities

5 - Comments:

Conducted QC Surveillance of UXO Escort, Mallory Miller and EnviroGrind sub-contractors during brush cutting at Site 54. During a QC review of what brush cutting was accomplished on Saturday, 8/16, it was observed that there as too much dead-fall and cut brush that had not been pulled and/or grinded to contractual requirements on approximately two grids.

6 - Results of Surveillance

☐ Acceptable	☒ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 08/18/08

7- Comments

EnviroGrind supervisor informed, driven to area of concern and instructed on what areas needed redoing. EnviroGrind immediately responded to the QC verbal request and commenced redoing the identified grids.

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/18/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 Report -082108-001 Contract # LHAAP

☐ UXO Surface Clearance ☐ UXO Survey Support ☒ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

Brush Cutting QC Checklist; WP: 2.3.3.1.1 (page 2-8) and 10.3.2 (page 10-4)

4- Observed Conditions/Activities :

Brush Cutting and Brush Cutting Escort Activities

5 - Comments:

EnviroGrind working the western half of Site 54. Crews are approximately 95% complete with all of Site 54.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 08/21/08

7- Comments

Discussed last remaining areas to be completed (with EnviroGrind field supervisor) and conducted a QC Surveillance of what has been completed on the western half of Site 54. There were some minor areas of downed brush and trees that required additional grinding. Discussions with supervisor concurred with the QC. EnviroGrind anticipates completing all of Site 54 by the close of business today. A final Brush Cutting QC Surveillance will be accomplished prior to EnviroGrind departing Site 54 for Site 27.

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/21/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 Report -082508-001 Contract # LHAAP

☐ UXO Surface Clearance ☐ UXO Survey Support ☒ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

Brush Cutting QC Checklist; WP: 2.3.3.1.1 (page 2-8) and 10.3.2 (page 10-4)

4- Observed Conditions/Activities :

Brush Cutting and Brush Cutting Escort Activities

5 - Comments:

EnviroGrind completed work on Site 54.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 08/25/08

7- Comments

Conducted a final QC check of the last remaining brush cut area at Site 54. Area looks real good and meets or exceeds contractual requirements.

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/25/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 Report -090508-001 Contract # LHAAP

☐ UXO Surface Clearance ☐ UXO Survey Support ☒ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

Brush Cutting QC Checklist; WP: 2.3.3.1.1 (page 2-8) and 10.3.2 (page 10-4)

4- Observed Conditions/Activities :

Brush Cutting and Brush Cutting Escort Activities

5 - Comments:

EnviroGrind contunues work on Site 27. Area looks really good. With the recent high amounts of rain, there are a lot of wet areas in S-27

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 09/05/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 09/05/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 Report -091708-001 Contract # LHAAP

☐ UXO Surface Clearance ☐ UXO Survey Support ☒ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

Brush Cutting QC Checklist; WP: 2.3.3.1.1 (page 2-8) and 10.3.2 (page 10-4)

4- Observed Conditions/Activities :

Final brush cutting on S27.

5 - Comments:

EnviroGrind completed work on Site 27. Area looks really good. See "after" pictures.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 09/17/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 09/17/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 Report -090508-001 Contract # LHAAP

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal ☒ Demolition Ops

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☒ Preparatory ☒ Initial ☐Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

Demolition Checklist, WP: 2.3.4 and 3.7

4- Observed Conditions/Activities :

Preparatory and Initial phases of demolition operations in accordance with references. Sighted references in preparation of field demolition operations.

5 - Comments:

Planned and executed first site demolition operations in S54 to dispose of suspected live MPPEH. Operations in full compliance with references.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 09/05/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 09/05/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 Report -101008-001 Contract # LHAAP

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal ☒ Demolition Ops

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

Demolition Checklist, WP: 2.3.4 and 3.7

4- Observed Conditions/Activities :

Demolition operations IAW references.

5 - Comments:

Planned and executed fourth site demolition operations. Operations in S27 E-05 4 to dispose of suspected live MPPEH (see demolition shot record for specific items disposed of and demolition materials used. Operations in full compliance with references. Crew completely comfortable and extremely proficient in conducting operations.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 10/10/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 10/10/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 Report -110708-001 Contract # LHAAP

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal ☒ Demolition Ops

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

Demolition Checklist, WP: 2.3.4 and 3.7

4- Observed Conditions/Activities :

Demolition operations IAW references. Chuck Overstreet continues as the Demolition Supervisor.

5 - Comments:

Planned and executed weekly demolition operations to dispose of all located MEC this week (see demolition shot record for specific items disposed of and demolition materials used). Operations in full compliance with references. Crew completely comfortable and extremely proficient in conducting operations.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 11/07/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 11/07/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -100308-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☒ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☒ Preparatory ☒ Initial ☐ Follow-up ☐ General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.4 (page 2-10), 2.3.6.5 (page 2-14) and 10.3.5 (page 10-6), Mag & Dig QC Checklist

4- Observed Conditions/Activities :

Preparatory and Initial phases of Mag & Dig operations. Sighted references in preparation of field operations. All assigned members successfully qualified using the Vallon and Schonstedt magnetometers in the established Test Strip.

5 - Comments:

Ready and prepared to commence Mag & Dig operations in the OB/OD area.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 10/03/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 10/03/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -101408-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☒ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.4 (page 2-10), 2.3.6.5 (page 2-14) and 10.3.5 (page 10-6), Mag & Dig QC Checklist

4- Observed Conditions/Activities :

Follow-up of Mag & Dig operations. Sighted references in preparation of field operations. All assigned members successfully qualified using the Vallon and Whites magnetometers in the established Test Strip.

5 - Comments:

Passed evaluation to continue Mag & Dig operations in the OB/OD area.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Eugene Mikell	Signature: Eugene Mikell, UXOQCS	Date: 10/14/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Eugene Mikell, UXOQCS	Date: 10/14/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -102408-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☒ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.4 (page 2-10), 2.3.6.5 (page 2-14) and 10.3.5 (page 10-6), Mag & Dig QC Checklist

4- Observed Conditions/Activities :

Follow-up of Mag & Dig operations.

5 - Comments:

Crew continues Mag & Dig operations, coupled with mag and flag ops in the OB/OD area. Past experience has shown that where there are a large amount of anomalies that it is quicker to mag and flag, followed by mag and dig. This approach allows the team to initially purge anomalies using the White's all metals detector and follow-up with a second sweep using the Vallon detector to ensure a complete and accurate clearance to depth. Though it seems that we are duplicating efforts, a QC check after using only one magnetometer proves the value of conducting the second sweep. In addition, this allows for a team QC check and more than satisfies the requirement of clearing all anomalies.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By:	Signature:	
Tom Hinote, UXOQCS	Tom Hinote, UXOQCS	Date: 10/24/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 10/24/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -110608-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☒ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☒ Preparatory ☐ Initial ☐Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.4 (page 2-10), 2.3.6.5 (page 2-14) and 10.3.5 (page 10-6), Mag & Dig QC Checklist, Backhoe AHA

4- Observed Conditions/Activities :

Backhoe operations and operator check-out. Shawn Woods (UXOT1) qualified operator. After briefing and equipment checks, observed Shawn operating the backhoe outside the WZ. Had Shawn collect dirt and fill-in a pot-hole to see how effective he was in handling the equipment.

5 - Comments:

Conducted a thorough inspection and question/answer session with the RSC driver to confirm backhoe operating parameters before operations. Shawn proved he can effectively and efficiently operate the backhoe.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote, UXOQCS	Signature: Tom Hinote, UXOQCS	Date: 11/06/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 11/06/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -110708-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☒ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☒ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.4 (page 2-10), 2.3.6.5 (page 2-14) and 10.3.5 (page 10-6), Mag & Dig QC Checklist, Backhoe AHA

4- Observed Conditions/Activities :

Backhoe operations to clear 2 grids in the OB/OD area.

5 - Comments:

Grids F06 & E05 had approximately 12 – 15 backhoe digs to finalized clearance of these grids. One blow-pit in F06 required extensive digs, many below 3 feet, to totally clear the hole. Took most of the day to clear these grids using the backhoe.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By:	Signature:	
Tom Hinote, UXOQCS	Tom Hinote, UXOQCS	Date: 11/07/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 11/07/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -101608-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☒ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

EODT SOP 101 & Biological Hazard Precautions Instructions

4- Observed Conditions/Activities :

Observed personnel conducting biological hazard precautionary decontamination procedures

5 - Comments:

Personnel were observed for the entire day. All personnel conducted alcohol solution washing procedures as required and re-applied Ivy Block on exposed skin. The end of the day washing was also conducted as required. Equipment decon requires a little more attention, concentrating on handles and magnetometer grips.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Eugene Mikell	Signature: Eugene Mikell	Date: 10/16/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Eugene Mikell	Date: 10/16/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -110308-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☒ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

EODT SOP 101 & Biological Hazard Precautions Instructions

4- Observed Conditions/Activities :

Observed personnel conducting biological hazard precautionary decontamination procedures

5 - Comments:

Personnel were observed during the morning break and again at the end of the day, when field operations are complete. All personnel conducted alcohol solution washing procedures as required and re-applied Ivy Block on exposed skin. The end of the day washing was also conducted as required. Equipment decon is much better and the crew appears to be totally cognizant of bio-hazard precautions.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote	Date: 11/03/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote	Date: 11/03/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -111308-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☒ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.4.2, (pages 2-19 thru 2-21), Appendix I; QC Checklist "LUC"

4- Observed Conditions/Activities :

Final installation of LUC signs per references.

5 - Comments:

All LUC signs have been installed IAW the references and a final QC Surveillance, followed by a QA Surveillance was conducted. Signs are all visible from sign to sign and placed accordingly!

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote	Date: 11/13/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 11/13/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -092408-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☒ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.7, (pages 2-15 thru 2-18), 10.3.6 (page 10.7); QC Checklist "Scrap"

4- Observed Conditions/Activities :

Observed scrap inspection processes as required by the references.

5 - Comments:

Turned-in first two containers of RRD and MD to local scrap yard (Texas Scrap and Salvage, Marshall, TX). Escorted transporters to local yard and confirmed Disposition with Gregg McClellan of salvage yard (see scrap documents for this date).

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote	Date: 09/24/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 09/24/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 Report -102208-001 Contract # LHAAP

☐ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☒ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.7, (pages 2-15 thru 2-18), 10.3.6 (page 10.7); QC Checklist "Scrap"

4- Observed Conditions/Activities :

Observed scrap inspection processes as required by the references and as briefed during this mornings safety briefing.

5 - Comments:

Crew has a very good understanding of the requirements to thoroughly inspect scrap in accordance with the 4-step process. Crew takes it to the next level and separates scrap according to type (ie: MEC, non-MEC, cultural) Well Done!!!

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote	Date: 10/22/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 10/22/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -081808-001** **Contract # LHAAP**

☒ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☒ Preparatory ☒ Initial ☐Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

QC Checklist "MEC Surface Clearance"; WP: 2.3.3.3.3 (page 2-9), 10.3.4 (page 10-5)

4- Observed Conditions/Activities :

Grid lay-out, use of personnel (local hires, UXOTech's), magnetometer operations, anomaly investigation.

5 - Comments:

First day of field operations. Crews got off to a late start due to the vehicle accident this morning. As anticipated, things initially are slow and crews are familiarizing themselves with actual field conditions.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 08/18/08

7- Comments

As mentioned, initial (first day) operations slow.

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/18/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -082108-001** **Contract # LHAAP**

☒ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

QC Checklist "MEC Surface Clearance"; WP: 2.3.3.3.3 (page 2-9), 10.3.4 (page 10-5)

4- Observed Conditions/Activities :

Teams 1 & 3 field operations. Particularly if the team personnel feel more comfortable with operations and the use of the white magnetometer and it's capabilities.

5 - Comments:

Both team's personnel seem to have improved since the first day this week. Unfortunately, we missed part of the first scheduled day due to a vehicle accident and yesterday was rained-out from 0805. Consequently, we have only had one solid full day of field operations this week. Local hires have improved, but are still somewhat slow and unsure of magnetometer detection capabilities. They have a tendency to chase anomalies and spend too much time wanting to prosecute hits.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 08/21/08

7- Comments

Site management has discussed "ways to speed production" and are continually providing assistance to local hires in an effort to speed the process. We will continue to observe and provide guidance as needed. The jury is still out on how well local hires are going to work out.

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/21/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -082608-001** **Contract # LHAAP**

☒ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.3.3 (page 2-9) and 10.3.4 (page 10-5)

4- Observed Conditions/Activities :

QC of Grid S54 G08

5 - Comments:

Does not meet the standards of the references.

6 - Results of Surveillance

☐ Acceptable	☒ Unacceptable	Deficiency #: 082608-001 NCR #:

Conducted By:	Signature:	
Tom Hinote	Tom Hinote, UXOQCS	Date: 08/26/08

7- Comments

Conducted a QC check of Grid G08 which had been cleared by Team 3. Located numerous unacceptable anomalies in this grid during QC check. Conducted a 50% check of the grid. Team 3 will re-do this grid at a later date. DNR 082608-001 initiated.

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/26/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -090408-001** **Contract # LHAAP**

☒ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.3.3 (page 2-9) and 10.3.4 (page 10-5)

4- Observed Conditions/Activities :

Work practices of both teams 1 & 3.

5 - Comments:

Crews have improved each and every week. Occasionally, local hires need reminding to make sure they over-lap their sweep lanes and outer grid edges.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 09/04/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 09/04/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -090508-001** **Contract # LHAAP**

☒ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.3.3 (page 2-9) and 10.3.4 (page 10-5)

4- Observed Conditions/Activities :

QC failure of S54 D08 on the part of Team 3.

5 - Comments:

During a routine QC check of grid D08, numerous un-investigated anomalies were encountered. Five of these anomalies were slap flares, which constitute failure to achieve desired results. As a result, an DNR was initiated.

6 - Results of Surveillance

☐ Acceptable	☒ Unacceptable	Deficiency #: 090508-002 NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 09/05/08

7- Comments

See NCR 090508-002

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 09/05/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -091108-001** **Contract # LHAAP**

☒ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.3.3 (page 2-9) and 10.3.4 (page 10-5)

4- Observed Conditions/Activities :

Mag and Flag of local hires followed by checks by UXO techs.

5 - Comments:

Local hires have improved drastically. During observations of all teams, I found the flag marks of anomalies were excellent and very few contacts (anomalies) were missed. UXO techs and local hires seem to have (finally) jelled into a cohesive field operating unit.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 09/11/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 09/11/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -092208-001** **Contract # LHAAP**

☒ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.3.3 (page 2-9) and 10.3.4 (page 10-5)

4- Observed Conditions/Activities :

Continued surface clearance operations in S27.

5 - Comments:

Teams continue to do a very good job. There continues to be much better chemistry between all hands and everyone goes about their respective job with proficiency and confidence.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 09/22/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 09/22/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -093008-001** **Contract # LHAAP**

☒ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒ Follow-up ☐ General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.3.3 (page 2-9) and 10.3.4 (page 10-5)

4- Observed Conditions/Activities :

Surface clearance of combined team 1 in S27.

5 - Comments:

We are down to a total of nine (9) field personnel, all UXO techs, combined into one team. Team is conducting individual sweep lanes within the assigned grids. All personnel are doing an outstanding job. I personally conducted a field QC of each technician by anonymously placing a nail within their sweep lane. Each technician located the nail without incident.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 09/30/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 09/30/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -100208-001** **Contract # LHAAP**

☒ UXO Surface Clearance ☐ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☐Follow-up ☒General/Other

3 – References : WP, SOP's, and APP's

WP: 2.3.3.3.3 (page 2-9) and 10.3.4 (page 10-5)

4- Observed Conditions/Activities :

Surface clearance of combined team 1 in S27.

5 - Comments:

CREW COMPLETED SURFACE CLEARANCE IN S27 AND ENTIRE JOB SITE.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote, UXOQCS	Date: 10/02/08

7- Comments

Well done!!

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 10/02/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -080508-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☒ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☒ Preparatory ☒ Initial ☐Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 7.2.5, (page 7-2), 10.3.3 (pages 10.4 & 10.5); QC Checklist "Surveyor Support"

4- Observed Conditions/Activities :

Observed survey crews with escorts and provided over-site, as required.

5 - Comments:

Briefed William Check, EODT UXOT3, Russ Collins and Matt Baker of Collins Survey. Emphasized anticipated hazards and particulars of insuring stake placement area(s) are clean and free of MEC or MPPEH.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Robert Thomas	Signature: Robert Thomas	Date: 08/05/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Robert Thomas, UXOQCS (acting)	Date: 08/05/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -080708-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☒ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 7.2.5, (page 7-2), 10.3.3 (pages 10.4 & 10.5); QC Checklist "Surveyor Support"

4- Observed Conditions/Activities :

Observed survey crews with escorts and provided over-site, as required.

5 - Comments:

Briefed William Check, EODT UXOT3, Russ Collins and Matt Baker of Collins Survey. Daily follow-up surveillance for same crew.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Robert Thomas	Signature: Robert Thomas	Date: 08/07/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Robert Thomas, UXOQCS (acting)	Date: 08/07/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -081108-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☒ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 7.2.5, (page 7-2), 10.3.3 (pages 10.4 & 10.5); QC Checklist "Surveyor Support"

4- Observed Conditions/Activities :

Observed survey crews with escorts and provided over-site, as required.

5 - Comments:

First day of permanent UXOQC on-site. On tour with Robert Thomas who is assigned as the permanent UXOSO and who was acting UXOQC services the first week. Charlie Overstreet providing on-going survey escort and UXO avoidance.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote	Date: 08/11/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/11/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -081208-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☒ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☒ Preparatory ☒ Initial ☐Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 7.2.5, (page 7-2), 10.3.3 (pages 10.4 & 10.5); QC Checklist "Surveyor Support"

4- Observed Conditions/Activities :

Observed survey crew (Collins Survey) with escort and provided over-site, as required.

5 - Comments:

Dave Wetstone providing on-going survey escort and UXO avoidance and received an initial QC Survey Checklist surveillance..

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote	Date: 08/12/08

7- Comments

Only Collins Survey providing surveying this date due to inclement weather.

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/12/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -081408-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☒ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☒ Preparatory ☒ Initial ☐Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 7.2.5, (page 7-2), 10.3.3 (pages 10.4 & 10.5); QC Checklist "Surveyor Support"

4- Observed Conditions/Activities :

Observed survey crew (Collins Survey) with escort and provided over-site, as required.

5 - Comments:

Adam Hymas providing on-going survey escort and UXO avoidance. Survey crew continues to laying-in transects and boundary stakes

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote	Date: 08/14/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 08/14/08

Quality Control Certification Statement

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EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -091008-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☒ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 7.2.5, (page 7-2), 10.3.3 (pages 10.4 & 10.5); QC Checklist "Surveyor Support"

4- Observed Conditions/Activities :

Observed survey crew (Collins Survey) with escort and provided over-site, as required.

5 - Comments:

Jathon Futral providing survey escort and UXO avoidance. Survey crew on site to survey and lay-in stakes for the OB/OD area located on S27.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote	Date: 09/10/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 09/10/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -092308-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☒ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 7.2.5, (page 7-2), 10.3.3 (pages 10.4 & 10.5); QC Checklist "Surveyor Support"

4- Observed Conditions/Activities :

Observed survey crew (Collins Survey, with escort) surveying, marking and placement of LUC sign post for S54.

5 - Comments:

Matt Abbott providing survey escort and UXO avoidance. All prospective sign posts are painted with a high-visible yellow paint with each post marked with an appropriate sign number. Each post is easily spotted and clearly able to follow.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote	Date: 09/23/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 09/23/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

EODT

QC Surveillance Report
LHAAP, Karnack, TX

1 - Definable Features of Work, Table 10-1 **Report -111008-001** **Contract # LHAAP**

☐ UXO Surface Clearance ☒ UXO Survey Support ☐ Vegetation Removal

☐ Intrusive Investigation ☐ MEC/NON MEC Scrap Inspect/Certification ☐ UXO Brush Cutting Support

2 – Phase :

☐ Preparatory ☐ Initial ☒Follow-up ☐General/Other

3 – References : WP, SOP's, and APP's

WP: 7.2.5, (page 7-2), 10.3.3 (pages 10.4 & 10.5); QC Checklist "Surveyor Support"

4- Observed Conditions/Activities :

Observed survey crew (Collins Survey, with escort) surveying, marking and placement of (redefined) OB/OD area.

5 - Comments:

SUXOS providing survey escort and UXO avoidance. Surveyed-in 8 points with green and pink flagging with large nails marked with pink flagging at each point.

6 - Results of Surveillance

☒ Acceptable	☐ Unacceptable	Deficiency #: NCR #:

Conducted By: Tom Hinote	Signature: Tom Hinote	Date: 11/10/08

7- Comments

8 - QCS Review

☒ Concur ☐ Non-Concur	Signature: Tom Hinote, UXOQCS	Date: 11/10/08

Quality Control Certification Statement

"I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by EODT (and each subcontractor) and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above."

Seed tracking list Site 27

LHAAP Karnack, Texas									
Surface Clearance UXO QC Seeds Activity Report	Grid ID	UXO Seed #	UXO QC Seed Description	Easting (ft)	Northing (ft)	UXO Team ID	Date of Seed placement	Date of Discovery	Comments
Site									
27	A03	51	Slap Flare	175	169	2	9/8/2008	9/18/2008	
27	A04	39	Nail	160	36	1	9/8/2008	9/30/2008	
27	A05	10	40mm cart	156	157	1	9/8/2008	9/30/2008	
27	A06	78	Nail	181	26	1	9/8/2008	9/30/2008	
27	A07	50	Slap Flare	118	184	1	9/8/2008	9/29/2008	
27	A08	54	Nail	141	8	1	9/8/2008	9/29/2008	
27	B02	56	Slap Flare	160	148	2	9/8/2008	9/17/2008	
27	B03	26	Nail	192	189	2	9/8/2008	9/18/2008	
27	B04	46	Slap Flare	31	66	1	9/8/2008	9/30/2008	
27	B05	73	Slap Flare	25	44	1	9/22/2008	9/30/2008	OB/OD (PARTIAL)
27	B06	66	Slap Flare	6	26	1	9/30/2008	10/2/2008	Redesignated surface
27	B07	44	Slap Flare	65	40		9/30/2008	10/2/2008	Redesignated surface
27	B08	71	Nail	119	176	1	9/8/2008	9/29/2008	OB/OD (PARTIAL)
27	B09	83	Nail	146	11	1	9/8/2008	9/25/2008	
27	C01	40	Slap Flare	92	196	2	9/8/2008	9/11/2008	
27	C02	69	Nail	26	137	2	9/8/2008	9/17/2008	
27	C03	53	Slap Flare	60	163	2	9/8/2008	9/18/2008	
27	C04	27	40mm practice	164	51	1	9/8/2008	10/1/2008	
27	C05								OB/OD

27	C06								OB/OD
27	C07	56	Slap Flare	20	20	1	9/30/2008	10/2/2008	Redesignated surface
27	C08	68	Nail	20	183	1	9/8/2008	9/29/2008	OB/OD (PARTIAL)
27	C09	74	Nail	10	23	1	9/8/2008	9/25/2008	
27	C10	63	Slap Flare	39	19	1	9/22/2008	9/25/2008	
27	D01	47	Slap Flare	183	194	2	9/8/2008	9/11/2008	
27	D02	44	Slap Flare	157	25	2	9/8/2008	9/17/2008	
27	D03	20	Nail	24	172	2	9/8/2008	9/18/2008	
27	D04	42	Slap Flare	26	24	1	9/8/2008	10/1/2008	OB/OD (PARTIAL)
27	D05								OB/OD
27	D06								OB/OD
27	D07	50	Slap Flare	16	12	1	9/30/2008	10/2/2008	Redesignated surface
27	D08	1	Nail	190	10	1	9/16/2008	9/29/2008	
27	D09	44	Slap Flare	172	165	1	9/22/2008	9/25/2008	
27	D10	33	Nail	174	19	1	9/22/2008	9/25/2008	
27	E01	7	Slap Flare	37	160	2	9/8/2008	9/11/2008	
27	E02	45	Nail	45	12	2	9/8/2008	9/17/2008	
27	E03	3	Slap Flare	185	172	2	9/8/2008	9/22/2008	
27	E04	43	SF Tailboom	151	24	2	9/8/2008	9/24/2008	OB/OD (PARTIAL)
27	E05								OB/OD
27	E06								OB/OD
27	E07	8	Nail	190	132		9/16/2008		Redesignated OB/OD
27	E08	41	Nail	190	100	1	9/16/2008	9/29/2008	
27	E09	24	Nail	12	187	1	9/22/2008	9/29/2008	
27	E10	66	Slap Flare	32	55	1	9/22/2008	9/25/2008	
27	F01	30	Slap Flare	158	72	2	9/10/2008	9/11/2008	
27	F02	73	Slap Flare	159	38	2	9/10/2008	9/17/2008	
27	F03	2	81mm Tailboom	57	170	2	9/8/2008	9/22/2008	
27	F04	14	Slap Flare	53	44		9/8/2008		Redesignated OB/OD
27	F05	58	Nail	182	148		9/16/2008		Redesignated OB/OD
27	F06	72	Nail	190	37	1	9/16/2008	9/18/2008	
27	F07	79	Slap Flare	35	163		9/16/2008		Redesignated OB/OD
27	F08	15	40mm	100	100	1	9/16/2008	9/25/2008	

			practice						
27	F09	56	Slap Flare	160	166	1	9/22/2008	9/25/2008	
27	F10	67	Slap Flare	172	13	1	9/22/2008	9/25/2008	
27	G01	76	Nail	51	183	2	9/10/2008	9/16/2008	
27	G02	22	40mm cart	38	26	2	9/10/2008	9/16/2008	
27	G03	75	Nail	146	158	2	9/10/2008	9/22/2008	
27	G04	55	40mm cart	120	30	2	9/10/2008	9/24/2008	
27	G05	65	Nail	12	190		9/16/2008		Redesignated OB/OD
27	G06	38	Slap Flare	32	57	1	9/16/2008	9/22/2008	
27	G07	16	Nail	160	165		9/16/2008		Redisignated OB/OD
27	G08	25	Slap Flare	167	39	1	9/16/2008	9/24/2008	
27	G09	29	Nail	16	145	1	9/22/2008	9/24/2008	
27	G10	34	40mm practice	39	26	1	9/22/2008	9/24/2008	
27	H01	18	Slap Flare	170	198	2	9/10/2008	9/16/2008	
27	H02	5	40mm practice	140	20	2	9/10/2008	9/16/2008	
27	H03	80	Nail	58	154	2	9/10/2008	9/22/2008	
27	H04	35	Slap Flare	39	30	2	9/10/2008	9/23/2008	
27	H05	37	Slap Flare	192	193	1	9/16/2008	10/1/2008	
27	H06	52	Nail	170	70	1	9/16/2008	9/22/2008	
27	H07	30	Slap Flare	185	181	1	9/16/2008	9/24/2008	
27	H08	4	Nail	3	27	1	9/16/2008	9/23/2008	
27	H09	12	Nail	12	134	1`	9/22/2008	9/23/2008	
27	H10	21	Nail	16	26	1	9/22/2008	9/23/2008	
27	J02	62	Slap Flare	83	18	2	9/10/2008	9/16/2008	
27	J03	70	Nail	167	169	2	9/10/2008	9/23/2008	
27	J04	57	Slap Flare	148	20	2	9/10/2008	9/23/2008	
27	J05	77	Nail	21	105	1	9/16/2008	10/1/2008	
27	J06	64	40mm practice	7	12	1	9/16/2008	9/22/2008	
27	J07	81	Nail	185	181	1	9/16/2008	9/24/2008	
27	J08	7	Slap Flare	186	15	1	9/16/2008	9/23/2008	
27	J09	60	Slap Flare	8	8	1	9/22/2008	9/23/2008	
27	K03	25	Slap Flare	175	182	2	9/10/2008	9/23/2008	
27	K04	82	Nail	193	7	2	9/10/2008	9/22/2008	

27	K05	59	Nail	26	170	1	9/16/2008	10/1/2008	
27	K06	47	Slap Flare	28	79	1	9/16/2008	9/22/2008	
27	K07	40	Slap Flare	22	150	1	9/16/2008	9/23/2008	
27	K08	9	40mm practice	32	26	1	9/16/2008	9/23/2008	
88		82						76	

Seed tracking list Site 27

LHAAP Karnack, Texas										
Surface Clearance UXO QC Seeds Activity Report	Grid ID	UXO Seed #	UXO QC Seed Description	(X) Easting (ft)	(Y) Northing (ft)	(Z) Depth (ft)	UXO Team ID	Date of Seed placement	Date of Discovery	Comments
Site										
27	C05	37	40mm Flare	10	200	3	1	10/14/2008	10/21/2008	
27	C06	65	Nail	195	2	2	1	10/14/2008	10/20/2008	
27	D05	50	40mm Flare	0	195	2	1	10/14/2008	10/22/2008	Located during C05 sweep
27	D06	67	40mm Flare	1	1	3	1	10/14/2008	11/3/2008	
27	E05	017	81mm tlbm	7	161	1	1	10/1/2008	11/7/2008	
27	E06	004	81mm illum	8	8	1	1	10/1/2008	11/13/2008	
27	E07	006	7" pipe	18	21	1	1	10/1/2008	11/13/2008	
27	F04	14	Slap Flare	53	44	0	1	9/8/2008	10/14/200	Redesignated OB/OD

									8	
27	F05	58	Nail	182	148	0	1	10/1/2008	11/18/2008	Redesignated OB/OD
27	F06	007	Fuze Adaptor	159	157	0.5	1	9/8/2008	11/6/2008	
27	F07	001	Fuze Adaptor	172	57	2	1	10/1/2008	11/14/2008	
27	G04	005	4.2 tlbm	4	182	1	1	10/1/2008	10/13/2008	
27	G05	65	Nail	12	190	0	1	9/16/2008	10/10/2008	Redesignated OB/OD
27	G06	002	81mm tlbm	22	181	1	1	10/1/2008	10/9/2008	
27	G07	003	7" pipe	34	50	1.5	1	10/1/2008	11/17/2007	
15		0							15	

Seed tracking list Site 54

LHAAP Karnack, Texas									
Surface Clearance UXO QC Seeds Activity Report	Grid ID	UXO Seed #	UXO QC Seed Description	Easting (ft)	Northing (ft)	UXO Team ID	Date of Seed placement	Date of Discovery	Comments
Site									
54	H02	1	Nail	21.5	71	1	8/14/2008	8/18/2008	
54	H03	2	81mm Tailbm	11	70.5	1	8/14/2008	8/18/2008	
54	G04	3	Slap Flare	195.5	142		8/14/2008	9/3/2008	

54	A05	25	Slap Flare	87	67		9/4/2008	9/8/2008	
54	A04	22	40mm cart.	92	132		9/4/2008	9/8/2008	
54	A03	57	Slap Flare	9	20		9/4/2008	9/8/2008	104 TOTAL SEEDS

APPENDIX F
GRID TRACKING LOGS

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

GRID / ORDNANCE TRACKING LOG

MEC Removal Action at the Former LHAAP
SURFACE SWEEPS
Contract Number: W912DY-04-0018 Task Order: 0014
Project Number: K06TX000503

Grid Number	Team #			Item ID, "M" No. If Available	Condition	Filler	X (Feet)	Y (Feet)	Z Depth (inches)	Anomolies /Digs	MEC Scrap Pounds	Non-MEC Scrap Pounds	Demo Date	Photo	To QC	QC Date	Re-do	To QA	QA Date
SITE 54																			
S54-A03	1										20	0			9/9/08	9/9/08		9/9/08	9/9/08
S54-A04	1										20	0			9/9/08	9/9/08		9/9/08	9/9/08
S54-A05	1										30	35			9/9/08	9/9/08		9/9/08	9/9/08
S54-A06	1										20	20			9/9/08	9/9/08		9/9/08	9/9/08
S54-A07	1										10	5			9/9/08	9/9/08		9/9/08	9/9/08
S54-A08	1										1	20			9/9/08	9/9/08		9/9/08	9/9/08
S54-A09	1										0	0			9/8/08	9/8/08		9/8/08	9/8/08
S54-B02	1										2	15			9/5/08	9/5/08		9/5/08	9/5/08
S54-B03	1										10	10			9/5/08	9/5/08		9/5/08	9/5/08
S54-B04	1										80	0			9/5/08	9/5/08		9/5/08	9/5/08
S54-B05	1										10	10			9/5/08	9/5/08		9/5/08	9/5/08
S54-B06	1			4.2 illum. Mortar	unarmed	inert	x57'	x20'	0	n/a	15	0	9/5/08	2008-09-05/S54-B06.1	9/8/08	9/8/08		9/8/08	9/8/08
				40mm M583A1 Para	unarmed	illuminate composition	x180'	y110	0	n/a			9/5/08	2008-09-05/S54-B06.2					
				40mm M583A1 Para	unarmed	illuminate composition	x196	y77	0	n/a			9/5/08	2008-09-05/S54-B06.2					
				155mm Candle mix	unarmed	illuminate composition	x91'	y90'	0	n/a			9/5/08	2008-09-05/S54-B06.3					
S54-B07	1										5	5			9/8/08	9/8/08		9/8/08	9/8/08
S54-B08	1										5	40			9/8/08	9/8/08		9/8/08	9/8/08
S54-B09	1										5	50			9/8/08	9/8/08		9/8/08	9/8/08
S54-B10	1										5	30			9/8/08	9/8/08		9/8/08	9/8/08
S54-C01	1										0	35			9/4/08	9/8/08		9/8/08	9/8/08
S54-C02			3								5	100			9/9/08	9/9/08		9/9/08	9/9/08
S54-C03			3								0	0			9/9/08	9/9/08		9/9/08	9/9/08
S54-C04			3								10	175			9/9/08	9/9/08		9/9/08	9/9/08
S54-C05			3								10	5			9/9/08	9/9/08		9/9/08	9/9/08
S54-C06			3								20	5			9/9/08	9/9/08		9/9/08	9/9/08
S54-C07			3								5	5			9/9/08	9/9/08		9/9/08	9/9/08
S54-C08	1										30	40			9/10/08	9/10/08		9/10/08	9/10/08
S54-C09	1										25	10			9/10/08	9/10/08		9/10/08	9/10/08
S54-C10	1										25	100			9/8/08	9/8/08		9/8/08	9/9/08
S54-D01			3								10	180			9/5/08	9/5/08		9/5/08	9/5/08
S54-D02			3								5	0			9/5/08	9/5/08		9/5/08	9/5/08
S54-D03			3								55	0			9/8/08	9/8/08		9/8/08	9/8/08
S54-D04			3								25	10			9/8/08	9/8/08		9/8/08	9/8/08
S54-D05			3								100	45			9/8/08	9/8/08		9/8/08	9/8/08
S54-D06			3								750	5			9/11/08	9/11/08		9/11/08	9/11/08
S54-D07			3								350	50			9/10/08	9/10/08		9/10/08	9/10/08
S54-D08			3								20	100			9/5/08	9/5/2008 Failed	1		
S54-D08 Redo	1										130	10			9/10/08	9/10/08		9/10/08	9/10/08
S54-D09			3								20	200			9/5/08	9/5/08		9/5/08	9/5/08
S54-D10			3								10	55			9/5/08	9/5/08		9/5/08	9/5/08
S54-D11			3								5	25			9/5/08	9/5/08		9/5/08	9/5/08
S54-E01			3								1	0			9/3/08	9/4/08		9/4/08	9/4/08
S54-E02			3								15	0			9/3/08	9/4/08		9/4/08	9/4/08
S54-E03			3								10	0			9/3/08	9/4/08		9/4/08	9/4/08
S54-E04			3								15	0			9/3/08	9/4/08		9/4/08	9/4/08
S54-E05	1			Flare Candle	fired	illuminate composition	x30	y45	0	n/a	220	30	9/18/08	2008-09-18/S54-F05	9/17/08	9/17/08		9/17/08	9/17/08
				Flare Candle	fired	illuminate composition	x70	y150	0	n/a			9/18/08	2008-09-18/S54-F05					
S54-E06	1										80	170			9/15/08	9/15/08		9/16/08	9/16/08
S54-E07	1										245	120			9/17/08	9/17/08		9/17/08	9/17/08
S54-E08			3								40	40			8/28/08	8/28/08		8/28/08	8/28/08
S54-E09			3								60	0			8/26/08	8/27/08		8/27/08	8/28/08
S54-E10			3								40	0			8/26/08	8/27/08		8/27/08	8/28/08
S54-E11			3								60	0			8/26/08	8/27/08		8/27/08	8/28/08
S54-F01			3								0	0			9/4/08	9/4/08		9/4/08	9/4/08
S54-F02			3								5	0			9/4/08	9/4/08		9/4/08	9/4/08
S54-F03			3								10	5			9/4/08	9/4/08		9/4/08	9/4/08
S54-F04			3								5	50			9/4/08	9/4/08		9/4/08	9/4/08
S54-F05	1			M583	fired	illuminate composition	x15	y135	0	n/a	75	200	9/18/08	2008-09-18/S54-F05	9/15/08	9/15/08		9/16/08	9/16/08
S54-F06	1										140	200			9/15/08	9/15/08		9/16/08	9/16/08
S54-F07	1			M583 40mm	fired	illuminate composition	x5	y180	0	n/a	260	150	9/18/08	2008-09-18/S54-F07	9/15/08	9/15/08		9/16/08	9/16/08
				M206 Flare	fired	illuminate composition	x40	y65	0	n/a			9/18/08	2008-09-18/S54-F07	9/16/08	9/16/08		9/16/08	9/16/08
				M127Flare	fired	illuminate composition	x180	y195	0	n/a			9/18/08	2008-09-18/S54-F07	9/16/08	9/16/08		9/16/08	9/16/08
S54-F08	1			M127Flare	fired	illuminate composition	x110	y115	0	n/a	850	150	9/18/08	2008-09-18/S54-F08.1	9/18/08	9/18/08		9/18/08	9/18/08
				M127Flare	fired	illuminate composition	x165	y125	0	n/a			9/18/08	2008-09-18/S54-F08.2					
				M127Flare	fired	illuminate composition	x140	y90	0	n/a			9/18/08	2008-09-18/S54-F08.3					
S54-F09			3								60	150			8/25/08	8/26/08		8/26/08	8/26/08
S54-F10			3								40	60			8/25/08	8/26/08		8/26/08	8/26/08
S54-F11			3								0	60			8/25/08	8/26/08		8/26/08	8/26/08
S54-G01			3								5	25			9/5/08	9/5/08		9/5/08	9/5/08
S54-G02			3								5	5			9/4/08	9/4/08		9/4/08	9/4/08
S54-G03			3								5	75			9/4/08	9/4/08		9/4/08	9/4/08
S54-G04			3								5	5			9/4/08	9/4/08		9/4/08	9/4/08
S54-G05			3								0	10			8/19/08	8/21/08		8/25/08	8/25/08
S54-G06			3								0	85			8/19/08	8/21/08		8/25/08	8/25/08
S54-G07			3								0	150			8/21/08	8/26/08		8/26/08	8/27/08
S54-G08			3								0	75			8/21/08	8/26/08 Failed	1		
S54-G08 Redo	1										800	20			9/15/08	9/15/08		9/16/08	9/16/08
S54-G09	1										380	40			9/11/08	9/11/08		9/11/08	9/11/08
S54-G10			3								15	0			8/25/08	8/26/08		8/26/08	8/26/08
S54-G11			3								5	50			8/25/08	8/26/08		8/26/08	8/26/08
S54-H01	1										2	2			8/21/08	8/25/08		8/26/08	8/26/08
S54-H02	1										10	10			8/18/08	8/21/08		8/25/08	8/25/08

S54-H03	1										10	60			8/19/08	8/21/08		8/25/08	8/25/08
S54-H04	1										5	10			8/19/08	8/21/08		8/25/08	8/25/08
S54-H05	1										100	280			9/4/08	9/4/08		9/4/08	9/4/08
S54-H06	1										200	250			9/4/08	9/4/08		9/4/08	9/4/08
S54-H07	1										330	115			9/4/08	9/4/08		9/4/08	9/4/08
S54-H08	1										450	50			9/3/08	9/4/08		9/4/08	9/4/08
S54-H09	1										45	20			8/27/08	8/28/08		8/28/08	8/28/08
S54-H10	1										20	40			8/27/08	8/28/08		8/28/08	8/28/08
S54-H11	1										0	40			8/27/08	8/28/08		8/28/08	8/28/08
S54-J01	1										5	5			8/21/08	8/25/08		8/26/08	8/26/08
S54-J02	1										5	50			8/21/08	8/25/08		8/26/08	8/26/08
S54-J03	1										5	125			8/21/08	8/25/08		8/26/08	8/26/08
S54-J04	1										10	30			8/21/08	8/25/08		8/26/08	8/26/08
S54-J05	1										35	500			8/26/08	8/27/08		8/27/08	8/28/08
S54-J06	1										30	400			8/26/08	8/27/08		8/27/08	8/28/08
S54-J07	1										50	200			8/26/08	8/27/08		8/27/08	8/28/08
S54-J08	1										50	20			8/28/08	8/28/08		8/28/08	8/28/08
S54-J09	1										35	20			8/28/08	8/28/08		8/28/08	8/28/08
S54-J10	1										2	2			8/28/08	8/28/08		8/28/08	8/28/08
S54-K02	1										5	5			8/26/08	8/27/08		8/27/08	8/28/08
S54-K03	1										5	5			8/26/08	8/27/08		8/27/08	8/28/08
S54-K04	1										5	5			8/26/08	8/27/08		8/27/08	8/28/08
S54-K05	1										10	30			8/25/08	8/26/08		8/27/08	8/27/08
S54-K06	1										50	100			8/25/08	8/26/08		8/27/08	8/27/08
S54-K07	1										25	10			8/25/08	8/26/08		8/27/08	8/27/08
S54-K08	1										35	125			8/25/08	8/26/08		8/27/08	8/27/08
S54-K09	1										5	25			8/25/08	8/26/08		8/27/08	8/27/08
S54-L04	1										2	2			8/26/08	8/27/08		8/27/08	8/28/08
S54-L05	1										5	80			8/25/08	8/26/08		8/27/08	8/27/08
S54-L06	1										25	35			8/25/08	8/26/08		8/27/08	8/27/08
S54-L07	1										5	5			8/25/08	8/26/08		8/27/08	8/27/08
S54-L08	1										5	5			8/25/08	8/26/08		8/27/08	8/27/08
TOTAL:	**64**	**0**	**42**								6880	5981			108	106	2	106	106
SITE 27																			
S27-A03		2									5	0			9/22/08	9/22/08		9/22/08	9/22/08
S27-A04	1										20	0			10/1/08	10/1/08		10/2/08	10/29/08
S27-A05	1										25	30			10/1/08	10/1/08		10/2/08	10/29/08
S27-A06	1										55	70			10/1/08	10/1/08		10/2/08	10/29/08
S27-A07	1										65	5			9/30/08	9/30/08		10/1/08	10/29/08
S27-A08	1										15	5			9/30/08	9/30/08		10/1/08	10/29/08
S27-A09	1										0	0			9/25/08	9/25/08		9/25/08	9/25/08
S27-B02		2		M62 Flare	fired	illuminate composition	x170	y65	0	n/a	20	0	9/25/08	2008-09-17/S27-B02	9/18/08	9/18/08		9/18/08	9/18/08
S27-B03		2									20	1			9/22/08	9/22/08		9/22/08	9/22/08
S27-B04	1			M62 Flare	fired	illuminate composition	x160	y180	0	n/a	15	5	10/10/08	2008-09-30/S27-B04	10/1/08	10/1/08		10/2/08	10/29/08
S27-B05	1			M62 Flare	fired	illuminate composition	x182	y67	0	n/a	25	0	10/10/08	2008-09-30/S27-B05	10/1/08	10/1/08		10/2/08	10/29/08
				M62 Flare	fired	illuminate composition	x164	y76	0	n/a			10/10/08	2008-09-30/S27-B05					
				M62 Flare	fired	illuminate composition	x98	y178	0	n/a			10/10/08	2008-09-30/S27-B05					
				M62 Flare	fired	illuminate composition	x198	y200	0	n/a			10/10/08	2008-09-30/S27-B05					
S27-B06	1										85	0			10/3/08	10/3/08		10/4/08	10/29/08
S27-B07	1			M62 Flare	fired	illuminate composition	x21	y172	0	n/a	305	10	10/10/08	2008-10-02/S27-B07	10/3/08	10/3/08		10/4/08	10/29/08
S27-B08	1										45	0			9/30/08	9/30/08		10/1/08	10/29/08
S27-B09	1										5	0			9/29/08	9/29/08		9/30/08	10/30/08
S27-B10	1										0	0			9/25/08	9/25/08		9/25/08	9/25/08
S27-C01		2									5	0			9/15/08	9/16/08		9/16/08	9/16/08
S27-C02		2		M112 Flare	fired	illuminate composition	x100	y100	0	n/a	50	0	9/25/08	2008-09-17/S27-C02	9/18/08	9/18/08		9/18/08	9/18/08
S27-C03		2		M62 Flare	fired	illuminate composition	x155	y164	0	n/a	20	1	9/25/08	2008-09-18/S27-C03	9/22/08	9/22/08		9/22/08	9/22/08
S27-C04	1			M62 Flare	fired	illuminate composition	x1	y97	0	n/a	10	0	10/10/08	2008-10-01/S27-C04	10/2/08	10/2/08		10/3/08	10/29/08
S27-C07	1			M62 Flare	fired	illuminate composition	x180	y8	0	n/a	65	0	10/10/08	2008-10-02/S27-C07	10/3/08	10/3/08		10/6/08	10/29/08
S27-C08	1			M12 Cartridge	unfired	Photoflash	x189	y196	0	n/a	55	5	10/10/08	2008-09-29/S27-C08	9/30/08	9/30/08		10/2/08	10/29/08
S27-C09	1										7	0			9/29/08	9/29/08		9/30/08	10/30/08
S27-C10	1										3	0			9/29/08	9/29/08		9/30/08	10/30/08
S27-D01		2									20	0			9/15/08	9/16/08		9/16/08	9/16/08
S27-D02		2									100	0			9/18/08	9/18/08		9/18/08	9/18/08
S27-D03		2		M62 Flare	fired	illuminate composition	x132	y42	0	n/a	20	1	9/25/08	2008-09-18/S27-D03.1	9/22/08	9/22/08		9/22/08	9/22/08
				M62 Flare	fired	illuminate composition	x180	y107	0	n/a			9/25/08	2008-09-18/S27-D03.2					
S27-D04	1			M62 Flare	fired	illuminate composition	x12	y62	0	n/a	125	0	10/10/08	2008-10-01/S27-D04.1	10/2/08	10/2/08		10/2/08	10/29/08
				M62 Flare	fired	illuminate composition	x68	y72	0	n/a			10/10/08	2008-10-01/S27-D04.2					
				M62 Flare	fired	illuminate composition	x68	y122	0	n/a			10/10/08	2008-10-01/S27-D04.3					
				M62 Flare	fired	illuminate composition	x89	y124	0	n/a			10/10/08	2008-10-01/S27-D04.4					
				M62 Flare	fired	illuminate composition	x144	105	0	n/a			10/10/08	2008-10-01/S27-D04.5					
				M62 Flare	fired	illuminate composition	x198	y95	0	n/a			10/10/08	2008-10-01/S27-D04.6					
				M62 Flare	fired	illuminate composition	x29	y102	0	n/a			10/10/08	2008-10-01/S27-D04.7					
				M112 Flare	fired	illuminate composition	x175	y175	0	n/a			11/7/08	2008-09-25/S27-D04.8					
				M112 Flare	fired	illuminate composition	x160	y175	0	n/a			11/7/08	2008-09-25/S27-D04.9					
				M62 Flare	fired	illuminate composition	x170	y190	0	n/a			11/7/08	2008-09-25/S27-D04.10					
				M112 Flare	fired	illuminate composition	x180	y190	0	n/a			11/7/08	2008-09-25/S27-D04.11					
S27-D07	1			M62 Flare	fired	illuminate composition	x115	y52	0	n/a	55	20	10/10/08	2008-10-02/S27-D07.1	10/3/08	10/3/08		10/6/08	10/29/08
				M62 Flare	fired	illuminate composition	x168	y28	0	n/a			10/10/08	2008-10-02/S27-D07.2					
				M62 Flare	fired	illuminate composition	x189	y69	0	n/a			10/10/08	2008-10-02/S27-D07.3					
				M62 Flare	fired	illuminate composition	x11	y168	0	n/a			10/10/08	2008-10-02/S27-D07.4					
S27-D08	1			M62 Flare	fired	illuminate composition	x187	y128	0	n/a	25	0	10/10/08	2008-09-29/S27-D08.1	9/30/08	9/30/08		10/1/08	10/29/08
				M62 Flare	fired	illuminate composition	x40	y84	0	n/a			10/10/08	2008-09-29/S27-D08.2					
S27-D09	1			M112 Flare	fired	illuminate composition	x84	y185	0	n/a	5	0	10/10/08	2008-09-25/S27-D09.1	9/29/08	9/29/08		9/30/08	10/30/08
				M112 Flare	fired	illuminate composition	x160	y42	0	n/a			10/10/08	2008-09-25/S27-D09.2					
				M62 Flare	fired	illuminate composition	x95	y95	0	n/a			10/10/08	2008-09-25/S27-D09.3					
S27-D10	1										2	1			9/29/08	9/29/08		9/30/08	10/30/08
S27-E01		2									20	0			9/15/08	9/16/08		9/16/08	9/16/08
S27-E02		2									150	0			9/18/08	9/18/08		9/18/08	9/18/08
S27-E03		2		M112 Flare	fired	illuminate composition	x30	y180	0	n/a	200	0	9/25/08	2008-09-18/S27-E03.1	9/23/08	9/23/08		9/23/08	9/23/08
				M112 Flare	fired	illuminate composition	x40	y185	0	n/a			9/25/08	2008-09-18/S27-E03.2					
				M112 Flare	fired	illuminate composition	x104	y185	0	n/a			9/25/08	2008-09-18/S27-E03.3					
				M112 Flare	fired	illuminate composition	x172	y195	0	n/a			9/25/08	2008-09-18/S27-E03.4					
				M112 Flare	fired	illuminate composition	x190	x190	0	n/a			9/25/08	2008-09-22/S27-E03.5					
				M112 Flare	fired	illuminate composition	x60	y150	0	n/a			9/25/08	2008-09-22/S27-E03.6					
				M112 Flare	fired	illuminate composition	x65	y180	0	n/a			9/25/08	2008-09-22/S27-E03.7					

S27-E04		2		M112 Flare	fired	illuminate composition	x40	y50	0	n/a	150	0	9/25/08	2008-09-24/S27-E04.1	9/25/08	9/25/08		9/25/08	9/25/08
				M112 Flare	fired	illuminate composition	x103	y45	0	n/a			9/25/08	2008-09-24/S27-E04.2					
				M112 Flare	fired	illuminate composition	x60	y80	0	n/a			9/25/08	2008-09-24/S27-E04.3					
				M112 Flare	fired	illuminate composition	x176	y90	0	n/a			9/25/08	2008-09-24/S27-E04.4					
				M112 Flare	fired	illuminate composition	x50	y20	0	n/a			9/25/08	2008-09-24/S27-E04.5					
				M112 Flare	fired	illuminate composition	x195	y130	0	n/a			9/25/08	2008-09-24/S27-E04.6					
				M112 Flare	fired	illuminate composition	x185	y120	0	n/a			9/25/08	2008-09-24/S27-E04.7					
				M112 Flare	fired	illuminate composition	x50	y66	0	n/a			9/25/08	2008-09-24/S27-E04.8					
				M112 Flare	fired	illuminate composition	x160	y40	0	n/a			9/25/08	2008-09-24/S27-E04.9					
				M112 Flare	fired	illuminate composition	x160	y60	0	n/a			9/25/08	2008-09-24/S27-E04.10					
				M112 Flare	fired	illuminate composition	x55	y35	0	n/a			9/25/08	2008-09-24/S27-E04.11					
				M112 Flare	fired	illuminate composition	x165	y110	0	n/a			9/25/08	2008-09-24/S27-E04.12					
				M112 Flare	fired	illuminate composition	x100	y80	0	n/a			9/25/08	2008-09-24/S27-E04.13					
				M112 Flare	fired	illuminate composition	x90	y80	0	n/a			9/25/08	2008-09-24/S27-E04.14					
				M112 Flare	fired	illuminate composition	x35	y115	0	n/a			9/25/08	2008-09-24/S27-E04.15					
				M112 Flare	fired	illuminate composition	x30	y120	0	n/a			9/25/08	2008-09-24/S27-E04.16					
				M112 Flare	fired	illuminate composition	x30	y145	0	n/a			9/25/08	2008-09-24/S27-E04.17					
				M112 Flare	fired	illuminate composition	x30	y145	0	n/a			9/25/08	2008-09-24/S27-E04.18					
				M112 Flare	fired	illuminate composition	x30	y145	0	n/a			9/25/08	2008-09-24/S27-E04.19					
				M112 Flare	fired	illuminate composition	x35	y150	0	n/a			9/25/08	2008-09-24/S27-E04.20					
				M112 Flare	fired	illuminate composition	x45	y150	0	n/a			9/25/08	2008-09-24/S27-E04.21					
				M112 Flare	fired	illuminate composition	x45	y150	0	n/a			9/25/08	2008-09-24/S27-E04.22					
				M112 Flare	fired	illuminate composition	x30	y150	0	n/a			9/25/08	2008-09-24/S27-E04.23					
				M112 Flare	fired	illuminate composition	x40	y148	0	n/a			9/25/08	2008-09-24/S27-E04.24					
				M112 Flare	fired	illuminate composition	x40	y165	0	n/a			9/25/08	2008-09-24/S27-E04.25					
				M112 Flare	fired	illuminate composition	x40	y165	0	n/a			9/25/08	2008-09-24/S27-E04.26					
				M112 Flare	fired	illuminate composition	x40	y165	0	n/a			9/25/08	2008-09-24/S27-E04.27					
				M112 Flare	fired	illuminate composition	x60	y160	0	n/a			9/25/08	2008-09-24/S27-E04.28					
				M112 Flare	fired	illuminate composition	x20	y145	0	n/a			9/25/08	2008-09-24/S27-E04.29					
				M112 Flare	fired	illuminate composition	x115	y150	0	n/a			9/25/08	2008-09-24/S27-E04.30					
				M112 Flare	fired	illuminate composition	x115	y135	0	n/a			9/25/08	2008-09-24/S27-E04.31					
				M112 Flare	fired	illuminate composition	x33	y175	0	n/a			9/25/08	2008-09-24/S27-E04.32					
				M112 Flare	fired	illuminate composition	x115	y195	0	n/a			9/25/08	2008-09-24/S27-E04.33					
				M112 Flare	fired	illuminate composition	x20	y175	0	n/a			9/25/08	2008-09-24/S27-E04.34					
				M112 Flare	fired	illuminate composition	x40	y185	0	n/a			9/25/08	2008-09-24/S27-E04.35					
S27-E08	1			M62 Flare	fired	illuminate composition	x182	y176	0	n/a	20	0	10/10/08	2008-09-29/S27-E08	9/30/08	9/30/08		10/1/08	10/29/08
S27-E09	1			M62 Flare	fired	illuminate composition	x4	y84	0	n/a	35	0	10/10/08	2008-09-29/S27-E09	9/30/08	9/30/08		10/1/08	10/30/08
S27-E10	1										10	0			9/29/08	9/29/08		9/30/08	10/30/08
S27-F01		2									60	0			9/15/08	9/16/08		9/16/08	9/16/08
S27-F02		2									200	0			9/18/08	9/18/08		9/18/08	9/18/08
S27-F03		2		M62 Flare	fired	illuminate composition	x32	y62	0	n/a	200	0	9/25/08	2008-09-22/S27-F03	9/23/08	9/23/08		9/23/08	9/23/08
S27-F08	1			M62 Flare	fired	illuminate composition	x52	y108	0	n/a	65	0	9/25/08	2008-09-25/S27-F08.1	9/29/08	9/29/08		9/30/08	10/29/08
				M62 Flare	fired	illuminate composition	x27	y62	0	n/a			9/25/08	2008-09-25/S27-F08.2					
S27-F09	1			M62 Flare	fired	illuminate composition	x74	y58	0	n/a	25	0	9/25/08	2008-09-25/S27-F09	9/29/08	9/29/08		9/30/08	10/30/08
S27-F10	1										10	0			9/29/08	9/29/08		9/30/08	10/30/08
S27-G01		2									200	0			9/17/08	9/17/08		9/17/08	9/17/08
S27-G02		2		M123 Flare	fired	illuminate composition	195	195	0	n/a	150	0	9/25/08	2008-09-16/S27-GO2	9/17/08	9/17/08		9/17/08	9/17/08
S27-G03		2									400	0			9/23/08	9/23/08		9/23/08	9/23/08
S27-G08	1			M62 Flare	fired	illuminate composition	x164	y54	0	n/a	185	0	9/25/08	9-24-2008/S27-G08.1	9/25/08	9/25/08		9/25/08	9/25/08
				M62 Flare	fired	illuminate composition	x84	y58	0	n/a			9/25/08	9-24-2008/S27-G08.2					
S27-G09	1										165	0			9/25/08	9/25/08		9/25/08	9/25/08
S27-G10	1										0	0			9/25/08	9/25/08		9/25/08	9/25/08
S27-H01		2									20	0			9/17/08	9/17/08		9/17/08	9/17/08
S27-H02		2									150	0			9/17/08	9/17/08		9/17/08	9/17/08
S27-H03		2		M62 Flare	fired	illuminate composition	x60	y80	0	n/a	150	0	9/25/08	2008-09-22/S27-H03	9/23/08	9/23/08		9/23/08	9/23/08
S27-H04		2									200	0			9/24/08	9/24/08		9/24/08	9/24/08
S27-H05	1			M62 Flare	fired	illuminate composition	x180	y104	0	n/a	185	0	10/10/08	2008-10-01/S27-H04	10/2/08	10/2/08		10/3/08	10/31/08
S27-H06	1			M62 Flare	fired	illuminate composition	x55	y80	0	n/a	185	0	9/25/08	2008-09-22/S27-H06	9/23/08	9/23/08		9/23/08	9/23/08
S27-H07	1			M62 Flare	fired	illuminate composition	x47	y23	0	n/a	145	0	9/25/08	2008-09-24/S27-H07.1	9/25/08	9/25/08		9/25/08	9/25/08
				M62 Flare	fired	illuminate composition	x30	17	0	n/a			9/25/08	2008-09-24/S27-H07.2					
S27-H08	1										310	0			9/24/08	9/24/08		9/24/08	9/24/08
S27-H09	1										75	0			9/24/08	9/24/08		9/25/08	11/3/08
S27-H10	1										15	0			9/24/08	9/24/08		9/25/08	11/3/08
S27-J02		2									100	0			9/17/08	9/17/08		9/17/08	9/17/08
S27-J03		2									75	0			9/24/08	9/24/08		9/24/08	9/24/08
S27-J04		2									250	0			9/24/08	9/24/08		9/24/08	9/24/08
S27-J05	1										350	0			10/2/08	10/2/08		10/3/08	10/31/08
S27-J06	1										30	0			9/23/08	9/23/08		9/23/08	9/23/08
S27-J07	1										90	0			9/25/08	9/25/08		9/25/08	9/25/08
S27-J08	1										235	0			9/24/08	9/24/08		9/24/08	9/24/08
S27-J09	1										35	0			9/24/08	9/24/08		9/25/08	11/3/08
S27-K03		2									5	0			9/23/08	9/23/08		9/23/08	9/23/08
S27-K04		2									150	0			9/24/08	9/24/08		9/24/08	9/24/08
S27-K05	1										220	0			10/2/08	10/2/08		10/3/08	10/31/08
S27-K06	1										120	0			9/23/08	9/23/08		9/23/08	9/23/08
S27-K07	1										120	0			9/24/08	9/24/08		9/24/08	9/24/08
S27-K08	1										10	0			9/24/08	9/24/08		9/24/08	9/24/08
TOTAL:	**47**	**28**	**0**	0							6,742	154			75	75	0	75	75

OB/OD																		
S27-C05	1			M62 Flare	fired	illuminate composition	x192	y198	z6	2325	370	0	10/22/08	2008-10-21/S27-C05.1	10/23/08	10/23/08		10/24/08	10/29/08
				M62 Flare	fired	illuminate composition	x183	y103	z2				10/22/08	2008-10-21/S27-C05.2					
				M62 Flare	fired	illuminate composition	x63	y25	z3				10/22/08	2008-10-21/S27-C05.3					
				M62 Flare	fired	illuminate composition	x196	y70	z4				10/22/08	2008-10-21/S27-C05.4					
				M62 Flare	fired	illuminate composition	x188	y57	z1				10/22/08	2008-10-21/S27-C05.5					
				M62 Flare	fired	illuminate composition	x183	y73	z2				10/22/08	2008-10-21/S27-C05.6					
				M62 Flare	fired	illuminate composition	x172	y181	z3				10/22/08	2008-10-21/S27-C05.7					
				M62 Flare	fired	illuminate composition	x153	y95	z4				10/22/08	2008-10-21/S27-C05.8					
				M62 Flare	fired	illuminate composition	x138	y60	z6				10/22/08	2008-10-21/S27-C05.9					
				M62 Flare	fired	illuminate composition	x63	y12	z4				10/22/08	2008-10-21/S27-C05.10					
				M62 Flare	fired	illuminate composition	x193	y90	z6				10/22/08	2008-10-21/S27-C05.11					
				M62 Flare	fired	illuminate composition	x196	y108	z3				10/22/08	2008-10-21/S27-C05.12					
				M62 Flare	fired	illuminate composition	x172	y178	z4				10/22/08	2008-10-21/S27-C05.13					
				M62 Flare	fired	illuminate composition	x170	y11	z6				10/22/08	2008-10-21/S27-C05.14					
				M62 Flare	fired	illuminate composition	x145	y43	z1				10/22/08	2008-10-21/S27-C05.15					
				M62 Flare	fired	illuminate composition	x30	y165	z3				10/22/08	2008-10-21/S27-C05.16					
				M62 Flare	fired	illuminate composition	x98	y9	z6				10/22/08	2008-10-21/S27-C05.17					
				M62 Flare	fired	illuminate composition	x198	y108	z4				10/22/08	2008-10-21/S27-C05.18					
				M62 Flare	fired	illuminate composition	x196	y117	z7				10/22/08	2008-10-21/S27-C05.19					
				M62 Flare	fired	illuminate composition	x160	y70	z3				10/22/08	2008-10-21/S27-C05.20					
				M62 Flare	fired	illuminate composition	x161	y70	z3				10/22/08	2008-10-21/S27-C05.21					
				M62 Flare	fired	illuminate composition	x51	y192	z2				10/22/08	2008-10-21/S27-C05.22					
				M62 Flare	fired	illuminate composition	x49	y113	z1				10/22/08	2008-10-21/S27-C05.23					
				M62 Flare	fired	illuminate composition	x105	y9	z1				10/22/08	2008-10-21/S27-C05.24					
				M62 Flare	fired	illuminate composition	x196	y156	z5				10/22/08	2008-10-21/S27-C05.25					
				M62 Flare	fired	illuminate composition	x199	y182	z1				10/22/08	2008-10-21/S27-C05.26					
				M62 Flare	fired	illuminate composition	x138	108	z6				10/22/08	2008-10-21/S27-C05.27					
				M62 Flare	fired	illuminate composition	x151	y95	z4				10/22/08	2008-10-21/S27-C05.28					
				M62 Flare	fired	illuminate composition	x58	y29	z1				10/22/08	2008-10-21/S27-C05.29					
				M62 Flare	fired	illuminate composition	x61	y69	z2				10/22/08	2008-10-21/S27-C05.30					
				M62 Flare	fired	illuminate composition	x127	y35	z2				10/22/08	2008-10-21/S27-C05.31					
S27-C06	1			M62 Flare	fired	illuminate composition	x130	y20	z10	6800	690	15	10/22/08	2008-10-15/S27-C06.1	10/21/08	10/23/08		10/24/08	10/29/08
				M62 Flare	fired	illuminate composition	x180	y57	z1				10/22/08	2008-10-15/S27-C06.2					
				M62 Flare	fired	illuminate composition	x168	y170	z6				10/22/08	2008-10-15/S27-C06.3					
				M62 Flare	fired	illuminate composition	x110	y39	z8				10/22/08	2008-10-16/S27-C06.4					
S27-D05	1			M112 Flare	fired	illuminate composition	x57	y122	z1	8564	1170	15	10/24/08	2008-10-23/S27-D05.1	10/30/08	10/30/08		10/30/08	10/30/08
				M112 Flare	fired	illuminate composition	x92	y127	z0				10/24/08	2008-10-23/S27-D05.2					
				M112 Flare	fired	illuminate composition	x47	y164	z1				10/24/08	2008-10-23/S27-D05.3					
				M112 Flare	fired	illuminate composition	x42	y192	z2				10/24/08	2008-10-23/S27-D05.4					
				M112 Flare	fired	illuminate composition	x89	y192	y0				10/24/08	2008-10-23/S27-D05.5					
				M112 Flare	fired	illuminate composition	x45	y24	z2				10/24/08	2008-10-23/S27-D05.6					
				M112 Flare	fired	illuminate composition	x52	y18	z0				10/24/08	2008-10-23/S27-D05.7					
				M112 Flare	fired	illuminate composition	x110	y198	z1				10/24/08	2008-10-24/S27-D05.8					
				M112 Flare	fired	illuminate composition	x101	y140	z1				10/24/08	2008-10-24/S27-D05.9					
				M112 Flare	fired	illuminate composition	x146	y184	z2				10/24/08	2008-10-24/S27-D05.10					
				M112 Flare	fired	illuminate composition	x198	y171	z1				10/24/08	2008-10-24/S27-D05.11					
				M112 Flare	fired	illuminate composition	x142	y35	z1				10/24/08	2008-10-24/S27-D05.12					
				M112 Flare	fired	illuminate composition	x144	y35	z1				10/24/08	2008-10-24/S27-D05.13					
				M112 Flare	fired	illuminate composition	x142	y37	z2				10/24/08	2008-10-24/S27-D05.14					
				M112 Flare	fired	illuminate composition	x112	y109	z1				10/24/08	2008-10-24/S27-D05.15					
				M112 Flare	fired	illuminate composition	x112	y103	z1				10/24/08	2008-10-24/S27-D05.16					
				M112 Flare	fired	illuminate composition	x195	y36	z3				10/24/08	2008-10-24/S27-D05.17					
				M112 Flare	fired	illuminate composition	x127	y184	z1				10/31/08	2008-10-27/S27-D05.18					
				M112 Flare	fired	illuminate composition	x128	y172	z3				10/31/08	2008-10-27/S27-D05.19					
				M112 Flare	fired	illuminate composition	x127	y169	z3				10/31/08	2008-10-27/S27-D05.20					
				M112 Flare	fired	illuminate composition	x127	y169	z3				10/31/08	2008-10-27/S27-D05.21					
				M112 Flare	fired	illuminate composition	x127	y169	z3				10/31/08	2008-10-27/S27-D05.22					
				M112 Flare	fired	illuminate composition	x129	y167	z2				10/31/08	2008-10-27/S27-D05.23					
				M112 Flare	fired	illuminate composition	x129	y166	z2				10/31/08	2008-10-27/S27-D05.24					
				M112 Flare	fired	illuminate composition	x128	y159	z3				10/31/08	2008-10-27/S27-D05.25					
				M112 Flare	fired	illuminate composition	x122	y154	z1				10/31/08	2008-10-27/S27-D05.26					
				M112 Flare	fired	illuminate composition	x146	y132	z1				10/31/08	2008-10-27/S27-D05.27					
				M112 Flare	fired	illuminate composition	x129	y158	z2				10/31/08	2008-10-27/S27-D05.28					
				M112 Flare	fired	illuminate composition	x125	y5	z1				10/31/08	2008-10-27/S27-D05.29					
				M112 Flare	fired	illuminate composition	x158	y24	z1				10/31/08	2008-10-27/S27-D05.30					
				M112 Flare	fired	illuminate composition	x16	y145	z2				10/31/08	2008-10-27/S27-D05.31					
				M112 Flare	fired	illuminate composition	x159	y2	z2				10/31/08	2008-10-28/S27-D05.32					
				M112 Flare	fired	illuminate composition	x151	y107	z1				10/31/08	2008-10-28/S27-D05.33					
				M112 Flare	fired	illuminate composition	x193	y94	z2				10/31/08	2008-10-28/S27-D05.34					
				M112 Flare	fired	illuminate composition	x191	y36	z1				10/31/08	2008-10-28/S27-D05.35					
				M112 Flare	fired	illuminate composition	x165	y26	z1				10/31/08	2008-10-28/S27-D05.36					
				M112 Flare	fired	illuminate composition	x173	y72	z2				10/31/08	2008-10-28/S27-D05.37					
				M112 Flare	fired	illuminate composition	x14	y69	z3				10/31/08	2008-10-28/S27-D05.38					
				M62 Flare	fired	illuminate composition	x154	y107	z1				10/31/08	2008-10-28/S27-D05.39					
				M112 Flare	fired	illuminate composition	x15	y69	z3				10/31/08	2008-10-28/S27-D05.40					
				M62 Flare	fired	illuminate composition	x154	y143	z3				10/31/08	2008-10-28/S27-D05.41					
				M112 Flare	fired	illuminate composition	x178	y135	z1				10/31/08	2008-10-28/S27-D05.42					
				M112 Flare	fired	illuminate composition	x178	y135	z1				10/31/08	2008-10-28/S27-D05.43					
				M112 Flare	fired	illuminate composition	x178	y135	z1				10/31/08	2008-10-28/S27-D05.44					
				M112 Flare	fired	illuminate composition	x178	y135	z1				10/31/08	2008-10-28/S27-D05.45					
				M112 Flare	fired	illuminate composition	x178	y135	z1				10/31/08	2008-10-28/S27-D05.46					
				M112 Flare	fired	illuminate composition	x178	y135	z1				10/31/08	2008-10-28/S27-D05.47					
				M112 Flare	fired	illuminate composition	x178	y135	z1				10/31/08	2008-10-28/S27-D05.48					
				M112 Flare	fired	illuminate composition	x172	y95	z3				10/31/08	2008-10-28/S27-D05.49					
				M112 Flare	fired	illuminate composition	x172	y54	z2				10/31/08	2008-10-28/S27-D05.50					
				M112 Flare	fired	illuminate composition	x169	y140	z2				10/31/08	2008-10-28/S27-D05.51					
				M112 Flare	fired	illuminate composition	x25	y10	z1				10/31/08	2008-10-28/S27-D05.52					
				M112 Flare	fired	illuminate composition	x170	y135	z2				10/31/08	2008-10-29/S27-D05.53					
				M112 Flare	fired	illuminate composition	x74	y92	z2				10/31/08	2008-10-29/S27-D05.54					
				M112 Flare	fired	illuminate composition	x76	y131	z2				10/31/08	2008-10-29/S27-D05.55					
				M112 Flare	fired	illuminate composition	x25	y198	z1				10/31/08	2008-10-29/S27-D05.56					
				M112 Flare	fired	illuminate composition	x61	y6	z2				10/31/08	2008-10-29/S27-D05.57					
				M112 Flare	fired	illuminate composition	x62	y51	z3				10/31/08	2008-10-29/S27-D05.58					
				M112 Flare	fired	illuminate composition	x36	y40	z2				10/31/08	2008-10-29/S27-D05.59					
				M112 Flare	fired	illuminate composition	x31	y192	z3				10/31/08	2008-10-29/S27-D05.60					
				M112 Flare	fired	illuminate composition	x31	y192	z3				10/31/08	2008-10-29/S27-D05.61					
				M112 Flare	fired	illuminate composition	x31	y192	z3				10/31/08	2008-10-29/S27-D05.62					
				M112 Flare	fired	illuminate composition	x31	y192	z3				10/31/08	2008-10-29/S27-D05.63					
				M112 Flare	fired	illuminate composition	x189	y124	z1				10/31/08	2008-10-29/S27-D05.64					
				M112 Flare	fired	illuminate composition	x189	y124	z1				10/31/08	2008-10-29/S27-D05.65					
				M112 Flare	fired	illuminate composition	x189	y124	z1				10/31/08	2008-10-29/S27-D05.66					
				M112 Flare	fired	illuminate composition	x62	y160	z2				10/31/08	2008-10-30/S27-D05.67					
				M112 Flare	fired	illuminate composition	x62	y180	z2				10/31/08	2008-10-30/S27-D05.68					
S27-D06	1			M112 Flare	fired	illuminate composition	x152	y196	z2	4332	1030	65	10/31/08	2008-10-30/S27-D06.1	11/4/08	11/5/08		11/6/08	11/6/08
				M112 Flare	fired	illuminate composition	x152	y69	z3				10/31/08	2008-10-30/S27-D06.2					
				M112 Flare	fired	illuminate composition	x191	y87	z2				10/31/08	2008-10-30/S27-D06.3					

				M112 Flare	fired	illuminate composition	x200	y139	z2				10/31/08	2008-10-30/S27-D06.4					
				M112 Flare	fired	illuminate composition	x142	y91	z2				10/31/08	2008-10-31/S27-D06.5					
				M112 Flare	fired	illuminate composition	x142	y190	z2				10/31/08	2008-10-31/S27-D06.6					
				M112 Flare	fired	illuminate composition	x135	y23	z2				10/31/08	2008-10-31/S27-D06.7					
				M112 Flare	fired	illuminate composition	x121	y93	z2				10/31/08	2008-10-31/S27-D06.8					

				M112 Flare	fired	illuminate composition	x124	y0	z2				10/31/08	2008-10-31/S27-D06.9					
				M112 Flare	fired	illuminate composition	x102	y170	z3				10/31/08	2008-10-31/S27-D06.10					
				M112 Flare	fired	illuminate composition	x103	y170	z3				10/31/08	2008-10-31/S27-D06.11					
				M112 Flare	fired	illuminate composition	x2	y2	z2				11/7/08	2008-11-03/S27-D06.12					
				M112 Flare	fired	illuminate composition	x13	y155	z2				11/7/08	2008-11-03/S27-D06.13					
				M112 Flare	fired	illuminate composition	x13	y15	z3				11/7/08	2008-11-03/S27-D06.14					
				M112 Flare	fired	illuminate composition	x18	y4	z3				11/7/08	2008-11-03/S27-D06.15					
				M112 Flare	fired	illuminate composition	x84	y122	z2				11/7/08	2008-11-03/S27-D06.16					
				M112 Flare	fired	illuminate composition	x99	y120	z2				11/7/08	2008-11-03/S27-D06.17					
				M112 Flare	fired	illuminate composition	x69	y164	z2				11/7/08	2008-11-03/S27-D06.18					
				M112 Flare	fired	illuminate composition	x32	y128	z3				11/7/08	2008-11-03/S27-D06.19					
				M112 Flare	fired	illuminate composition	x26	y186	z2				11/7/08	2008-11-03/S27-D06.20					
				M112 Flare	fired	illuminate composition	x92	y5	2				11/7/08	2008-11-03/S27-D06.21					
S27-E05	1			M112 Flare	fired	illuminate composition	x5	y105	z2	5213	825	190	11/7/08	2008-11-04/S27-E05.1	11/10/08	11/12/08		11/12/08	11/13/08
				M112 Flare	fired	illuminate composition	x2	y47	z2				11/7/08	2008-11-04/S27-E05.2					
				M112 Flare	fired	illuminate composition	x2	y47	z2				11/7/08	2008-11-04/S27-E05.3					
				M112 Flare	fired	illuminate composition	x66	y71	z0				11/7/08	2008-11-04/S27-E05.4					
				M112 Flare	fired	illuminate composition	x66	y71	z0				11/7/08	2008-11-04/S27-E05.5					
				M112 Flare	fired	illuminate composition	x40	y148	z2				11/7/08	2008-11-04/S27-E05.6					
				M112 Flare	fired	illuminate composition	x69	y108	z0				11/7/08	2008-11-04/S27-E05.7					
				M112 Flare	fired	illuminate composition	x31	y119	z2				11/7/08	2008-11-04/S27-E05.8					
				M112 Flare	fired	illuminate composition	x65	y76	z3				11/7/08	2008-11-05/S27-E05.9					
				M112 Flare	fired	illuminate composition	x73	y103	z3				11/7/08	2008-11-05/S27-E05.10					
				M112 Flare	fired	illuminate composition	x73	y103	z3				11/7/08	2008-11-05/S27-E05.11					
				M112 Flare	fired	illuminate composition	x73	y103	z3				11/7/08	2008-11-05/S27-E05.12					
				M112 Flare	fired	illuminate composition	x71	y91	z3				11/7/08	2008-11-05/S27-E05.13					
				M112 Flare	fired	illuminate composition	x78	y15	z2				11/7/08	2008-11-05/S27-E05.14					
				M112 Flare	fired	illuminate composition	x78	y103	z3				11/7/08	2008-11-05/S27-E05.15					
				M112 Flare	fired	illuminate composition	x74	y63	z3				11/7/08	2008-11-05/S27-E05.16					
				M112 Flare	fired	illuminate composition	x87	y8	z2				11/7/08	2008-11-05/S27-E05.17					
				M112 Flare	fired	illuminate composition	x73	y125	z2				11/7/08	2008-11-05/S27-E05.18					
				M112 Flare	fired	illuminate composition	x76	y198	z2				11/7/08	2008-11-05/S27-E05.19					
				M112 Flare	fired	illuminate composition	x83	y65	z3				11/7/08	2008-11-05/S27-E05.20					
				M112 Flare	fired	illuminate composition	x90	y97	z2				11/7/08	2008-11-05/S27-E05.21					
				M112 Flare	fired	illuminate composition	x90	y157	z2				11/7/08	2008-11-05/S27-E05.22					
				M112 Flare	fired	illuminate composition	x166	y32	z2				11/7/08	2008-11-06/S27-E05.23					
				M112 Flare	fired	illuminate composition	x112	y25	z3				11/7/08	2008-11-06/S27-E05.24					
				M112 Flare	fired	illuminate composition	x118	y54	z2				11/7/08	2008-11-06/S27-E05.25					
				M112 Flare	fired	illuminate composition	x133	y69	z2				11/7/08	2008-11-06/S27-E05.26					
				M112 Flare	fired	illuminate composition	x131	y90	z2				11/7/08	2008-11-06/S27-E05.27					
				M112 Flare	fired	illuminate composition	x125	y97	z2				11/7/08	2008-11-06/S27-E05.28					
				M112 Flare	fired	illuminate composition	x143	y37	z2				11/7/08	2008-11-06/S27-E05.29					
				M112 Flare	fired	illuminate composition	x143	y37	z2				11/7/08	2008-11-06/S27-E05.30					
				M112 Flare	fired	illuminate composition	x150	y25	z2				11/7/08	2008-11-06/S27-E05.31					
				M112 Flare	fired	illuminate composition	x142	y74	z2				11/7/08	2008-11-06/S27-E05.32					
				M112 Flare	fired	illuminate composition	x155	y54	z2				11/7/08	2008-11-06/S27-E05.33					
				M112 Flare	fired	illuminate composition	x112	y188	z2				11/7/08	2008-11-06/S27-E05.34					
				M112 Flare	fired	illuminate composition	x112	y188	z2				11/7/08	2008-11-06/S27-E05.35					
				M112 Flare	fired	illuminate composition	x150	y3	z2				11/7/08	2008-11-06/S27-E05.36					
S27-E06	1			M112 Flare	fired	illuminate composition	x33	y198	z2	4517	850	20	11/7/08	2008-11-07/S27-E06.1	11/14/08	11/14/08		11/17/08	11/17/08
				M112 Flare	fired	illuminate composition	x47	y156	z3				11/14/08	2008-11-10/S27-E06.2					
				M112 Flare	fired	illuminate composition	x44	y120	z3				11/14/08	2008-11-10/S27-E06.3					
				M112 Flare	fired	illuminate composition	x44	y120	z3				11/14/08	2008-11-10/S27-E06.4					
				M112 Flare	fired	illuminate composition	x44	y120	z3				11/14/08	2008-11-10/S27-E06.5					
				M112 Flare	fired	illuminate composition	x44	y120	z3				11/14/08	2008-11-10/S27-E06.6					
				M112 Flare	fired	illuminate composition	x48	y120	z3				11/14/08	2008-11-10/S27-E06.7					
				M112 Flare	fired	illuminate composition	x48	y120	z3				11/14/08	2008-11-10/S27-E06.8					
				M112 Flare	fired	illuminate composition	x58	y90	z3				11/14/08	2008-11-10/S27-E06.9					
				M112 Flare	fired	illuminate composition	x58	y90	z3				11/14/08	2008-11-10/S27-E06.10					
				M112 Flare	fired	illuminate composition	x52	y118	z3				11/14/08	2008-11-10/S27-E06.11					
				M112 Flare	fired	illuminate composition	x52	y118	z3				11/14/08	2008-11-10/S27-E06.12					
				M112 Flare	fired	illuminate composition	x52	y118	z3				11/14/08	2008-11-10/S27-E06.13					
				M112 Flare	fired	illuminate composition	x62	y144	z3				11/14/08	2008-11-10/S27-E06.14					
				M112 Flare	fired	illuminate composition	x62	y144	z3				11/14/08	2008-11-10/S27-E06.15					
				M112 Flare	fired	illuminate composition	x62	y144	z3				11/14/08	2008-11-10/S27-E06.16					
				M112 Flare	fired	illuminate composition	x62	y144	z3				11/14/08	2008-11-10/S27-E06.17					
				M112 Flare	fired	illuminate composition	x62	y144	z3				11/14/08	2008-11-10/S27-E06.18					
				M112 Flare	fired	illuminate composition	x182	y3	z2				11/14/08	2008-11-12/S27-E06.19					
				M112 Flare	fired	illuminate composition	x89	y152	z3				11/14/08	2008-11-12/S27-E06.20					
				M112 Flare	fired	illuminate composition	x89	y152	z3				11/14/08	2008-11-12/S27-E06.21					
				M112 Flare	fired	illuminate composition	x89	y152	z3				11/14/08	2008-11-12/S27-E06.22					
				M112 Flare	fired	illuminate composition	x93	y160	z3				11/14/08	2008-11-12/S27-E06.23					
				M112 Flare	fired	illuminate composition	x93	y160	z3				11/14/08	2008-11-12/S27-E06.24					
				M112 Flare	fired	illuminate composition	x93	y160	z3				11/14/08	2008-11-12/S27-E06.25					
				M112 Flare	fired	illuminate composition	x151	y26	z2				11/14/08	2008-11-12/S27-E06.26					
				M112 Flare	fired	illuminate composition	x100	y148	z3				11/14/08	2008-11-12/S27-E06.27					
				M112 Flare	fired	illuminate composition	x100	y148	z3				11/14/08	2008-11-12/S27-E06.28					
				M112 Flare	fired	illuminate composition	x132	y84	z3				11/14/08	2008-11-12/S27-E06.29					
				M112 Flare	fired	illuminate composition	x132	y84	z3				11/14/08	2008-11-12/S27-E06.30					
				M112 Flare	fired	illuminate composition	x110	y188	z2				11/14/08	2008-11-13/S27-E06.31					

S27-E07	1			M62 Flare	fired	illuminate composition	x54	y128	z2	2483	735	2	10/10/08	2008-10-03/S27-E07.1	11/14/08	11/14/08		11/17/08	11/17/08
				M62 Flare	fired	illuminate composition	x42	y82	z2				10/10/08	2008-10-03/S27-E07.2					
				M62 Flare	fired	illuminate composition	x4	y61	z2				10/10/08	2008-10-03/S27-E07.3					
				M62 Flare	fired	illuminate composition	x72	y172	z2				10/10/08	2008-10-03/S27-E07.4					
				M62 Flare	fired	illuminate composition	x177	y125	z2				10/10/08	2008-10-03/S27-E07.5					
				M62 Flare	fired	illuminate composition	x65	y58	z2				10/10/08	2008-10-03/S27-E07.6					
				M62 Flare	fired	illuminate composition	x42	y73	z2				10/10/08	2008-10-06/S27-E07.1					
				M62 Flare	fired	illuminate composition	x124	y160	z2				10/10/08	2008-10-06/S27-E07.2					
				M62 Flare	fired	illuminate composition	x60	y150	z2				10/10/08	2008-10-06/S27-E07.3					
				M62 Flare	fired	illuminate composition	x11	y18	z2				10/10/08	2008-10-06/S27-E07.4					
				M62 Flare	fired	illuminate composition	x116	y154	z2				10/10/08	2008-10-06/S27-E07.5					
				M112	fired	illuminate composition	x24	y32	z2				11/14/08	2008-11-13/S27-E07.12					
				M112	fired	illuminate composition	x124	y35	z1				11/14/08	2008-11-13/S27-E07.13					
				M112	fired	illuminate composition	x137	y17	z2				11/14/08	2008-11-13/S27-E07.14					
S27-F04	1			M62 Flare	fired	illuminate composition	x155	y158	z4	1862	1080	120	10/22/08	2008-10-13/S27-F04.1	10/15/08	10/20/08		10/20/08	10/29/08
				M62 Flare	fired	illuminate composition	x93	y176	z1				10/22/08	2008-10-13/S27-F04.2					
				M62 Flare	fired	illuminate composition	x65	y178	z5				10/22/08	2008-10-13/S27-F04.3					
				M62 Flare	fired	illuminate composition	x18	y139	z2				10/22/08	2008-10-13/S27-F04.4					
				M62 Flare	fired	illuminate composition	x95	y143	z10				10/22/08	2008-10-13/S27-F04.5					
				M62 Flare	fired	illuminate composition	x82	y148	z4				10/22/08	2008-10-13/S27-F04.6					
				M62 Flare	fired	illuminate composition	x12	y126	z2				10/22/08	2008-10-13/S27-F04.7					
				M62 Flare	fired	illuminate composition	x143	y76	z2				10/22/08	2008-10-13/S27-F04.8					
				M62 Flare	fired	illuminate composition	x2	y110	z9				10/22/08	2008-10-13/S27-F04.9					
				M62 Flare	fired	illuminate composition	x183	y192	z3				10/22/08	2008-10-13/S27-F04.10					
				M62 Flare	fired	illuminate composition	x82	y150	z3				10/22/08	2008-10-13/S27-F04.11					
				M62 Flare	fired	illuminate composition	x143	y78	z4				10/22/08	2008-10-13/S27-F04.12					
				M62 Flare	fired	illuminate composition	x15	y155	z3				10/22/08	2008-10-13/S27-F04.13					
				M62 Flare	fired	illuminate composition	x1	y109	z3				10/22/08	2008-10-13/S27-F04.14					
				M62 Flare	fired	illuminate composition	x129	y94	z7				10/22/08	2008-10-13/S27-F04.15					
				M62 Flare	fired	illuminate composition	x82	y76	z8				10/22/08	2008-10-13/S27-F04.16					
				M62 Flare	fired	illuminate composition	x142	y67	z9				10/22/08	2008-10-13/S27-F04.17					
				M62 Flare	fired	illuminate composition	x97	y150	z6				10/22/08	2008-10-13/S27-F04.18					
				M62 Flare	fired	illuminate composition	x40	y104	z4				10/22/08	2008-10-13/S27-F04.19					
				M62 Flare	fired	illuminate composition	x144	y105	z1				10/22/08	2008-10-13/S27-F04.20					
S27-F05	1			M112 Flare	fired	illuminate composition	x5	y30	z3	2795	2340	900	11/21/08	2008-11-18/S27-F05.1	11/21/08	11/21/08		11/21/08	11/21/08
				M112 Flare	fired	illuminate composition	x10	y19	z2				11/21/08	2008-11-18/S27-F05.2					
				M112 Flare	fired	illuminate composition	x8	y7	z6				11/21/08	2008-11-18/S27-F05.3					
				M112 Flare	fired	illuminate composition	x24	y4	z3				11/21/08	2008-11-18/S27-F05.4					
				M112 Flare	fired	illuminate composition	x21	y109	z3				11/21/08	2008-11-19/S27-F05.5					
				M112 Flare	fired	illuminate composition	x39	y100	z2				11/21/08	2008-11-19/S27-F05.6					
				M112 Flare	fired	illuminate composition	x42	y116	z4				11/21/08	2008-11-19/S27-F05.7					
				M112 Flare	fired	illuminate composition	x53	y162	z2				11/21/08	2008-11-19/S27-F05.8					
				M112 Flare	fired	illuminate composition	x28	y9	z5				11/21/08	2008-11-19/S27-F05.9					
				M112 Flare	fired	illuminate composition	x66	y43	z3				11/21/08	2008-11-19/S27-F05.10					
				M112 Flare	fired	illuminate composition	x92	y121	z2				11/21/08	2008-11-19/S27-F05.11					
				M112 Flare	fired	illuminate composition	x87	y31	z4				11/21/08	2008-11-19/S27-F05.12					
				M112 Flare	fired	illuminate composition	x69	y88	z1				11/21/08	2008-11-20/S27-F05.13					
				M112 Flare	fired	illuminate composition	x69	y136	z2				11/21/08	2008-11-20/S27-F05.14					
				M112 Flare	fired	illuminate composition	x85	y64	z2				11/21/08	2008-11-20/S27-F05.15					
				M112 Flare	fired	illuminate composition	x87	y53	z2				11/21/08	2008-11-20/S27-F05.16					
				M112 Flare	fired	illuminate composition	x176	y165	z6				11/21/08	2008-11-20/S27-F05.17					
				M112 Flare	fired	illuminate composition	x192	y39	z3				11/21/08	2008-11-20/S27-F05.18					
S27-F06	1			M62 Flare	fired	illuminate composition	x75	y180	z0	0	20	380	9/25/08	2008-09-18/S27-F06.1	11/10/08	11/12/08		11/17/08	11/17/08
				M62 Flare	fired	illuminate composition	x10	y135	z0				9/25/08	2008-09-18/S27-F06.2					
				M62 Flare	fired	illuminate composition	x10	y105	z0				9/25/08	2008-09-18/S27-F06.3					
				M62 Flare	fired	illuminate composition	x90	y55	z0				9/25/08	2008-09-18/S27-F06.4					
				M62 Flare	fired	illuminate composition	x100	y45	z0				9/25/08	2008-09-18/S27-F06.5					
				M62 Flare	fired	illuminate composition	x155	y55	z0				9/25/08	2008-09-18/S27-F06.6					
				M62 Flare	fired	illuminate composition	x110	y45	z3	2135	1260	15	10/10/08	2008-10-06/S27-F06.7					
				M62 Flare	fired	illuminate composition	x179	y181	z7	17	235	0	10/10/08	2008-10-06/S27-F06.8					
				M62 Flare	fired	illuminate composition	x41	y82	z2				10/10/08	2008-10-06/S27-F06.9					
				M62 Flare	fired	illuminate composition	x93	y32	z3				10/10/08	2008-10-06/S27-F06.10					
				M62 Flare	fired	illuminate composition	x160	y32	z8				10/10/08	2008-10-06/S27-F06.11					
				M62 Flare	fired	illuminate composition	x58	y36	z4				10/10/08	2008-10-07/S27-F06.12					
				M62 Flare	fired	illuminate composition	x92	y195	z5				10/10/08	2008-10-07/S27-F06.13					
				M62 Flare	fired	illuminate composition	x47	174	z11				10/10/08	2008-10-07/S27-F06.14					
				M62 Flare	fired	illuminate composition	x62	y105	z5				10/10/08	2008-10-07/S27-F06.15					
				M62 Flare	fired	illuminate composition	x134	y36	z11				10/10/08	2008-10-07/S27-F06.16					
				M62 Flare	fired	illuminate composition	x58	y36	z4				10/10/08	2008-10-07/S27-F06.17					
				M62 Flare	fired	illuminate composition	x15	y127	z9				10/10/08	2008-10-07/S27-F06.18					
S27-F07	1			M112 Flare	fired	illuminate composition	x74	y175	z2	944	647	0	11/14/08	2008-11-14/S27-F07.1	11/18/08	11/18/08		11/19/08	11/19/08
				M112 Flare	fired	illuminate composition	x7	y152	z3				11/14/08	2008-11-14/S27-F07.2					
				M112 Flare	fired	illuminate composition	x12	y12	z2				11/14/08	2008-11-14/S27-F07.3					
				M112 Flare	fired	illuminate composition	x100	y67	z4				11/21/08	2008-11-17/S27-F07.4					
S27-G04	1			M112 Flare	fired	illuminate composition	x125	y125	z0	0	350	0	9/25/08	2008-09-23/S27-G04.1	10/14/08	10/14/08		10/14/08	10/29/08
				M62 Flare	fired	illuminate composition	x79	y192	z1	545	205	0	10/22/08	2008-10-13/S27-G04.2					
S27-G05	1			M62 Flare	fired	illuminate composition	x80	y160	z2	1419	1160	0	10/10/08	2008-10-08/S27-G05.1	10/10/08	10/10/08		10/10/08	10/29/08
				M62 Flare	fired	illuminate composition	x134	y173	z2				10/10/08	2008-10-08/S27-G05.2					
				M62 Flare	fired	illuminate composition	x66	y154	z3				10/10/08	2008-10-08/S27-G05.3					
				M62 Flare	fired	illuminate composition	x42	y12	z2				10/10/08	2008-10-08/S27-G05.4					
				M62 Flare	fired	illuminate composition	x32	y21	z7				10/10/08	2008-10-08/S27-G05.5					
				M62 Flare	fired	illuminate composition	x38	y3	z3				10/10/08	2008-10-08/S27-G05.6					
				M62 Flare	fired	illuminate composition	x24	y182	z3				10/10/08	2008-10-08/S27-G05.7					
				M62 Flare	fired	illuminate composition	x126	y91	z10				10/10/08	2008-10-08/S27-G05.8					
				M62 Flare	fired	illuminate composition	x96	y105	z1				10/10/08	2008-10-08/S27-G05.9					
				M62 Flare	fired	illuminate composition	x62	y161	z5				10/10/08	2008-10-08/S27-G05.10					
				M62 Flare	fired	illuminate composition	x126	y192	z1				10/10/08	2008-10-08/S27-G05.11					
				M62 Flare	fired	illuminate composition	x64	y30	z3				10/22/08	2008-10-10/S27-G05.12					
				M62 Flare	fired	illuminate composition	x28	y55	z8				10/22/08	2008-10-10/S27-G05.13					
				M62 Flare	fired	illuminate composition	x12	y103	z4				10/22/08	2008-10-10/S27-G05.14					
S27-G06	1			M62 Flare	fired	illuminate composition	x15	y140	z0		370	0	9/25/08	2008-09-22/S27-G06.1	10/10/08	10/10/08		10/10/08	10/29/08
				M62 Flare	fired	illuminate composition	x50	y45	zo				9/25/08	2008-09-22/S27-G06.2					
				M62 Flare	fired	illuminate composition	x60	y165	z0				9/25/08	2008-09-22/S27-G06.3					
				M62 Flare	fired	illuminate composition	x115	y135	z0				9/25/08	2008-09-22/S27-G06.4					
				M62 Flare	fired	illuminate composition	x0	y0	z8	1011	500	0	10/10/08	2008-10-08/S27-G06.5					
				M62 Flare	fired	illuminate composition	x75	y148	z2				10/10/08	2008-10-08/S27-G06.6					
				M62 Flare	fired	illuminate composition	x80	y105	z3				10/10/08	2008-10-08/S27-G06.7					
				M62 Flare	fired	illuminate composition	x10	y148	z4				10/10/08	2008-10-08/S27-G06.8					
S27-G07	1			M112 Flare	fired	illuminate composition	x59	y22	z3	1280	1560	0	11/21/08	2008-11-17/S27-F07.1	11/19/08	11/19/08		11/19/08	11/19/08
				M112 Flare	fired	illuminate composition	x46	y78	z3				11/21/08	2008-11-17/S27-F07.2					
				M112 Flare	fired	illuminate composition	x69	y74	z2				11/21/08	2008-11-17/S27-F07.3					
				M112 Flare	fired	illuminate composition	x87	y105	z2				11/21/08	2008-11-17/S27-F07.4					
				M112 Flare	fired	illuminate composition	x58	y175	z3				11/21/08	2008-11-17/S27-F07.5					

TOTAL:	**15**	**0**	**0**							**46,242**	15,397	1,722			15	15	0	15	15

Project Totals	**126**	**28**	**42**							**46,242**	**29,019**	**7,857**	**397**		**198**	**196**	**2**	**196**	**196**

Total Team **S54** Grids Completed:	106
Minus Re-do	2
Total S54 Grids	104

Total Team **S27** Grids Completed:	75
Minus Re-do	0
Total S27 Grids	75

Total Team **OB/OD** Grids Completed:	15
Minus Re-do	0
Total S27 Grids	15

Total Project Grids	194

Ready for QC/QA

Failed QC

Completed

S54 totals			**6,880**	**5,981**
S27 totals			**6,742**	**154**
OB/OD total		**46,242**	**15,397**	**1,722**

EOD TECHNOLOGY, INC.

QA/QC INSPECTION RESULTS

LHAAP, Karnack, TX
Contract Number: W912DY-04-0018 TO#14
MEC Surface Clearance SITE 27

Team #	Date Completed	Grid Number	QC Recv'd	QC Date	Inspection Results	To QA Date	QA Date	Inspection Results	Comments
2	9/11/08	C01	9/15/08	9/16/08	Passed	9/16/08	9/16/08	Passed	
2	9/11/08	D01	9/15/08	9/16/08	Passed	9/16/08	9/16/08	Passed	
2	9/11/08	E01	9/15/08	9/16/08	Passed	9/16/08	9/16/08	Passed	
2	9/11/08	F01	9/15/08	9/16/08	Passed	9/16/08	9/16/08	Passed	
2	9/16/08	G01	9/17/08	9/17/08	Passed	9/17/08	9/17/08	Passed	
2	9/16/08	H01	9/17/08	9/17/08	Passed	9/17/08	9/17/08	Passed	
2	9/16/08	J02	9/17/08	9/17/08	Passed	9/17/08	9/17/08	Passed	
2	9/16/08	H02	9/17/08	9/17/08	Passed	9/17/08	9/17/08	Passed	
2	9/16/08	G02	9/17/08	9/17/08	Passed	9/17/08	9/17/08	Passed	
2	9/17/08	B02	9/18/08	9/18/08	Passed	9/18/08	9/18/08	Passed	
2	9/17/08	C02	9/18/08	9/18/08	Passed	9/18/08	9/18/08	Passed	
2	9/17/08	D02	9/18/08	9/18/08	Passed	9/18/08	9/18/08	Passed	
2	9/17/08	E02	9/18/08	9/18/08	Passed	9/18/08	9/18/08	Passed	
2	9/17/08	F02	9/18/08	9/18/08	Passed	9/18/08	9/18/08	Passed	
2	9/18/08	A03	9/22/08	9/22/08	Passed	9/22/08	9/22/08	Passed	
2	9/18/08	B03	9/22/08	9/22/08	Passed	9/22/08	9/22/08	Passed	
2	9/18/08	C03	9/22/08	9/22/08	Passed	9/22/08	9/22/08	Passed	
2	9/18/08	D03	9/22/08	9/22/08	Passed	9/22/08	9/22/08	Passed	
1	9/18/08	F06	9/22/08	9/22/08	Passed	9/22/08	9/22/08	Passed	
2	9/22/08	E03	9/23/08	9/23/08	Passed	9/23/08	9/23/08	Passed	
2	9/22/08	F03	9/23/08	9/23/08	Passed	9/23/08	9/23/08	Passed	
2	9/22/08	G03	9/23/08	9/23/08	Passed	9/23/08	9/23/08	Passed	
2	9/22/08	H03	9/23/08	9/23/08	Passed	9/23/08	9/23/08	Passed	
2	9/22/08	K03	9/23/08	9/23/08	Passed	9/23/08	9/23/08	Passed	
1	9/22/08	G06	9/23/08	9/23/08	Passed	9/23/08	9/23/08	Passed	
1	9/22/08	H06	9/23/08	9/23/08	Passed	9/23/08	9/23/08	Passed	
1	9/22/08	J06	9/23/08	9/23/08	Passed	9/23/08	9/23/08	Passed	
1	9/22/08	K06	9/23/08	9/23/08	Passed	9/23/08	9/23/08	Passed	
2	9/23/08	H04	9/24/08	9/24/08	Passed	9/24/08	9/24/08	Passed	
1	9/23/08	H08	9/24/08	9/24/08	Passed	9/24/08	9/24/08	Passed	
1	9/23/08	H09	9/24/08	9/24/08	Passed	9/24/08	9/25/08	Passed	Swamp grid. QC/QA for land area only.
1	9/23/08	H10	9/24/08	9/24/08	Passed	9/24/08	9/25/08	Passed	Swamp grid. QC/QA for land area only.
2	9/23/08	J03	9/24/08	9/24/08	Passed	9/24/08	9/24/08	Passed	
2	9/23/08	J04	9/24/08	9/24/08	Passed	9/24/08	9/24/08	Passed	
1	9/23/08	J08	9/24/08	9/24/08	Passed	9/24/08	9/24/08	Passed	
1	9/23/08	J09	9/24/08	9/24/08	Passed	9/24/08	9/25/08	Passed	Swamp grid. QC/QA for land area only.
2	9/23/08	K04	9/24/08	9/24/08	Passed	9/24/08	9/24/08	Passed	
2	9/23/08	K07	9/24/08	9/24/08	Passed	9/24/08	9/24/08	Passed	
2	9/23/08	K08	9/24/08	9/24/08	Passed	9/24/08	9/24/08	Passed	
2	9/24/08	E04	9/25/08	9/25/08	Passed	9/25/08	9/25/08	Passed	
2	9/24/08	G04	9/25/08	9/25/08	Passed	9/25/08	9/25/08	Passed	
1	9/24/08	G08	9/25/08	9/25/08	Passed	9/25/08	9/25/08	Passed	
1	9/24/08	G09	9/25/08	9/25/08	Passed	9/25/08	9/25/08	Passed	
1	9/24/08	G10	9/25/08	9/25/08	Passed	9/25/08	9/25/08	Passed	
1	9/24/08	H07	9/25/08	9/25/08	Passed	9/25/08	9/25/08	Passed	
1	9/24/08	J07	9/25/08	9/25/08	Passed	9/25/08	9/25/08	Passed	
1	9/25/08	A09	9/25/08	9/25/08	Passed	9/25/08	9/25/08	Passed	
1	9/25/08	B10	9/25/08	9/25/08	Passed	9/25/08	9/25/08	Passed	
1	9/25/08	B09	9/29/08	9/29/08	Passed	9/30/08	10/30/08	Passed	
1	9/25/08	C09	9/29/08	9/29/08	Passed	9/30/08	10/30/08	Passed	
1	9/25/08	C10	9/29/08	9/29/08	Passed	9/30/08	10/30/08	Passed	
1	9/25/08	D09	9/29/08	9/29/08	Passed	9/30/08	10/30/08	Passed	
1	9/25/08	D10	9/29/08	9/29/08	Passed	9/30/08	10/30/08	Passed	
1	9/25/08	E10	9/29/08	9/29/08	Passed	9/30/08	10/30/08	Passed	
1	9/25/08	F08	9/29/08	9/29/08	Passed	9/30/08	10/29/08	Passed	
1	9/25/08	F09	9/29/08	9/29/08	Passed	9/30/08	10/30/08	Passed	
1	9/25/08	F10	9/29/08	9/29/08	Passed	9/30/08	10/30/08	Passed	
1	9/29/08	A07	9/30/08	9/30/08	Passed	10/1/08	10/29/08	Passed	
1	9/29/08	A08	9/30/08	9/30/08	Passed	10/1/08	10/29/08	Passed	
1	9/29/08	B08	9/30/08	9/30/08	Passed	10/1/08	10/29/08	Passed	
1	9/29/08	C08	9/30/08	9/30/08	Passed	10/1/08	10/29/08	Passed	
1	9/29/08	D08	9/30/08	9/30/08	Passed	10/1/08	10/29/08	Passed	
1	9/29/08	E08	9/30/08	9/30/08	Passed	10/1/08	10/29/08	Passed	
1	9/29/08	E09	9/30/08	9/30/08	Passed	10/1/08	10/30/08	Passed	
1	9/30/08	A04	10/1/08	10/1/08	Passed	10/2/08	10/29/08	Passed	
1	9/30/08	A05	10/1/08	10/1/08	Passed	10/2/08	10/29/08	Passed	
1	9/30/08	A06	10/1/08	10/1/08	Passed	10/2/08	10/29/08	Passed	
1	9/30/08	B04	10/1/08	10/1/08	Passed	10/2/08	10/29/08	Passed	
1	9/30/08	B05	10/1/08	10/1/08	Passed	10/2/08	10/29/08	Passed	
1	10/1/08	C04	10/2/08	10/2/08	Passed	10/3/08	10/29/08	Passed	
1	10/1/08	D04	10/2/08	10/2/08	Passed	10/3/08	10/29/08	Passed	
1	10/1/08	H05	10/2/08	10/2/08	Passed	10/3/08	10/31/08	Passed	
1	10/1/08	J05	10/2/08	10/2/08	Passed	10/3/08	10/31/08	Passed	
1	10/1/08	K05	10/2/08	10/2/08	Passed	10/3/08	10/31/08	Passed	
1	10/2/08	B06	10/3/08	10/3/08	Passed	10/7/08	10/29/08	Passed	
1	10/2/08	B07	10/3/08	10/3/08	Passed	10/7/08	10/29/08	Passed	
1	10/2/08	C07	10/3/08	10/3/08	Passed	10/7/08	10/29/08	Passed	
1	10/2/08	D07	10/3/08	10/3/08	Passed	10/7/08	10/29/08	Passed	
78			78	78		78	78		

Working
Failed QC
Completed

EOD TECHNOLOGY, INC.

QA/QC INSPECTION RESULTS

LHAAP, Karnack, TX
Contract Number: W912DY-04-0018 TO#14
MEC Mag & Dig SITE 27

Team #	Date Completed	Grid Number	QC Recv'd	QC Date	Inspection Results	To QA Date	QA Date	Inspection Results	Comments
1	10/9/08	G06	10/10/08	10/10/08	Passed	10/10/08	10/29/08	Passed	
1	10/10/08	G05	10/10/08	10/10/08	Passed	10/10/08	10/29/08	Passed	
1	10/13/08	G04	10/13/08	10/14/08	Passed	10/14/08	10/29/08	Passed	
1	10/14/08	F04	10/15/08	10/20/08	Passed	10/20/08	10/29/08	Passed	
1	10/20/08	C06	10/21/08	10/23/08	Passed	10/24/08	10/29/08	Passed	Culvert identified and marked
1	10/22/08	C05	10/23/08	10/23/08	Passed	10/24/08	10/29/08	Passed	
1	10/30/08	D05	10/30/08	10/30/08	Passed	10/30/08	10/30/08	Passed	
1	11/4/08	D06	11/5/08	11/5/08	Passed	11/6/08	11/6/08	Passed	
1	11/7/08	F06	11/10/08	11/12/08	Passed	11/12/08	11/17/08	Passed/See comments	Potential MEC in pit below 4'
1	11/7/08	E05	11/10/08	11/12/08	Passed	11/12/08	11/13/08	Passed	Backhoe digs cleared
1	11/13/08	E06	11/14/08	11/14/08	Passed	11/14/08	11/17/08	Passed	
1	11/13/08	E07	11/14/08	11/14/08	Passed	11/14/08	11/17/08	Passed	
1	11/17/08	F07	11/18/08	11/18/08	Passed	11/18/08	11/19/08	Passed	
1	11/18/08	G07	11/19/08	11/19/08	Passed	11/19/08	11/19/08	Passed	
1	11/20/08	F05	11/21/08	11/21.08	Passed	11/21/08	11/21/08	Passed	
15			15	14		15	15		

Working
Failed QC
Completed

EOD TECHNOLOGY, INC.

QA/QC INSPECTION RESULTS

LHAAP, Karnack, TX
Contract Number: W912DY-04-0018 TO#14
MEC Surface Clearance SITE 54

Team #	Date Completed	Grid Number	QC Recv'd	QC Date	Inspection Results	To QA Date	QA Date	Inspection Results	Comments
3	8/19/08	G-05	8/19/08	8/21/08	Passed	8/21/08	8/25/08	Passed	
3	8/19/08	G-06	8/19/08	8/21/08	Passed	8/21/08	8/25/08	Passed	
1	8/18/08	H-02	8/19/08	8/21/08	Passed	8/21/08	8/25/08	Passed	
1	8/19/08	H-03	8/19/08	8/21/08	Passed	8/21/08	8/25/08	Passed	
1	8/19/08	H-04	8/19/08	8/21/08	Passed	8/21/08	8/25/08	Passed	
1	8/21/08	H01	8/25/08	8/25/08	Passed	8/25/08	8/26/08	Passed	
1	8/21/08	J01	8/25/08	8/25/08	Passed	8/25/08	8/26/08	Passed	
1	8/21/08	J02	8/25/08	8/25/08	Passed	8/25/08	8/26/08	Passed	
1	8/21/08	J03	8/25/08	8/25/08	Passed	8/25/08	8/26/08	Passed	
1	8/21/08	J04	8/25/08	8/25/08	Passed	8/25/08	8/26/08	Passed	
3	8/21/08	G07	8/25/08	8/26/08	Passed	8/26/08	8/27/08	Passed	
3	8/21/08	G08	8/25/08	8/26/08	Failed				See Line Item # 108 (RE-DO)
3	8/25/08	F09	8/26/08	8/26/08	Passed	8/26/08	8/26/08	Passed	
3	8/25/08	F10	8/26/08	8/26/08	Passed	8/26/08	8/26/08	Passed	
3	8/25/08	F11	8/26/08	8/26/08	Passed	8/26/08	8/26/08	Passed	
3	8/25/08	G10	8/26/08	8/26/08	Passed	8/26/08	8/26/08	Passed	
3	8/25/08	G11	8/26/08	8/26/08	Passed	8/26/08	8/26/08	Passed	
1	8/25/08	K05	8/26/08	8/26/08	Passed	8/27/08	8/27/08	Passed	
1	8/25/08	K06	8/26/08	8/26/08	Passed	8/27/08	8/27/08	Passed	
1	8/25/08	K07	8/26/08	8/26/08	Passed	8/27/08	8/27/08	Passed	
1	8/25/08	K08	8/26/08	8/26/08	Passed	8/27/08	8/27/08	Passed	
1	8/25/08	K09	8/26/08	8/26/08	Passed	8/27/08	8/27/08	Passed	
1	8/25/08	L05	8/26/08	8/26/08	Passed	8/27/08	8/27/08	Passed	
1	8/25/08	L06	8/26/08	8/26/08	Passed	8/27/08	8/27/08	Passed	
1	8/25/08	L07	8/26/08	8/26/08	Passed	8/27/08	8/27/08	Passed	
1	8/25/08	L08	8/26/08	8/26/08	Passed	8/27/08	8/27/08	Passed	
3	8/26/08	E09	8/27/08	8/27/08	Passed	8/27/08	8/28/08	Passed	
3	8/26/08	E10	8/27/08	8/27/08	Passed	8/27/08	8/28/08	Passed	
3	8/26/08	E11	8/27/08	8/27/08	Passed	8/27/08	8/28/08	Passed	
1	8/26/08	J05	8/27/08	8/27/08	Passed	8/27/08	8/28/08	Passed	
1	8/26/08	J06	8/27/08	8/27/08	Passed	8/27/08	8/28/08	Passed	
1	8/26/08	J07	8/27/08	8/27/08	Passed	8/27/08	8/28/08	Passed	
1	8/26/08	K02	8/27/08	8/27/08	Passed	8/27/08	8/28/08	Passed	
1	8/26/08	K03	8/27/08	8/27/08	Passed	8/27/08	8/28/08	Passed	
1	8/26/08	K04	8/27/08	8/27/08	Passed	8/27/08	8/28/08	Passed	
1	8/26/08	L04	8/27/08	8/27/08	Passed	8/27/08	8/28/08	Passed	
3	8/27/08	E08	8/28/08	8/28/08	Passed	8/28/08	8/28/08	Passed	
1	8/27/08	H09	8/28/08	8/28/08	Passed	8/28/08	8/28/08	Passed	
1	8/27/08	H10	8/28/08	8/28/08	Passed	8/28/08	8/28/08	Passed	
1	8/27/08	H11	8/28/08	8/28/08	Passed	8/28/08	8/28/08	Passed	
1	8/27/08	J08	8/28/08	8/28/08	Passed	8/28/08	8/28/08	Passed	
1	8/27/08	J09	8/28/08	8/28/08	Passed	8/28/08	8/28/08	Passed	
1	8/27/08	J10	8/28/08	8/28/08	Passed	8/28/08	8/28/08	Passed	
3	8/28/08	E01	9/3/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
3	8/28/08	E02	9/3/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
3	8/28/08	E03	9/3/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
3	8/28/08	E04	9/3/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
1	8/28/08	H08	9/3/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
3	9/3/08	F01	9/4/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
3	9/3/08	F02	9/4/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
3	9/3/08	F03	9/4/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
3	9/3/08	F04	9/4/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
1	9/3/08	C01	9/4/08	9/8/08	Passed	9/8/08	9/8/08	Passed	
3	9/3/08	G02	9/4/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
3	9/3/08	G03	9/4/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
3	9/3/08	G04	9/4/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
1	9/3/08	H05	9/4/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
1	9/3/08	H06	9/4/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
1	9/3/08	H07	9/4/08	9/4/08	Passed	9/4/08	9/4/08	Passed	
1	9/4/08	B02	9/5/08	9/5/08	Passed	9/5/08	9/5/08	Passed	
1	9/4/08	B03	9/5/08	9/5/08	Passed	9/5/08	9/5/08	Passed	
1	9/4/08	B04	9/5/08	9/5/08	Passed	9/5/08	9/5/08	Passed	
1	9/4/08	B05	9/5/08	9/5/08	Passed	9/5/08	9/5/08	Passed	
3	9/4/08	D01	9/5/08	9/5/08	Passed	9/5/08	9/5/08	Passed	
3	9/4/08	D02	9/5/08	9/5/08	Passed	9/5/08	9/5/08	Passed	
3	9/4/08	D08	9/5/08	9/5/08	Failed				Located 5 slap flares during QC.
3	9/4/08	D09	9/5/08	9/5/08	Passed	9/5/08	9/5/08	Passed	
3	9/4/08	D10	9/5/08	9/5/08	Passed	9/5/08	9/5/08	Passed	
3	9/4/08	D11	9/5/08	9/5/08	Passed	9/5/08	9/5/08	Passed	
3	9/4/08	G01	9/5/08	9/5/08	Passed	9/5/08	9/5/08	Passed	
1	9/5/08	A09	9/8/08	9/8/08	Passed	9/8/08	9/8/08	Passed	
1	9/5/08	B06	9/8/08	9/8/08	Passed	9/8/08	9/8/08	Passed	
1	9/5/08	B07	9/8/08	9/8/08	Passed	9/8/08	9/8/08	Passed	
1	9/5/08	B08	9/8/08	9/8/08	Passed	9/8/08	9/8/08	Passed	
1	9/5/08	B09	9/8/08	9/8/08	Passed	9/8/08	9/8/08	Passed	
1	9/5/08	B10	9/8/08	9/8/08	Passed	9/8/08	9/8/08	Passed	
3	9/5/08	D03	9/8/08	9/8/08	Passed	9/8/08	9/8/08	Passed	
3	9/5/08	D04	9/8/08	9/8/08	Passed	9/8/08	9/8/08	Passed	
3	9/5/08	D05	9/8/08	9/8/08	Passed	9/8/08	9/8/08	Passed	
1	9/8/08	A03	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
1	9/8/08	A04	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
1	9/8/08	A05	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
1	9/8/08	A06	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
1	9/8/08	A07	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
1	9/8/08	A08	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
3	9/8/08	C02	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
3	9/8/08	C03	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	

3	9/8/08	C04	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
3	9/8/08	C05	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
3	9/8/08	C06	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
3	9/8/08	C07	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
1	9/8/08	C10	9/9/08	9/9/08	Passed	9/9/08	9/9/08	Passed	
1	9/9/08	C08	9/10/08	9/10/08	Passed	9/10/08	9/10/08	Passed	
1	9/9/08	C09	9/10/08	9/10/08	Passed	9/10/08	9/10/08	Passed	
3	9/9/08	D07	9/10/08	9/10/08	Passed	9/10/08	9/10/08	Passed	
1	9/9/08	D08	9/10/08	9/10/08	Passed	9/10/08	9/10/08	Passed	RE-DO FROM PREVIOUS FAILURE
3	9/10/08	D06	9/11/08	9/11/08	Passed	9/11/08	9/11/08	Passed	
1	9/10/08	G09	9/11/08	9/11/08	Passed	9/11/08	9/11/08	Passed	
1	9/11/08	G08	9/15/08	9/15/08	Passed	9/16/08	9/16/08	Passed	RE-DO FROM PREVIOUS FAILURE
3	9/15/08	E06	9/16/08	9/16/08	Passed	9/16/08	9/16/08	Passed	
1	9/15/08	F05	9/16/08	9/16/08	Passed	9/16/08	9/16/08	Passed	
1	9/15/08	F06	9/16/08	9/16/08	Passed	9/16/08	9/16/08	Passed	
1	9/15/08	F07	9/16/08	9/16/08	Passed	9/16/08	9/16/08	Passed	
1	9/16/08	E05	9/17/08	9/17/08	Passed	9/17/08	9/17/08	Passed	
1	9/16/08	E07	9/17/08	9/17/08	Passed	9/17/08	9/17/08	Passed	
1	9/18/08	F08	9/18/08	9/18/08	Passed	9/18/08	9/18/08	Passed	Final grid in S54
106			106	106		104	104		

Working
Failed QC
Completed

APPENDIX G
SAFETY DOCUMENTS

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

EODT UXO Safety Officer Daily Log
MEC Removal Action, Former LHAAP Karnack, Texas

Date	Time	Event
08/04/08		Safety brief and indoctrination training on all personnel conducted. Prep checklist briefed to survey and brush cutting team. Arrived at site and conducted site tour with all EODT employees and sub-contractors. Discussed all ingress and egress routes, possible emergency fallout locations, location for site trailer and equipment conex. Brush cutting and survey ops began. Conex arrive. Inventory gear and equipment. Inspect brush cutting and survey team for proper use of PPE and safe work practices. Ensuring that UXO escort are performing hand held detection aided sweeps. Inventoried and inspected safety equipment for shortages.
080508		Safety brief. Weather, poison ivy removal procedures. Communication issues addressed, using company cell phones as primary until repeater is up for radios. Discussed access control, evacuation shelters, and gathered emergency contact information. Visited Marshall Regional Medical Center to make liaison with staff and determined procedures in case of an emergency. Conduct initial inspection on survey crew no discrepancies noted.
080608		Safety brief discussed weather, lighting procedures and PPE requirements. Office trailer and electrician arrived. Setup trailer. Conduct initial inspection of brush cutting crew. No discrepancies noted. Pick up and inspected rental vehicle.
080708		Safety brief. Discussed weather, vehicle safety, slip, trips and fall and hydration. Conduct final inspection on survey crew, no discrepancies noted. Look over HAZCOM, PPE, Sexual Harassment, and Ethics standards to discuss on Monday.
080808		Safety brief. Discussed weather, brush cutting checklist. Conducted Final Inspected of brush cutting crew, no discrepancies noted. No other teams working. Read more SOP's and WP.
081108		Safety Brief: Discussed weather, vehicle safety, slip, trips and fall and hydration. The remainder of EODT and First choice personnel arrived on site. Started initial site training.
081208		Safety brief. Weather, Work stoppage of sweep personnel at 0800 due to severe lighting and flooding. Reviewed NFPA 780 for lightning requirements to the explosive magazine. Reviewed heat stress SOP and AHA on Utility Vehicles. Inspected brush and survey teams, no discrepancies noted.

EODT UXO Safety Officer Daily Log
MEC Removal Action, Former LHAAP Karnack, Texas

Date	Time	Event
081308		Safety Brief: topics covered temp low 61, high 91 sunny, slip, trips, and falls, heat symptoms and hydration prevention, 81mm illumination mortar. Briefed motor vehicle operations and utility vehicle operation IAW SOP 122. Issue safety equipment: gloves and glasses. Personnel are identified who have CPR qualifications and copies of their Red Cross Cards are on file. Graig Electrical Services inspected and certified that the ground rod, bonding strap, and bonding strap to rod meet the requirements for lightning protection on the explosive magazine IAW NFPA 780. Observed brush cutting and surveying operations for the wearing of proper PPE and that they are following safe work practice. All fire extinguishers that were shipped for vehicle operations are type 5BC and are required to 10ABC. SUXOS has been notified and has contacted logistics to supply us with the proper fire extinguisher. In the interim we will use 5BC in order to have a fire fighting capability.
081408		Safety Brief: topics covered temp low 71, high 95 sunny, slip, trips, and falls, heat symptoms and hydration prevention, 81mm illumination mortar. Vehicle operating rules and utility vehicle safety requirements. Inspected team vehicles sheets and found the Ford F-150 Lariat rear seat belts in-op (rear center seat and passenger rear). It will go into the shop on Friday for repair. This is a safety issue and if it cannot be fixed this weekend this vehicle will be swapped for the Dodge Ram rental for team use until the Ford is fixed. Fire extinguisher installed on utility vehicles. Team leaders and one team member have been shown the route to the hospital. A vehicle folder that contains insurance forms, hospital route, emergency numbers, team rosters, motor vehicle and utility vehicle operating has been given to each team leader and will be placed in each vehicle. Inspected sweep, brush, and survey teams for proper PPE use.
081808		At approx 0540 an EODT vehicle was involved in a accident. The accident took place at the intersection of Hwy 134 and Kay Street between the F-150 and a Jeep Rubicon. Kevin Klein of EODT and Mr. Gerald Therrell of Waskom TX. (the driver of the Jeep) were taken to the Marshall Regional Medical Center at approx 0615 by ambulance, arriving at 0650. Contacted Corporate Safety at approx 0621 left message with Ron Madden at this time. The UXOSO Robert Thomas left the scene at 0630. Matt Abbott and William Jones were transported a short time later also by ambulance. William Czech was transport by the SUXOS Mick Doak. Arrived at Medical Center at 0701 and contacted Ron Madden at this time also. Second ambulance arrived at 0712. The SUXOS and William

EODT UXO Safety Officer Daily Log
MEC Removal Action, Former LHAAP Karnack, Texas

Date	Time	Event
		Czech arrived at 0800. All personnel involved had chest x-rays and CRT scans taken. A blood drug and alcohol screening was done on William Czech. Injuries range from stiff shoulders to fractured ribs. All the detailed information is on the accident report. All personnel are back to work at 1300. This incident has met our emergency response training.
081908		Safety Brief Topics: Weather, Slip, trips & falls, Level D PPE, HAZCOM, Poison Ivy, Exclusion Zone, and MGFD. Matt Abbott, and William Jones were asked today how they are feeling today, both complained of soreness in their injured areas, but nothing major.
082008		Safety Briefing Topics: Slip, trips & falls, Level D PPE, HAZCOM, Work Plan, Cell Phone Use in the Grid. Sweep and brush teams inspected and all are performing operations IAW the WP. Matt Abbott, Kevin Kline, and William Jones were asked today how they are feeling today, both complained of soreness in their injured areas, but nothing major.
082108		Safety brief topics: Weather, slip trip and falls, vehicle inspections. DaJuan Woolen did not report to work today due to a family emergency. Sweep and brush teams inspected and all are performing operations IAW the WP. Vehicle Inspections conducted discrepancies noted are as follows: Ford F-150/TX-2353, Windshield Crack. Corrective Action: Notified Enterprise Rental Car to set up time and place to repair crack. Matt Abbott, Kevin Kline, and William Jones were asked today how they are feeling today, all complained of soreness in their injured areas, but nothing major.
082208		At approx 1800 Charlie Overstreet informed me that he has a reaction to ivy on his face, arms, hands, and groin. I have instructed him to go to the ER and be seen. Eugene Mikell has also been notified at corporate. At approx 1930 Charlie Overstreet was released from the ER after being given a cortisone shot and a prescription for topical lotion and Atarax for itching.
082508		Safety Brief Topics: Weather, Slip, trips and falls, Seat belt use, and poison ivy prevention. Observed sweep teams and brush teams. All personnel following approved practices. Snake observed in Grid S54-G09, possible cottonmouth. Team moved to another grid to conduct ops. Also advised team members to wear snake chaps to prevent possible bites. Eduardo Franco informed me that he was

EODT UXO Safety Officer Daily Log
MEC Removal Action, Former LHAAP Karnack, Texas

Date	Time	Event
		bitten by a spider on the neck. He was told to keep an eye on it and if complications developed to inform me. Matt Abbott, Billy Czech, Kevin Kline, and William Jones were asked today how they are feeling today, all said they are fine. Billy Czech is pretty sore, but is doing fine.
082608		Safety brief topics included weather, insects, fall hazards, and hazards associated with the MJU 7 fuze. Eduardo Franco spider bite shows no adverse affects. Matt Abbott, Billy Czech, Kevin Kline, and William Jones were asked today how they are feeling today, all said they are fine. Billy Czech is still pretty sore, but is doing fine.
082708		Met with Eugene Mikell for two days of SSHO training. Topics covered are: Corporate Structure, Policies and procedures, Crisis Management, Field change request, Accident reporting time requirements, Email report format, Accident Investigation Role and procedures, Ethics, Conduct and Behavior as a field manager, Safety Standards, Upcoming changes to EODT training, SOP 127. Jonathan McCarty complained of feeling nauseous. Chuck Overstreet sat him in the truck with the AC on and gave him water to drink and elevated his feet. Checked skin color, (not pale or flushed, clammy, moist or profuse perspiration) and temperature for signs of heat exhaustion. Asked questions to determine state of consciousness. This has been observed and meets our requirement for emergency response training.
082808		Met with Eugene Mikell to receive more SSHO training. Topics conducted are: Scope of Work, WP, CESHP, SOPS, AHA, EM-385-1-1, EODT Forms, 40HR AND 8HR Familiarization, 8 HR supervisor training, 10 HR Construction Safety, and Technical reference. Site visit was also provided. Vehicle Inspections conducted discrepancies noted are as follows: Ford F-150/TX-2353, Windshield Crack. Corrective Action: Notified Enterprise Rental Car to set up time and place to repair crack. Ford Expedition/TN-O-5579, Expired Registration. Corrective Action: Notified corporate logistics to send updated registration. Billy Czech, Kevin Kline, and William Jones were asked today how they are feeling today, all said they are fine. Billy Czech say's he is

EODT UXO Safety Officer Daily Log
MEC Removal Action, Former LHAAP Karnack, Texas

Date	Time	Event
		doing fine.
090308		Safety brief topics included fall hazards, weather hazards, cell phone use in the grid, driving conditions associated with hurricane Gustov. More snakes observed in the grids. Team Leaders took appropriate actions. Observed sweep teams conducting operations, no discrepancies noted. Reviewed SOP 120. Reviewed RFD procedures. Melinda Carr of First choice Personnel departed the grid at 1600 for personal reasons.
090408		Safety brief topics: Weather, slip, trips, and falls, and EODT Smoking Policy. Teams conducting operation in a safe manner. Snakes are still being observed and team leaders are working the situation appropriately. DaJuan Woolen departed the site for performance reason at 1230.

EODT UXO Safety Officer Daily Log
MEC Removal Action, Former LHAAP Karnack, Texas

Date	Time	Event
090508		Safety brief topics: Weather, slip trips falls, hydration, vehicle inspection checklist. Vehicle Inspections conducted discrepancies noted and corrective action taken are as follows: Ford F-150/TX-2353, Windshield Crack. Corrective Action: Notified Enterprise Rental Car to set up time and place to repair crack. Ford F-150/TN-oh15578, Tachometer and odometer intermittent operation. Corrective Action: Notify corporate logistics of the discrepancy. This is not a safety issue but does need to be noted and corrected. Demo conducted. Items destroyed 1 4.2 Illumination Mortar 2 40mm Illumination Signal Flare 1 155mm Candle Mix
090808		Safety brief topics: Weather, slip, trips, and falls, hydration, and snake protection. On 09/08/08 Matthew Abbott arrived at work complaining of pain to his right side. The pain that he described as having is noticeable when he twists, bends, or is lying down and is so intense that it "puts him to the ground". During the previous three weeks after the accident I asked Matthew Abbott if he was in any pain and how are you feeling. The first 2-3 days he said he had some soreness but nothing serious. After the first 2-3 days he said everything was fine. At approx 0800 I took Matthew Abbott to Marshall Regional Occupational Medicine. He was seen by Dr. Noel and was diagnosed with low back pain and muscle spasm. Matthew Abbott was informed by Dr. Noel that he can return to work today, 09/08/08 with the restrictions of zero hrs of bending/stooping and may not lift/carry objects more than 20 lbs. Matthew Abbott has returned to his hotel room. Matthew Abbott was also prescribed Mobic 15mg for pain and Tramadol 50mg for pain as needed. He has a follow-up appointment on 09/12/08 at 0830 at Marshall Regional Occupational Medicine. All personnel involved in the accident have been brief to contact their claim advisor to get guidance on any complication that may be a result of the accident on 081808. Leotis Webb and Derrick Black departed at 1630 fro personal reasons.
090908		Safety Brief Topics: Weather, slip, trips, and falls, hydration, and EODT Safety policy. Matthew Abbott returned to work today and

EODT UXO Safety Officer Daily Log
MEC Removal Action, Former LHAAP Karnack, Texas

Date	Time	Event
		has informed me that he feels much better today. Inspected scrap returned from the grid. All scrap found to be free of explosive residue. Jason Kidd in logistics informed me that Camelbacks will arrive on 091008 and additional snake leggings will arrive on 091108. Magazine area inspected and found to be in compliance with BATF and the Department of Defense (DoD) requirements that all magazines be appropriately posted to indicate the hazard class of the contents, the fire fighting hazards, and the emergency notification list. Brush and sweep team were observed performing work IAW the WP.
091008		Safety Brief Topics: Weather, slip, trip, and falls, communication procedures, egress/ingress procedures. Matthew Abbott said he is a little sore his meds has not kicked in yet. I asked later in the day and he said he feels okay. Survey crew is back on deck, re-briefed on procedures and an escort is assigned. Observed survey crew and work is IAW WP. Area 27 has an area that is a swamp. The depth of the water is approx 2 feet. This area is probably not going to dry out, especially with the threat of heavy rain. Jathan Futal will get an estimate of the number of grids that it entails. My recommendation is to not send any personnel in that area to brush cut or sweep because of the heavy concentration of cottonmouth in the area. Corps Safety also agrees with my recommendation and will address this from his end.
091108		Safety Brief: Weather, slips, trips, and falls. Hydration, firearms, personal property, M127 Illumination Signal. Vehicle Inspections conducted. Fire extinguishers inspected. Area 27 swamp area viewed again today. Same recommendation. One utility vehicle is down due to flat tire. Called RCS to get a replacement. There are no tires in the area so they will provide one by Tuesday. Inspected teams on their knowledge to find emergency first aid equipment. The individuals picked knew exactly wear to go to get the requested items.
091508		Safety Brief: Weather, slips, trips, and falls. hydration, EEO Policy. Inspected the route into area 27 and found them to be impassable at this time because of fallen trees blocking the road due to Hurricane Ike. Brush crew will cut tomorrow when they arrive. Observed teams in area 54 following safe work practices. Asked many personnel who are our first aid certified individuals. Everyone asked could name at least one. Everyone was informed at the end of the day who all our first aid certified personnel are. Contacted RCS today about ROPS on the utility vehicles even though I have been given guidance by corporate safety on this matter the wheels

EODT UXO Safety Officer Daily Log
MEC Removal Action, Former LHAAP Karnack, Texas

Date	Time	Event
		were already turning on this. Rosie at RCS will give us a replacement utility vehicle with ROPS for the one with the flat tire.
091608		Safety Brief: Weather, slips, trips, and falls. Hydration, fire prevention refueling procedures.
091708		Safety Brief: weather, slip, trips, falls, hydration, ignition sources.
091808		Safety Brief: Weather, slips, trips, falls, hydration, snakes, fire fighting procedures, vehicle inspections. Demo ops conducted in area 54. Ordnance Items Destroyed: M583A1 40 mm (2 each) M206 Flare (1 each) M127 Flare (4 each) Flare candles (2 each) Demo Materials Destroyed: Det Cord (10') Perforators (1 each) Booster (4 each) NONEL Cap (1 each) NONEL Lead Line (25') Trae Brown from 1st Choice Personnel visits the site for lunch and site visit.
092208		Safety Brief: weather, slip, trip, fall, hydration, snakes and snake protection. Vera Geisleman departs site at 0700 due to stomach flu like symptoms. Kevin Klein departs at 0930 due to flu like symptoms he has been fighting for 4 days. There is a flu like virus going around and people are starting to get sick. Precautionary measures to reduce the spread of the virus will be discussed tomorrow and at the end of the day today.
092308		Safety Brief: weather, hygiene and sanitation. Collins Surveyors on site to complete surveying of LUC signs. The flu bug continues to strike; Clinton Anderson, Oswald Gooch absent. Kristy Geisleman and Jason Birchfield depart after 2 hours on site. Mallory Miller departs at 1500 for doctors appointment. Continue to stress importance of washing hands during every break and/or at every opportunity to prevent spreading of virus.

EODT UXO Safety Officer Daily Log
MEC Removal Action, Former LHAAP Karnack, Texas

Date	Time	Event
092408		Safety Brief: weather and poison ivy protection. Anita Thomas, Jason Birchfield and Melinda Carr absent due to illness. Kristy Geiselman departs after 4 hours on site due to illness. Initial loads of scrap depart the site. UXOQC escorting scrap trucks and providing oversight of accountability. Observing crews in the field.
092508		Safety Brief: weather and vehicle inspections. All but three local hires showed. Crew combined into one surface sweep team working in S27. Jason Birchfield and Anita Thomas depart after 4 hours on site. Final demolition operations conducted in Area 54. See demolition Shot Record for this day. My last day. UXOSO position will be consolidated with UXOQC and maintained by Tom Hinote. Last entry this log.

EODT UXO Safety Officer Daily Log
MEC Removal Action, Former LHAAP Karnack, Texas

Date	Time	Event

00099465

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG
FOR OE OPERATIONS

DATE: 092908	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 56 HIGH 83, Sunny and Clear		

I. AREAS INSPECTED: (List by grid number, Team or task) Team 1, Surface Clearance in S27
Note: First day as on site UXOSO (position combined with duties as UXOQC starting today)

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) INSPECTION SHEETS	Y / N
8. Monitoring Equipment Calibration	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Thomas Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099466

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR OE OPERATIONS

DATE: 100608	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 71 HIGH 85, partly cloudy		

I. AREAS INSPECTED: (List by grid number, Team or task) .Intrusive operations and new hire check-in

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) INSPECTION SHEETS	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Thomas Hinote
Site Safety and Health Officer

Mick Doak
Sr. UXO Supervisor / Project Manager

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00099467

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR OE OPERATIONS

DATE: 100708	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 71 HIGH 79, partly cloudy w/ some rain in the AM and clearing in the PM.		

I. AREAS INSPECTED: (List by grid number, Team or task) Commenced EODT QC Audit, conducted by Eugene Mikell.

Team 1 continues mag and dig ops in grid S27-F06, in the OB/OD Area.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) INSPECTION SHEETS	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required) _____

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Thomas Hinote _____ Site Safety and Health Officer

Mick Doak _____ Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099469

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR OE OPERATIONS

DATE: 100808	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 51 HIGH 79, clear and mild.		

I. AREAS INSPECTED: (List by grid number, Team or task) Continued EODT QC Audit

Team 1 commences mag and dig ops in grid S27-G06, in the OB/OD Area.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) INSPECTION SHEETS	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Thomas Hinote
Site Safety and Health Officer

Mick Doak
Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG
FOR OE OPERATIONS

DATE: 100908	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 45 HIGH 79, clear and mild.		

I. AREAS INSPECTED: (List by grid number, Team or task) Finalized EODT QC Audit.

Team 1 continues mag and dig ops in grid S27-G05, in the OB/OD Area.
Conducted detailed briefing at morning safety meeting on Biological Hazard Precautions. All hands signed forms acknowledging confirmation of EODT poison ivy field preventative measures.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) INSPECTION SHEETS	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Thomas Hinote
Site Safety and Health Officer

Mick Doak
Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099473

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG
FOR OE OPERATIONS

DATE: 101008	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 54 HIGH 82, clear and mild.

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continues mag and dig ops in grid S27-G05 & G04, in the OB/OD Area.
Conducted demolition operations.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) INSPECTION SHEETS	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Thomas Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

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00099474

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 101308	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 60 HIGH 85, clear and mild.

I. AREAS INSPECTED: (List by grid number, Team or task) .

Team 1 continues mag and dig ops in grid S27-G04 & F04, in the OB/OD Area.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) INSPECTION SHEETS	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Eugene Mikell — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099475

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 101408	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 61 HIGH 81, clear in the am, afternoon scattered Thunderstorms.

I. AREAS INSPECTED: (List by grid number, Team or task) .

Team 1 continues mag and dig ops in grid S27-F04 & C06, in the OB/OD Area.

QC Grid S27-G04

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) INSPECTION SHEETS	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Eugene Mikell — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099476

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 101508	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 67 HIGH 77, cloudy in the am, afternoon scattered Thunderstorms with rain . throughout the afternoon.

I. AREAS INSPECTED: (List by grid number, Team or task) .
Team 1 continues mag and dig ops in grid S27- C06, in the OB/OD Area.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) INSPECTION SHEETS	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Eugene Mikell — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099477

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 101608	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 52 HIGH 64, Cloudy

I. AREAS INSPECTED: (List by grid number, Team or task) .

Team 1 continues mag and dig ops in grid S27- C06, in the OB/OD Area.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Eugene Mikell — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099478

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 101708	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 50 HIGH 73, Cloudy

I. AREAS INSPECTED: (List by grid number, Team or task) .

Team 1 continues mag and dig ops in grid S27- C06, in the OB/OD Area.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Eugene Mikell — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099479

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 102008	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 46 HIGH 78, Clear and mild

I. AREAS INSPECTED: (List by grid number, Team or task) .

Team 1 completed mag and dig ops in grid S27- C06, and started in grid C05, in the OB/OD Area.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099480

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 102108	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 49 HIGH 78, Clear and mild		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continues mag and dig ops in grid S27- C05, in the OB/OD Area. Crew continues effective bio-hazard precautions.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote _____ Site Safety and Health Officer

Mick Doak _____ Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099482

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG
FOR MEC OPERATIONS

DATE: 102208	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 49 HIGH 76, Clear in AM and partly cloudy in the PM.		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 completed mag and dig ops in grid S27- C05, and commenced ops in D-05. Crew continues effective bio-hazard precautions and procedures.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote _____ Site Safety and Health Officer

Mick Doak _____ Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG
FOR MEC OPERATIONS

DATE: 102308	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 46 HIGH 62, Clear and mild.		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continued dig ops in grid S27- D05. Crew continues effective bio-hazard precautions and procedures.
Grid D-05 is highly saturated and littered with blow-holes.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote _____ Site Safety and Health Officer

Mick Doak _____ Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099486

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 102408	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 40 HIGH 67, Clear and mild.		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continued dig ops in grid S27- D05. Crew continues effective bio-hazard precautions and procedures.
Grid D-05 is highly saturated and littered with blow-holes. Conducted demolition operations in the afternoon.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote _____ Site Safety and Health Officer

Mick Doak _____ Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099488

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 102708	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 44 HIGH 61, Clear and mild.

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continued dig ops in grid S27- D05. Crew continues effective bio-hazard precautions and procedures. Grid D-05 is highly saturated and littered with blow-holes. USACE UXO Safety representative reports aboard. Two new hires report aboard and briefed on site safety and required indoctrination.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list)	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted

during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099490

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 102808	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 28 HIGH 57, Clear and mild.		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continued dig ops in grid S27- D05. Briefed crew on updated bio-hazard precautions and procedures.
Assisted USACE rep with initial QA of grids completed in the OB/OD area (all passed QA).

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health

00099492

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 102908	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 37 HIGH 63, Clear and mild.		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continues dig ops in grid S27- D05. Steve Voland and Ron Madden on site to observe ops and brief crew.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099493

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 103008	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 37 HIGH 73, Clear and mild.		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 completed dig ops in grid S27- D05. Commenced ops in D-06.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099494

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 103108	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 48 HIGH 77, Clear and mild.		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continued ops in D-06 and completed the wetlands area (swamp area) surface sweep.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099495

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 110308	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 48 HIGH 78, Clear and mild.		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continued ops in D-06.Installed eleven (11) LUC signs in S27.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099496

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 110408	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 42 HIGH 79, Clear and mild.

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 completed ops in D-06 and shifted ops to E-05. Installed 16 LUC signs in S27. Reminded personnel of the policy to continue with seat belt use at any time the vehicle is moving, regardless of travel distance. All in compliance.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health

00099498

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 110508	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 68 HIGH 75, Rain & thunderstorms in the AM, Partly Cloudy in PM		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continued ops in D-06. Installed 22 LUC signs in S54. Detailed discussions regarding excavator operations.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099499

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 110608	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 42 HIGH 72, Clear and mild.

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 completed ops in D-06 and shifted ops to E-05. Installed 16 LUC signs in S27. Reminded personnel of the policy to continue with seat belt use at any time the vehicle is moving, regardless of travel distance. All in compliance.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health

00099501

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 110708	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 39 HIGH 72, Clear and mild.		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 completed ops in D-06 and shifted ops to E-06. Conducted demolition ops in the afrternoon.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099502

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 111008	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 45 HIGH 55, Scattered rain throughout the day.

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continued ops in E-06. Continued backhoe digs in F06. Placed 22 additional signs in S54. Collins Survey surveyed-in OB/OD area.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health

00099504

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 111208	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 45 HIGH 60, Scattered rain in the AM and clearing skies in the PM

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continued ops in E-06. Many parts of the WZ are underwater as a result of yesterday and today's rain.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

00099505

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 111308	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 45 HIGH 63 heavy fog in the AM and partly cloudy skies in PM.

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 completed mag and digs ops in E-06 and E07. Installation of the LUC signs at Site 54 completed. All LUC signs have been placed and a final inspection was conducted.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health

00099507

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 111408	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 53 HIGH 69 heavy fog in the AM and partly cloudy skies in PM.

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 completed mag and digs ops in E-06 and E07. Installation of the LUC signs at Site 54 completed. All LUC signs have been placed and a final inspection was conducted.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health

00099509

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 111708	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		

WEATHER CONDITIONS: LOW 33 HIGH 72 clear and mild

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 completed mag and digs ops in F07 and shifted ops to G07. Bio-hazards precautions inspected and found sufficient.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health

00099511

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 111808	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 41 HIGH 54 clear and mild		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 completed mag and digs ops in G07 and shifted ops to F05. Bio-hazards precautions inspected and found sufficient.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

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00099513

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 111908	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 31 HIGH 67 clear and mild		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 continued mag and digs ops in G07. Yasir Abdulrahman was stung (5 times) by ground bees during intrusive investigations. First aid administered by Pat Milling (EMT/UXOT1) and member returned to work.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health

00099515

EODT DAILY INSPECTION AND WEEKLY AUDIT LOG

FOR MEC OPERATIONS

DATE: 112008	**TIME: 1630**	**LOG NO.:**
CONTRACT NO.: W912DY-04-0018	**TASK ORDER NO.: 0014**	
SITE NAME AND LOCATION: LHAAP Removal Action / Karnack, TX		
WEATHER CONDITIONS: LOW 41 HIGH 67 clear and mild		

I. AREAS INSPECTED: (List by grid number, Team or task)

Team 1 completed mag and digs ops in G07.

II. INSPECTION RESULTS

Item Description	Pass	Item Description	Pass
1. Personal Protection (PPE) per SSHP	Y / N	9. UXO/OE Detection Equipment	Y / N
2. Work Practices Follow SSHP/WP	Y / N	10. UXO/OE Detection Equipment Calibration	Y / N
3. Site Control/Decon per SSHP	Y / N	11. MSDSs and Container Labeling per SSHP N/A	Y / N
4. First Aid Kit(s)/Eyewash Station(s)	Y / N	12. On- and Off-Site Communications	Y / N
5. Fire Extinguisher(s)	Y / N	13. Site House Keeping	Y / N
6. Flammable Storage Areas N/A	Y / N	14. Explosives / Ordnance Storage Areas	Y / N
7. Safety and Health Monitoring Equipment Use	Y / N	15. Other: (list) Seatbelts	Y / N
8. Monitoring Equipment Calibration N/A	Y / N	16. Other: (list) Bio-hazard Prevention	Y / N

III. SUMMARY OF DEFICIENCIES NOTED: (If Required) **None**

IV. CORRECTIVE ACTIONS RECOMMENDED: (If required)

V. REINSPECTION RESULTS: (If required)

VI. SIGNATURES:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary)

Tom Hinote — Site Safety and Health Officer

Mick Doak — Sr. UXO Supervisor / Project Manager

Note: Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site/site operations, but will also be used to note the current status of deficiencies noted during daily inspections. Any daily inspection forms where deficiencies have been noted, and the weekly audit will be faxed to the EODT Occupational Safety and Health Manager.

APPENDIX H
DEMOLITION SHOT RECORDS

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

00099517

EODT DEMOLITION SHOT RECORD

Site Name/Location: Longhorn Army Ammunition Plant, Karnack, TX		Date: 11/21/08
Shot Location (OB/OD Range or Grid No.): Site 27 / Grid F-06	Demolition Supervisor: Mick Doak	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned (24 ea) M112 Flares, de-milled (1) 155mm (empty) illumination round. First shot to dispose/de-mill; second shot to expend remaining explosives.	Firing Method: RFD / NONEL	Time of Shot: Two (2) shots (1)1055 & (2) 1145
Direction and Distance to Nearest Building, Road, Utility Line, etc.: 1.5 MILES	Temp: 41f Wind Dir./Speed: NW/10 mph Ceiling: Unlimited Clouds/% Sun: 70%	
Type and Amount of Tamping Used: N/A	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No X☐	Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator	35	Time Fuze	0
Det Cord	375FT	Squibs	0
Boosters	32	Black / Smokeless Powder	0
Non-El Shock Tube	2000Ft	Two Component	
Non-El Detonator	15 ea	Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: M Doak Date: 11/21/08

Site Name/Location:		Date:
Shot Location (OB/OD Range or Grid No.):	Demolition Supervisor:	State License # (if applicable):
Type of UXO/OE Destroyed, Vented or Burned:	Firing Method:	Time of Shot:
Direction and Distance to Nearest Building, Road, Utility Line, etc.:	Temp: _____ Wind Dir./Speed: _____ Ceiling: _____ Clouds/% Sun: _____	
Type and Amount of Tamping Used:	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No ☐	Readings / Results:	

NOT USED

Demolition Materials Used

Description	Amount	Description	Amount
Perforator		Time Fuze	
Det Cord		Squibs	
Electric Detonator		Black / Smokeless Powder	
Non-electric Detonator		Two Component	
Non-El Detonator		Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: Date:

00099518

EODT DEMOLITION SHOT RECORD

Site Name/Location: Longhorn Army Ammunition Plant, Karnack, TX		Date: 11/14/08
Shot Location (OB/OD Range or Grid No.): Site 27 / Grid E-05	Demolition Supervisor: Chuck Overstreet	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned (36 ea) M112 Flares, de-milled (13) 155mm (empty) illumination rounds	Firing Method: RFD / NONEL	Time of Shot: 1555
Direction and Distance to Nearest Building, Road, Utility Line, etc.: 1.5 MILES	Temp: 67f Wind Dir./Speed: NW/10 mph Ceiling: Unlimited Clouds/% Sun: 70%	
Type and Amount of Tamping Used: N/A	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No X☐	Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator	13	Time Fuze	0
Det Cord	30FT	Squibs	0
Boosters	20	Black / Smokeless Powder	0
Non-El Shock Tube	100Ft	Two Component	
Non-El Detonator	2 ea	Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: Chuck Ott Date: 11/14/08

Site Name/Location:		Date:
Shot Location (OB/OD Range or Grid No.):	Demolition Supervisor:	State License # (if applicable):
Type of UXO/OE Destroyed, Vented or Burned:	Firing Method:	Time of Shot:
Direction and Distance to Nearest Building, Road, Utility Line, etc.:	Temp: _____ Wind Dir./Speed: _____ Ceiling: _____ Clouds/% Sun: _____	
Type and Amount of Tamping Used:	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No ☐	Readings / Results:	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator		Time Fuze	
Det Cord		Squibs	
Electric Detonator		Black / Smokeless Powder	
Non-electric Detonator		Two Component	
Non-El Detonator		Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: _____ Date: _____

NOT USED

EODT DEMOLITION SHOT RECORD

Site Name/Location: Longhorn Army Ammunition Plant, Karnack, TX		Date: 11/07/08
Shot Location (OB/OD Range or Grid No.): Site 27 / Grid E-05	Demolition Supervisor: Chuck Overstreet	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned (50 ea) M112 Flares, (1ea) M62 Flares,	Firing Method: RFD / NONEL	Time of Shot: 1600
Direction and Distance to Nearest Building, Road, Utility Line, etc.: 1.5 MILES	Temp: 64f Wind Dir./Speed: NW/10 mph Ceiling: Unlimited Clouds/% Sun: 100%	
Type and Amount of Tamping Used: N/A	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No X☐	Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator	0	Time Fuze	0
Det Cord	15FT	Squibs	0
Boosters	20	Black / Smokeless Powder	0
Non-El Shock Tube	50Ft	Two Component	
Non-El Detonator	1 ea	Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: Charlie Dirt Date: 11/07/08

Site Name/Location:		Date:
Shot Location (OB/OD Range or Grid No.):	Demolition Supervisor:	State License # (if applicable):
Type of UXO/OE Destroyed, Vented or Burned:	Firing Method:	Time of Shot:
Direction and Distance to Nearest Building, Road, Utility Line, etc.:	Temp: _____ Wind Dir./Speed: _____ Ceiling: _____ Clouds/% Sun: _____	
Type and Amount of Tamping Used:	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No ☐	Readings / Results:	

NOT USED

Demolition Materials Used

Description	Amount	Description	Amount
Perforator		Time Fuze	
Det Cord		Squibs	
Electric Detonator		Black / Smokeless Powder	
Non-electric Detonator		Two Component	
Non-El Detonator		Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: _____ Date: _____

EODT DEMOLITION SHOT RECORD

Site Name/Location: Longhorn Army Ammunition Plant, Karnack, TX		Date: 10/31/08
Shot Location (OB/OD Range or Grid No.): Site 27 / Grid E-05	Demolition Supervisor: Chuck Overstreet	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned (60 ea) M112 Flares, (2ea) M62 Flares,	Firing Method: RFD / NONEL	Time of Shot: 1600
Direction and Distance to Nearest Building, Road, Utility Line, etc.: 1.5 MILES	Temp: 72f Wind Dir./Speed: Light Ceiling: Unlimited Clouds/% Sun: 100%	
Type and Amount of Tamping Used: N/A	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No X☐	Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator	0	Time Fuze	0
Det Cord	15FT	Squibs	0
Boosters	25	Black / Smokeless Powder	0
Non-El Shock Tube	50Ft	Two Component	
Non-El Detonator	1 ea	Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: Chuck Overstreet Date: 10/31/08

Site Name/Location:		Date:
Shot Location (OB/OD Range or Grid No.):	Demolition Supervisor:	State License # (if applicable):
Type of UXO/OE Destroyed, Vented or Burned:	Firing Method:	Time of Shot:
Direction and Distance to Nearest Building, Road, Utility Line, etc.:	Temp: Wind Dir./Speed: Ceiling: Clouds/% Sun:	
Type and Amount of Tamping Used:	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No ☐	Readings / Results:	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator		Time Fuze	
Det Cord		Squibs	
Electric Detonator		Black / Smokeless Powder	
Non-electric Detonator		Two Component	
Non-El Detonator		Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: _____ Date: _____

NOT USED

00099521

EODT DEMOLITION SHOT RECORD

Site Name/Location: Longhorn Army Ammunition Plant, Karnack, TX		Date: 10/24/08
Shot Location (OB/OD Range or Grid No.): Site 27 / Grid E-05	Demolition Supervisor: Chuck Overstreet	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned 17 ea) M112 Flares.	Firing Method: RFD / NONEL	Time of Shot: 1600
Direction and Distance to Nearest Building, Road, Utility Line, etc.: 1.5 MILES	Temp: 65f Wind Dir./Speed: Light Ceiling: Unlimited Clouds % Sun: 100%	
Type and Amount of Tamping Used: N/A	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No X☐	Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator	0	Time Fuze	0
Det Cord	10FT	Squibs	0
Boosters	10	Black / Smokeless Powder	0
Non-El Shock Tube	50Ft	Two Component	
Non-El Detonator	1 ea	Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: Charles Overstreet Date: 10/24/08

Site Name/Location:		Date:
Shot Location (OB/OD Range or Grid No.):	Demolition Supervisor:	State License # (if applicable):
Type of UXO/OE Destroyed, Vented or Burned:	Firing Method:	Time of Shot:
Direction and Distance to Nearest Building, Road, Utility Line, etc.:	Temp: _____ Wind Dir./Speed: _____ Ceiling: _____ Clouds/% Sun: _____	
Type and Amount of Tamping Used:	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No ☐	Readings / Results:	

NOT USED

Demolition Materials Used

Description	Amount	Description	Amount
Perforator		Time Fuze	
Det Cord		Squibs	
Electric Detonator		Black / Smokeless Powder	
Non-electric Detonator		Two Component	
Non-El Detonator		Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: _____ Date: _____

00099522

EODT DEMOLITION SHOT RECORD

Site Name/Location: Longhorn Army Ammunition Plant, Karnack, TX		Date: 10/22/08
Shot Location (OB/OD Range or Grid No.): Site 27 / Grid E-05	Demolition Supervisor: Chuck Overstreet	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned: ~~55~~ 4 ea) M112 Flares, ~~55~~ 4 ea) M62 Flares	Firing Method: RFD / NONEL	Time of Shot: 1130
Direction and Distance to Nearest Building, Road, Utility Line, etc.: 1.5 MILES	Temp: 76 f Wind Dir./Speed: Light Ceiling: Unlimited Clouds/% Sun: 60%	
Type and Amount of Tamping Used: N/A	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No X☐	Readings / Results: N/A	

Demolition Materials Used			
Description	Amount	Description	Amount
Perforator	0	Time Fuze	0
Det Cord	15FT	Squibs	0
Boosters	25	Black / Smokeless Powder	0
Non-El Shock Tube	50Ft	Two Component	0
Non-El Detonator	1 ea	Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: Chalin Dott Date: 10/22/08

Site Name/Location:		Date:
Shot Location (OB/OD Range or Grid No.):	Demolition Supervisor:	State License # (if applicable):
Type of UXO/OE Destroyed, Vented or Burned:	Firing Method:	Time of Shot:
Direction and Distance to Nearest Building, Road, Utility Line, etc.:	Temp: _____ Wind Dir./Speed: _____ Ceiling: _____ Clouds/% Sun: _____	
Type and Amount of Tamping Used:	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No ☐	Readings / Results:	

NOT USED

Demolition Materials Used			
Description	Amount	Description	Amount
Perforator		Time Fuze	
Det Cord		Squibs	
Electric Detonator		Black / Smokeless Powder	
Non-electric Detonator		Two Component	
Non-El Detonator		Other (list)	

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: _____ Date: _____

00099523

EODT DEMOLITION SHOT RECORD

Site Name/Location: Longhorn Army Ammunition Plant, Karnack, TX		Date: 10/10/08
Shot Location (OB/OD Range or Grid No.): Site 27 / Grid E-05	Demolition Supervisor: Chuck Overstreet	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned: (63 ea.) M62 illumination flares, (2 ea) M112 illumination flares, (1 ea.) M12 Photoflash Cart	Firing Method: RFD / NONEL	Time of Shot: 1212
Direction and Distance to Nearest Building, Road, Utility Line, etc.: 1.5 miles	Temp: 82 F Wind Dir./Speed: Light Ceiling: Unlimited Clouds/% Sun: 95%	
Type and Amount of Tamping Used: None	Mat or Other Protection Used (list): N/A	
Seismographic / Sound Level Meter Used: Yes ☐ No X	Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator	N/A	Other (list)	
Booster	20 ea.		
Det Cord	10 ft.		
Non-El Detonator	1 ea.		
Non-El Shock Tube	50 ft.		

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: Chuck O'H Date: 10 Oct 2008

Site Name/Location: : Longhorn Army Ammunition Plant, Karnack, TX		Date:
Shot Location (OB/OD Range or Grid No.):	Demolition Supervisor:	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned:	Firing Method:	Time of Shot:
Direction and Distance to Nearest Building, Road, Utility Line, etc.:	Temp: _____ Wind Dir./Speed: _____ Ceiling: _____ Clouds/% Sun: _____	
Type and Amount of Tamping Used:	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No X	Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator		Other (list)	
Booster			
Det Cord			
Non-El Detonator			
Non-El Shock Tube			

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: _____ Date: _____

NOT USED

00099524

EODT DEMOLITION SHOT RECORD

Site Name/Location: Longhorn Army Ammunition Plant, Karnack, TX		Date: 9/25/08
Shot Location (OB/OD Range or Grid No.): Site 27 / Grid E-05	Demolition Supervisor: Chuck Overstreet	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned: (24 ea.) M62 illumination flares, (44 ea) M112 illumination flares, (1 ea.) M123 flare	Firing Method: RFD / NONEL	Time of Shot: 1115
Direction and Distance to Nearest Building, Road, Utility Line, etc.: 1.5 miles	Temp: 85 F Wind Dir./Speed: Light & Variable Ceiling: Unlimited Clouds/% Sun: 95%	
Type and Amount of Tamping Used: None	Mat or Other Protection Used (list): N/A	
Seismographic / Sound Level Meter Used: Yes ☐ No X	Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator	N/A	Other (list)	
Booster	20 ea.		
Det Cord	10 ft.		
Non-El Detonator	1 ea.		
Non-El Shock Tube	50 ft.		

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: Charlie Dart Date: 25 Sep 2008

Site Name/Location: : Longhorn Army Ammunition Plant, Karnack, TX		Date:
Shot Location (OB/OD Range or Grid No.):	Demolition Supervisor:	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned:	Firing Method:	Time of Shot:
Direction and Distance to Nearest Building, Road, Utility Line, etc.:	Temp: _____ Wind Dir./Speed: _____ Ceiling: _____ Clouds/% Sun: _____	
Type and Amount of Tamping Used:	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No X	Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator		Other (list)	
Booster			
Det Cord			
Non-El Detonator			
Non-El Shock Tube			

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: _____ Date: _____

NOT USED

00099525

EODT DEMOLITION SHOT RECORD

Site Name/Location: Longhorn Army Ammunition Plant, Karnack, TX		Date: 9/18/08
Shot Location (OB/OD Range or Grid No.): Site 54	Demolition Supervisor: Chuck Overstreet	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned: (2 ea.) M583A1 40mm, (1 ea.) M206 Flare, (4 ea) M127 Flare, (2 ea.) Flare Candle	Firing Method: RFD / NONEL	Time of Shot: 1050
Direction and Distance to Nearest Building, Road, Utility Line, etc.: 3,960 ft	Temp: 65 F Wind Dir./Speed: Light & Variable Ceiling: Unlimited Clouds/% Sun: 75%	
Type and Amount of Tamping Used: None	Mat or Other Protection Used (list): N/A	
Seismographic / Sound Level Meter Used: Yes ☐ No X	Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator	1 ea.	Other (list)	
Booster	4 ea.		
Det Cord	10 ft.		
Non-El Detonator	1 ea.		
Non-El Shock Tube	25 ft.		

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: Charlie Overstreet Date: 9/18/2008

Site Name/Location: : Longhorn Army Ammunition Plant, Karnack, TX		Date:
Shot Location (OB/OD Range or Grid No.):	Demolition Supervisor:	State License # (if applicable): N/A
Type of UXO/OE Destroyed, Vented or Burned:	Firing Method:	Time of Shot:
Direction and Distance to Nearest Building, Road, Utility Line, etc.:	Temp: _____ Wind Dir./Speed: _____ Ceiling: _____ Clouds/% Sun: _____	
Type and Amount of Tamping Used:	Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No X	Readings / Results: N/A	

NOT USED

Demolition Materials Used

Description	Amount	Description	Amount
Perforator		Other (list)	
Booster			
Det Cord			
Non-El Detonator			
Non-El Shock Tube			

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: _____ Date: _____

00099526

EODT DEMOLITION SHOT RECORD

Site Name/Location: Longhorn Army Ammunition Plant, Karnack, TX			Date: 9/5/08
Shot Location (OB/OD Range or Grid No.): Site 54	Demolition Supervisor: Chuck Overstreet	State License # (if applicable): N/A	
Type of UXO/OE Destroyed, Vented or Burned: (1 ea.) 4.2" mortar, illumination, (2 ea.) 40 mm illumination, (1 ea) 155mm illumination candle		Firing Method: RFD / NONEL	Time of Shot: 1631
Direction and Distance to Nearest Building, Road, Utility Line, etc.: 3,960 ft		Temp: 85 F Wind Dir./Speed: Light & Variable Ceiling: Unlimited Clouds/% Sun: 95%	
Type and Amount of Tamping Used: None		Mat or Other Protection Used (list): N/A	
Seismographic / Sound Level Meter Used: Yes ☐ No X		Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator	1 ea.	Other (list)	
Booster	4 ea.		
Det Cord	10 ft.		
Non-El Detonator	1 ea.		
Non-El Shock Tube	75 ft.		

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: Chuck Overstreet Date: 9-5-2008

Site Name/Location: : Longhorn Army Ammunition Plant, Karnack, TX			Date:
Shot Location (OB/OD Range or Grid No.):	Demolition Supervisor:	State License # (if applicable): N/A	
Type of UXO/OE Destroyed, Vented or Burned:		Firing Method:	Time of Shot:
Direction and Distance to Nearest Building, Road, Utility Line, etc.:		Temp: Wind Dir./Speed: Ceiling: Clouds/% Sun:	
Type and Amount of Tamping Used:		Mat or Other Protection Used (list):	
Seismographic / Sound Level Meter Used: Yes ☐ No X		Readings / Results: N/A	

Demolition Materials Used

Description	Amount	Description	Amount
Perforator		Other (list)	
Booster			
Det Cord			
Non-El Detonator			
Non-El Shock Tube			

Certification

I certify that the explosives listed were used for their intended purpose, and that the UXO/OE listed were rendered inert/destroyed.
Signature of Demolition Supervisor: _____ Date: _____

APPENDIX I
EXPLOSIVES ACCOUNTABILITY RECORDS

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

00099528

EODT Explosives Accountability Record

(Magazine Data Card)

Product Code / FSN:	Nomenclature:			Site Name: Longhorn Army Ammunition Plant
HES-APRV-004	Charges, Shaped			Address: Karnack, Texas
Date Code / Lot Number:	Hazard Class	UN or NA	Quantity / Case: 1	
EX1996080028	1.45	0441		

Date	Bill of Lading / Voucher Number	Received From	Quantity Received	Quantity Issued	Issued To	Current Balance	Initials	
							Issuer	Receiver
8/21/08	804319734	HAlliburton	50 ea	—	Initial Receipt	50 ea	JMD	TBH
8/28/08	—	—	—	—	Inventory	50 ea	JMD	TBH
9/5/08	—	—	—	1 ea.	C. Overstreet.	49 ea	JMD	CEO
9/11/08	—	—	—	—	Inventory	49 ea	JMD	CEO
9/18/08	—	—	—	1 ea	C Overstreet	48 ea	JMD	CEO
9/18/08	—	—	—	—	Inventory	48 ea	JMD	CEO
9/25/08	—	—	—	—	Inventory	48 ea	JMD	DMW
10/3/08	—	—	—	—	Inventory	48 ea	JMD	TBH
10/10/08	—	—	—	—	Inventory	48 ea	JMD	MAR
10/17/08	—	—	—	—	Inventory	48 ea	JMD	TMM
10/24/08	—	—	—	—	Inventory	48 ea	JMD	CEO
10/31/08	—	—	—	—	Inventory	48 ea	JMD	
11/07/08	—	—	—	—	Inventory	48 ea	TBH	CEO

EODT Explosives Accountability Record

(Magazine Data Card)

Product Code / FSN:	Nomenclature:			Site Name: Longhorn Army Ammunition Plant
HES-APRV-004	Charges, Shaped			Address: Karnack, Texas
Date Code / Lot Number:	Hazard Class	UN or NA	Quantity / Case: 1	
EX1996080028	1.4S	0441		

Date	Bill of Lading / Voucher Number	Received From	Quantity Received	Quantity Issued	Issued To	Current Balance	Initials	
							Issuer	Receiver
11/14/08	———	Balance brought Forward			———	48	TBH	CEO
11/14/08	—	—	—	13	Chuck Overstreet	35	TBH	CEO
11/21/08	—	—	—	35	JR Castor	Ø	TBH	

LAST ENTRY

EODT Explosives Accountability Record

(Magazine Data Card)

Product Code / FSN:	Nomenclature:			Site Name: Longhorn Army Ammunition Plant
05189	Black Cap Booster			Address: Karnack, Texas
Date Code / Lot Number:	Hazard Class	UN or NA	Quantity / Case: 1	
19FE04C2	1.1D	0042		

Date	Bill of Lading / Voucher Number	Received From	Quantity Received	Quantity Issued	Issued To	Current Balance	Initials	
							Issuer	Receiver
8/25/08	0606459-00	Austin Powder	60ea	—	Initial Receipt.	60ea	[illegible]	[illegible]
8/28/08	—	—	—	—	Inventory	60	TBH	[illegible]
9/5/08	—	—	—	4ea	C. Overstreet.	56ea	[illegible]	CEO
9/11/08	—	—	—	—	Inventory	56ea	[illegible]	[illegible]
9/18/08	—	—	—	4ea.	C. Overstreet	52ea	[illegible]	CEO
9/18/08	—	—	—	—	Inventory	52ea	[illegible]	CEO
9/25/08	—	—	—	20ea	C. Overstreet	32ea	[illegible]	CEO
9/25/08	—	—	—	—	Inventory	32ea	[illegible]	DMW
10/3/08	—	—	—	—	Inventory	32ea	[illegible]	TBH
10/10/08	—	—	—	20ea.	C. Overstreet	12ea	[illegible]	CEO
10/10/08	—	—	—	—	Inventory	12ea	[illegible]	MAR
10/17/08	0618535-00	Austin Powder	60ea	—	Re-Supply	72ea	[illegible]	TMM
10/17/08	—	—	—	—	Inventory	72ea	[illegible]	TBH
10/22/08	—	—	—	25	C. Overstreet	47ea.	[illegible]	CEO

EODT Explosives Accountability Record

(Magazine Data Card)

Product Code / FSN:	Nomenclature:			Site Name: **Longhorn Army Ammunition Plant**
05189	Black Cap Booster			Address: **Karnack, Texas**
Date Code / Lot Number:	Hazard Class	UN or NA	Quantity / Case:	
19FE04C2	1.1D	0042	1	

Date	Bill of Lading / Voucher Number	Received From	Quantity Received	Quantity Issued	Issued To	Current Balance	Initials	
							Issuer	Receiver
10/24/08	—	Balance Brought Forward	—		—	47 ea	[illegible]	[illegible]
10/24/08	—	—	—	10 ea	C. Overstreet	37 ea	[illegible]	[illegible]
10/24/08	—	—	—	—	Inventory	37 ea	[illegible]	[illegible]
10/31/08	—	—	—	25 ea	C. Overstreet	12 ea	[illegible]	[illegible]
10/31/08	—	—	—	—	Inventory	12 ea	[illegible]	[illegible]
11/6/08	2531983	Austin Powder	60 ea	—	Re-Supply	72 ea	[illegible]	TBH
11/07/08	—	—	—	20 ea	C. Overstreet	52 ea	TBH	[illegible]
11/14/08	—	—	—	20 ea	Chuck Overstreet	32 ea	TBH	[illegible]
11/21/08	—	—	—	32 ea	JR Castore	0	TBH	[illegible]

LAST ENTRY

EODT Explosives Accountability Record

(Magazine Data Card)

Product Code / FSN:	Nomenclature:			Site Name: Longhorn Army Ammunition Plant
1010016777	Cord, Detonating			Address: Karnack, Texas
Date Code / Lot Number:	Hazard Class	UN or NA	Quantity / Case:	
EX2005180221	1.4D	0289	1	

Date	Bill of Lading / Voucher Number	Received From	Quantity Received	Quantity Issued	Issued To	Current Balance	Initials	
							Issuer	Receiver
8/25/08	6791-5804-8562	Halliburton	500'	—	Initial Issue	500'	[illegible]	BH
8/28/08	—	—	—	—	Inventory	500'	BH	[illegible]
9/5/08	—	—	—	10'	C. Overstreet	490'	[illegible]	CEO
9/11/08	—	—	—	—	Inventory	490'	[illegible]	[illegible]
9/18/08	—	—	—	10'	C. Overstreet	480'	[illegible]	CEO
9/18/08	—	—	—	—	Inventory	480'	[illegible]	CEO
9/25/08	—	—	—	10'	C Overstreet	470'	[illegible]	CEO
9/25/08	—	—	—	—	Inventory	470'	[illegible]	DMW
10/3/08	—	—	—	—	Inventory	470'	[illegible]	BH
10/10/08	—	—	—	10'	C. Overstreet	460'	[illegible]	CEO
10/10/08	—	—	—	—	Inventory	460'	[illegible]	MAR
10/17/08	—	—	—	—	Inventory	460'	[illegible]	EMH
10/22/08	—	—	—	15'	C. Overstreet	445'	[illegible]	CEO
10/24/08	—	—	—	10'	C Overstreet	435'	[illegible]	CEO

EODT Explosives Accountability Record

(Magazine Data Card)

Product Code / FSN:	Nomenclature:			Site Name: **Longhorn Army Ammunition Plant**
101001677	Cord, Detonating			Address: **Karnack, Texas**
Date Code / Lot Number:	Hazard Class	UN or NA	Quantity / Case: 1	
EX2005100221	1.4D	0289		

Date	Bill of Lading / Voucher Number	Received From	Quantity Received	Quantity Issued	Issued To	Current Balance	Initials	
							Issuer	Receiver
10/24/08	—	BALANCE BROUGHT FORWARD			—	435'	DE	CEO
10/24/08	—	—	—	—	Inventory	435'	[illegible]	CEO
10/31/08	—	—	—	15'	C. Overstreet	420'	DE	CEO
10/31/08	—	—	—	—	Inventory	420'	DE	[illegible]
11/07/08	—	—	—	15'	C. Overstreet	405'	TBH	CEO
11/14/08	—	—	—	30'	C. Overstreet	375'	TBH	CEO
11/21/08	—	—	—	375'	JR Castro	0	TBH	[illegible]

LAST ENTRY

EODT Explosives Accountability Record

(Magazine Data Card)

Product Code / FSN:	Nomenclature:			Site Name: Longhorn Army Ammunition Plant
BNA-YEL-2500FT	Shock Tube Lead Line			Address: Karnack, Texas
Date Code / Lot Number:	Hazard Class	UN or NA	Quantity / Case: Roll	
05DEC0752	1.4S	0349		

Date	Bill of Lading / Voucher Number	Received From	Quantity Received	Quantity Issued	Issued To	Current Balance	Initials	
							Issuer	Receiver
8/26/08	139645	Omni Explosives	2500 ft	—	Initial Receipt	2500ft	DLE	[illegible]
8/28/08	—	—	0	0	INVENTORY	2,500'	BH	[illegible]
9/05/08	—	—	—	75'	C. Overturf	2,425'	DLE	CEO
9/11/08	—	—	—	—	Inventory	2,425'	DLE	[illegible]
9/18/08	—	—	—	25'	C. Overturf	2400'	DLE	CEO
9/18/08	—	—	—	—	Inventory	2400'	DLE	CEO
9/25/08	—	—	—	50'	C. Overturf	2350'	DLE	CEO
9/25/08	—	—	—	—	Inventory	2350'	DLE	DMW
10/3/08	—	—	—	—	Inventory	2350'	DLE	BH
10/10/08	—	—	—	50'	C. Overturf.	2300'	DLE	CEO
10/10/08	—	—	—	—	Inventory	2300'	DLE	MAR
10/17/08	—	—	—	—	Inventory	2300'	DLE	CMM
10/22/08	—	—	—	50'	C. Overturf.	2,250'	DLE	CEO
10/24/08	—	—	—	50'	C. Overturf	2,200	DLE	CEO

EODT Explosives Accountability Record

(Magazine Data Card)

Product Code / FSN:	Nomenclature:			Site Name: Longhorn Army Ammunition Plant
BINA-YEL-250FT	Shock Tube, Lead Line			Address: Karnack, Texas
Date Code / Lot Number:	Hazard Class	UN or NA	Quantity / Case: Roll	
05DEC0752	1.4S	0349		

Date	Bill of Lading / Voucher Number	Received From	Quantity Received	Quantity Issued	Issued To	Current Balance	Initials	
							Issuer	Receiver
10/24/08	—	Balance brought Forward			—	2,200'	MP	CW
10/24/08	—	—	—	—	Inventory	2,200'	MP	CW
10/31/08	—	—	—	50'	C. Overstreet	2,150	MP	CW
10/31/08	—	—	—	—	Inventory	2,150	MP	[illegible]
11/07/08	—	—	—	50'	C. Overstreet	2,100'	BH	CW
11/14/08	—	—	—	100'	C. Overstreet	2,000'	BH	CW
11/21/08	—	—	—	2,000'	JR Castor	0	BH	[illegible]

LAST ENTRY

EODT Explosives Accountability Record

(Magazine Data Card)

Product Code / FSN:	Nomenclature:			Site Name: Longhorn Army Ammunition Plant
BN16-INST-25	Blasting Cap, Shocktube, 16'			Address: Karnack, Texas
Date Code / Lot Number:	Hazard Class	UN or NA	Quantity / Case: BX	
09JUL2008	1.4S	0500		

Date	Bill of Lading / Voucher Number	Received From	Quantity Received	Quantity Issued	Issued To	Current Balance	Initials	
							Issuer	Receiver
8/26/08	Q139645	Omni Explosives	25ea	—	Initial Receipt	25ea	[illegible]	[illegible]
8/26/08	—	—	∅	∅	INVENTORY	25ea	TBH	[illegible]
9/5/08	—	—	—	1ea.	C. Overstreet	24ea	[illegible]	Ceo
9/11/08	—	—	—	—	Inventory	24ea	[illegible]	[illegible]
9/18/08	—	—	—	1ea	C. Overstreet	23ea	[illegible]	Ceo
9/18/08	—	—	—	—	Inventory	23ea	[illegible]	Ceo
9/25/08	—	—	—	1ea.	C. Overstreet	22ea	[illegible]	Ceo
9/25/08	—	—	—	—	Inventory	22ea.	[illegible]	DMW
10/3/08	—	—	—	—	Inventory	22ea.	[illegible]	TBH
10/10/08	—	—	—	1ea	C. Overstreet	21ea	[illegible]	Ceo
10/10/08	—	—	—	—	Inventory	21ea.	[illegible]	MAB
10/17/08	—	—	—	—	Inventory	21ea	[illegible]	CMM
10/22/08	—	—	—	1ea.	C. Overstreet	20ea	[illegible]	Ceo
10/24/08	—	—	—	1ea	C. Overstreet	19ea	[illegible]	Ceo

EODT Explosives Accountability Record

(Magazine Data Card)

Product Code / FSN:	Nomenclature:			Site Name: **Longhorn Army Ammunition Plant**
BN16-1NST-25	Blasting Cap, Shock Tube, 16'			Address: **Karnack, Texas**
Date Code / Lot Number:	Hazard Class	UN or NA	Quantity / Case: ~~Pk~~	
09JULY2008	1.4S	0500		

Date	Bill of Lading / Voucher Number	Received From	Quantity Received	Quantity Issued	Issued To	Current Balance	Initials Issuer	Initials Receiver
10/24/08	—	Balance brought Forward			—	19 ea	XXX	CEO
10/24/08	—	—	—	—	Inventory	19 ea	XXX	CEO
10/31/08	—	—	—	1	C. Overstreet	18 ea	XXX	CEO
10/31/08	—	—	—	—	Inventory	18 ea	XXX	[illegible]
11/07/08	—	—	—	1	C. Overstreet	17 ea	BH	CEO
11/14/08	—	—	—	2	C. Overstreet	15 ea	BH	CEO
11/21/08	—	—	—	15	JR Castro	0	BH	[illegible]

LAST ENTRY

APPENDIX J
QA 948s

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

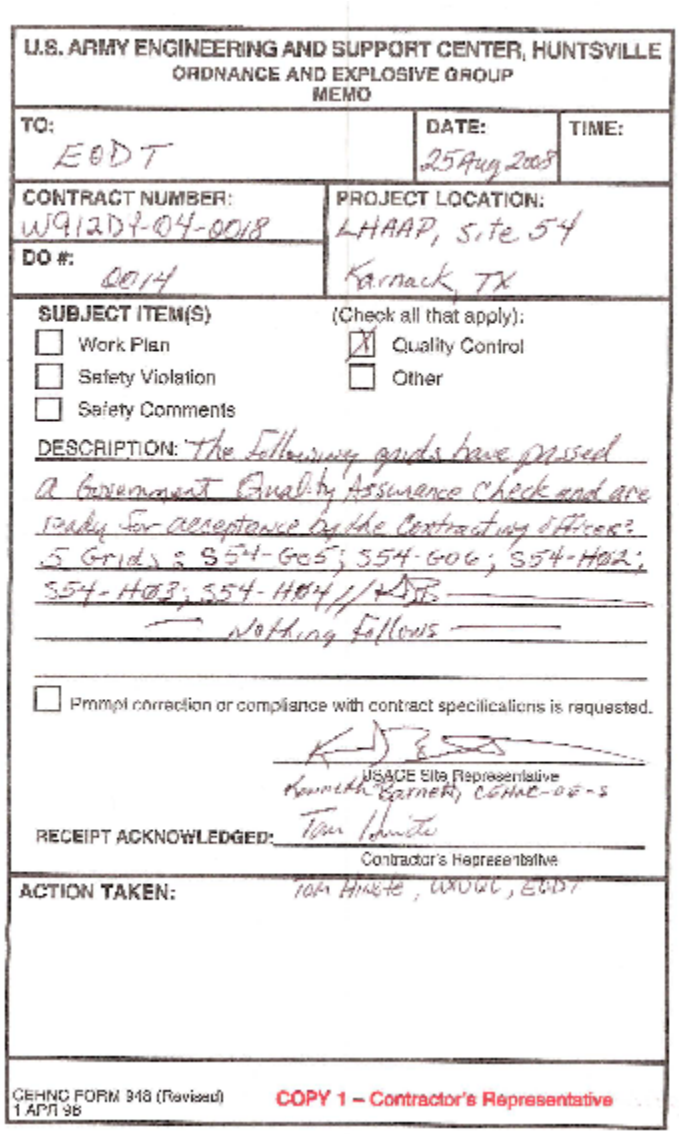
Prepared by:

2229 Old Highway 95
Lenoir City, TN 37771

September 2009

APPENDIX J
QA 948S

This appendix is included behind this page.



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT
DATE: 25 Aug 2008
TIME:

CONTRACT NUMBER: W912DY-04-D-0018
PROJECT LOCATION: LHAAP, Site 54 Karnack TX
DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [X] Quality Control
- [ ] Other

DESCRIPTION: The following grids have passed a Government Quality Assurance Check and are ready for acceptance by the Contracting Officer: 5 Grids: S54-G05; S54-G06; S54-H02; S54-H03; S54-H04 // KDB
— Nothing Follows —

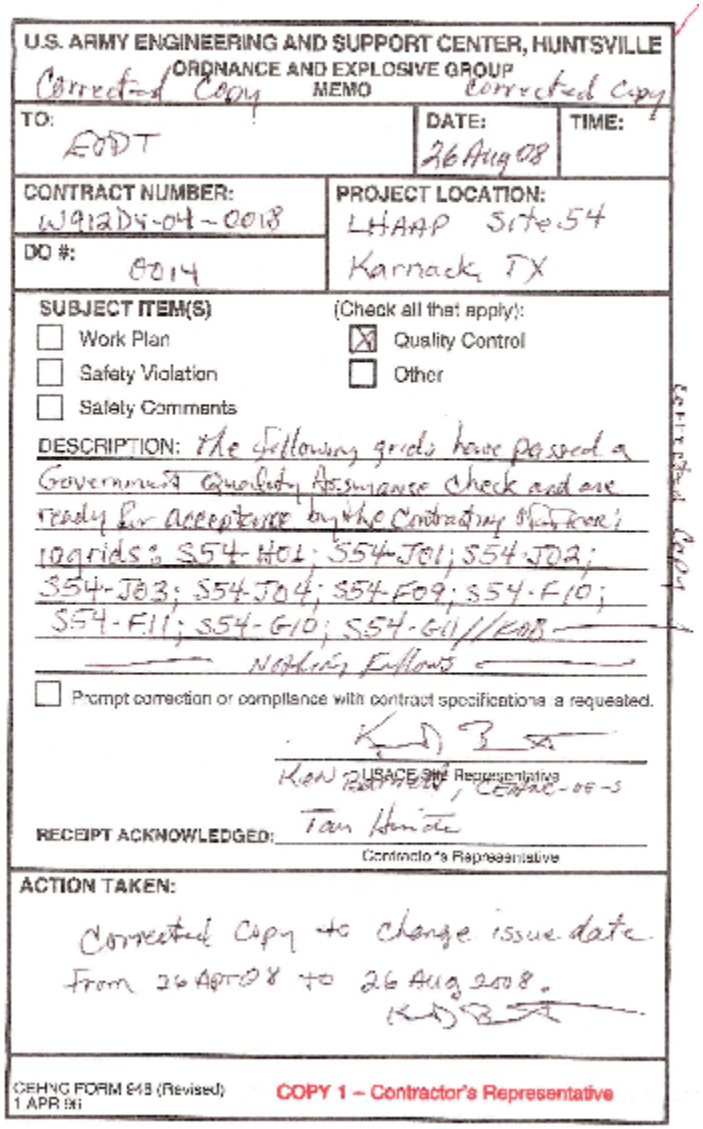
[ ] Prompt correction or compliance with contract specifications is requested.

KDB
USACE Site Representative
Kenneth Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tom Hinote
Contractor's Representative

ACTION TAKEN: Tom Hinote, UXOQC, EODT

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
Corrected Copy
ORDNANCE AND EXPLOSIVE GROUP
MEMO
Corrected Copy

TO: EODT
DATE: 26 Aug 08
TIME:

CONTRACT NUMBER: W912DY-04-D-0018
PROJECT LOCATION: LHAAP Site 54 Karnack TX
DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [X] Quality Control
- [ ] Other

DESCRIPTION: The following grids have passed a Government Quality Assurance Check and are ready for acceptance by the Contracting Officer; 10 grids: S54-H01; S54-J01; S54-J02; S54-J03; S54-J04; S54-E09; S54-F10; S54-F11; S54-G10; S54-G11 // KDB
— Nothing Follows —

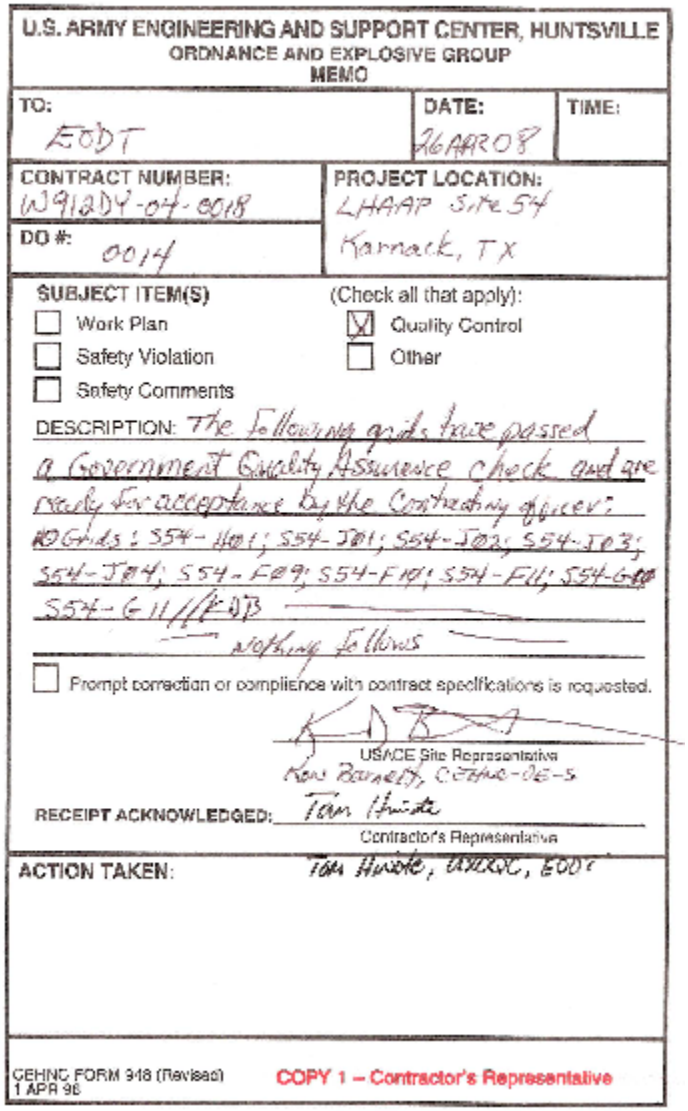
[ ] Prompt correction or compliance with contract specifications is requested.

KDB
USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tom Hinote
Contractor's Representative

ACTION TAKEN:
Corrected Copy to change issue date from 26 Aug 08 to 26 Aug 2008.
KDB

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 26APR08 | TIME:

CONTRACT NUMBER: W912DY-04-D0018 | PROJECT LOCATION: LHAAP Site 54 Karnack, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a Government Quality Assurance check and are ready for acceptance by the Contracting Officer: 10 Grids: S54-H01; S54-J01; S54-J02; S54-J03; S54-J04; S54-F09; S54-F10; S54-F11; S54-G10 S54-G11//EOD — Nothing Follows

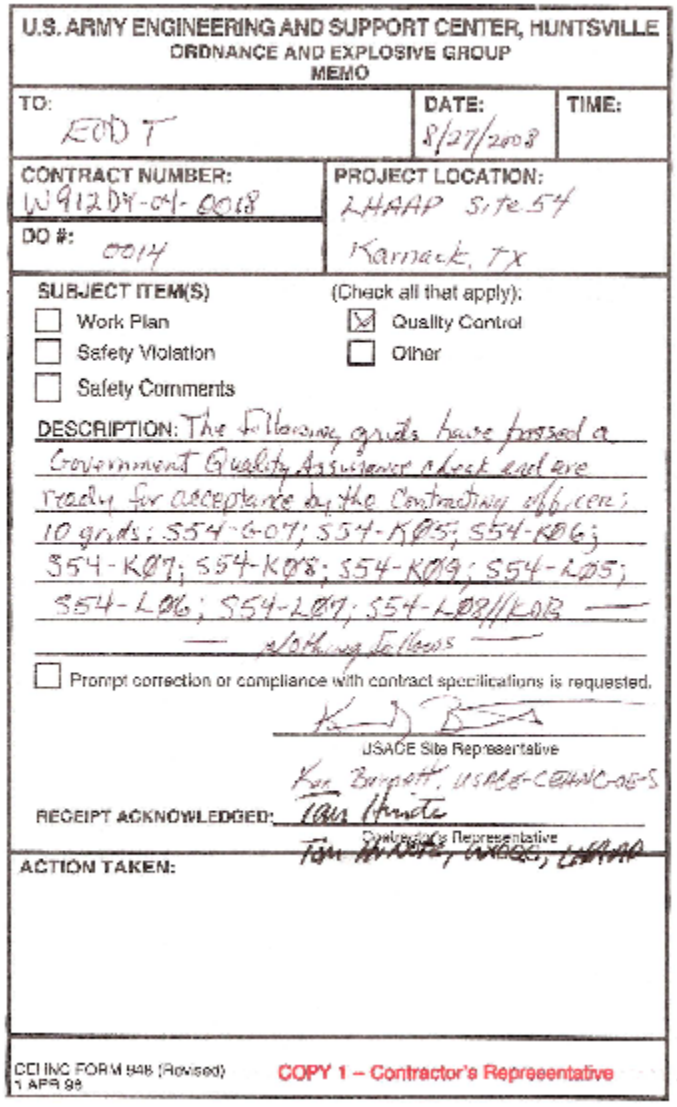
☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tom Hinote
Contractor's Representative

ACTION TAKEN: Tom Hinote, UXOSO, EODT

CEHNC FORM 948 (Revised) 1 APR 98 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EOD T | DATE: 8/27/2008 | TIME:

CONTRACT NUMBER: W912DY-04-D0018 | PROJECT LOCATION: LHAAP Site 54 Karnack, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a Government Quality Assurance check and are ready for acceptance by the Contracting Officer: 10 grids: S54-G07; S54-K05; S54-K06; S54-K07; S54-K08; S54-K09; S54-L05; S54-L06; S54-L07; S54-L08//EOD — Nothing Follows

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, USACE-CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tom Hinote
Contractor's Representative
Tom Hinote, UXOSO, LHAAP

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 98 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	8/28/08	

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D0018	LHAAP Site 54
DO #: 0014	Karnack, TX

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☑ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a Government Quality Assurance Check and are ready for acceptance by the Contracting officer: 29 grids 554-E09; 554-E10; 554-E11; 554-J05; 554-J06; 554-J07; 554-K02; 554-K03; 554-K04; 554-L04; 554-E08 554-H09; 554-H10; 554-H11; 554-J08; 554-J09; 554-J10 // KOB

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Kenneth Barnett, USACE - CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tom Hunter
Contractor's Representative

ACTION TAKEN: TOM NOTIFIED, QA&QC, EODT

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	8/28/08	

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D0018	LHAAP Site 54
DO #: 0014	Karnack, TX

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☑ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a Government Quality Assurance Check and are ready for acceptance by the Contracting officer: 29 grids 554-E09; 554-E10; 554-E11; 554-J05; 554-J06; 554-J07; 554-K02; 554-K03; 554-K04; 554-L04; 554-E08 554-H09; 554-H10; 554-H11; 554-J08; 554-J09; 554-J10 // KOB

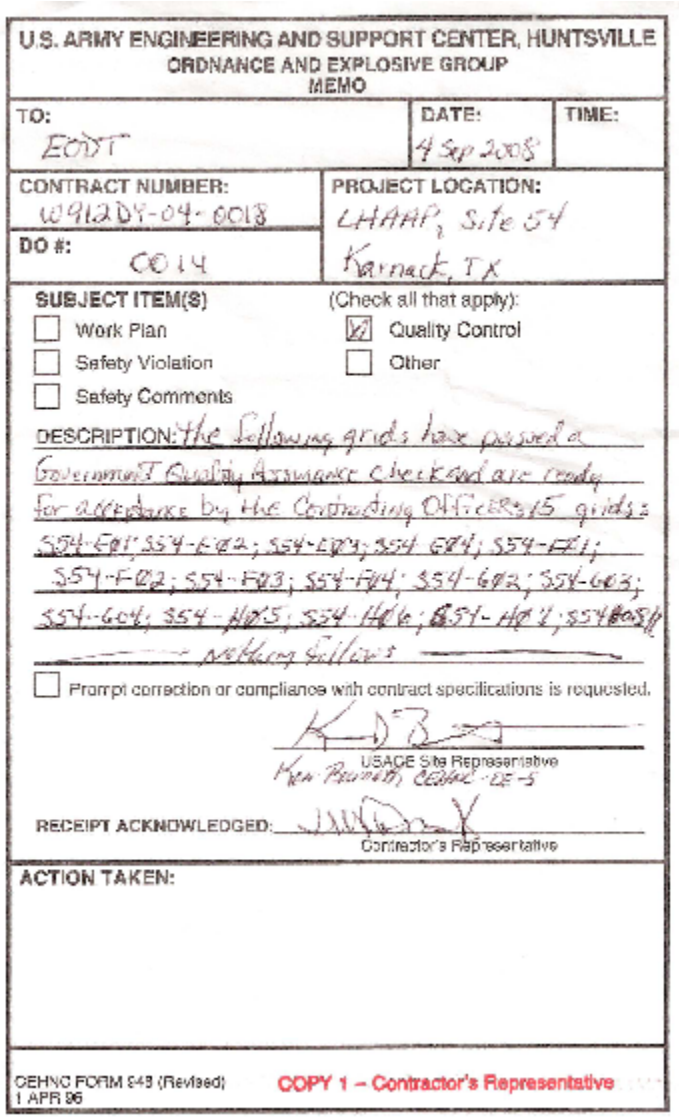
☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Kenneth Barnett, USACE - CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tom Hunter
Contractor's Representative

ACTION TAKEN: TOM NOTIFIED, QA&QC, EODT

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 4 Sep 2008 | TIME:

CONTRACT NUMBER: W912DY-04-0018 | PROJECT LOCATION: LHAAP, Site 54 Karnack, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [x] Quality Control
- [ ] Other

DESCRIPTION: The following grids have passed a Government Quality Assurance check and are ready for acceptance by the Contracting Officers 15 grids: 554-E01; 554-E02; 554-E04; 554-E04; 554-E01; 554-F02; 554-F03; 554-F04; 554-G02; 554-G03; 554-G04; 554-H05; 554-H06; 554-H04; 554-B05

Nothing Follows

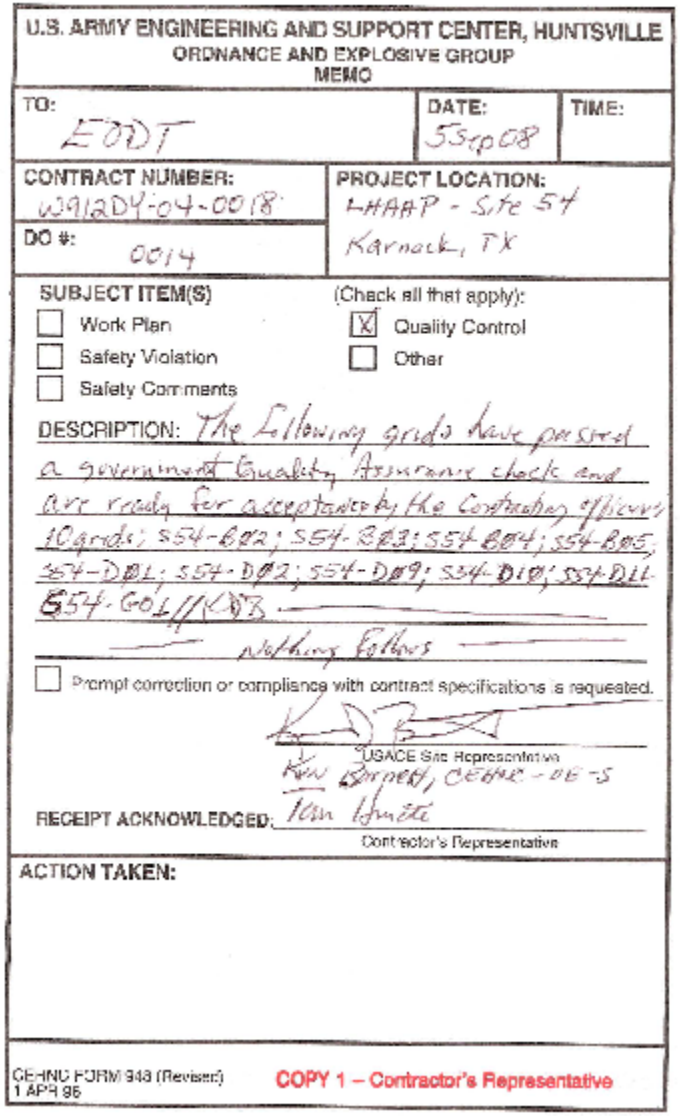
- [ ] Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Contractor's Representative

ACTION TAKEN:

CEHNC FORM 843 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 5 Sep 08 | TIME:

CONTRACT NUMBER: W912DY-04-0018 | PROJECT LOCATION: LHAAP - Site 54 Karnack, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [x] Quality Control
- [ ] Other

DESCRIPTION: The following grids have passed a government Quality Assurance check and are ready for acceptance by the Contracting officers 10 grids: 554-B02; 554-B03; 554-B04; 554-B05; 554-D01; 554-D02; 554-D09; 554-D10; 554-D11 554-G01 // KB

Nothing Follows

- [ ] Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tom Smith Contractor's Representative

ACTION TAKEN:

CEHNC FORM 843 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	8 Sep 2008	

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D0018	LHAAP Site 54
DO #: 0014	Karnack, TX

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a Government Quality Assurance check and are ready for acceptance by the Contracting officer:
10 grids: S54-D03; S54-D04; S54-D05; S54-C01; S54-B09; S54-B06; S54-C07; S54-B08; S54-B09; S54-B10//KDB
Nothing Follows

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett CEHNC-OE-S

RECEIPT ACKNOWLEDGED:
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	9 Sep 2008	

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D0018	LHAAP Site 54
DO #: 0014	Karnack, TX

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a Government Quality Assurance check and are ready for acceptance by the Contracting Officer:
13 grids: S54-A03; S54-A04; S54-A05; S54-A06; S54-A07; S54-A08; S54-C02; S54-C03; S54-C04; S54-C05; S54-C06; S54-C07; S54-C10//KDB
Nothing Follows

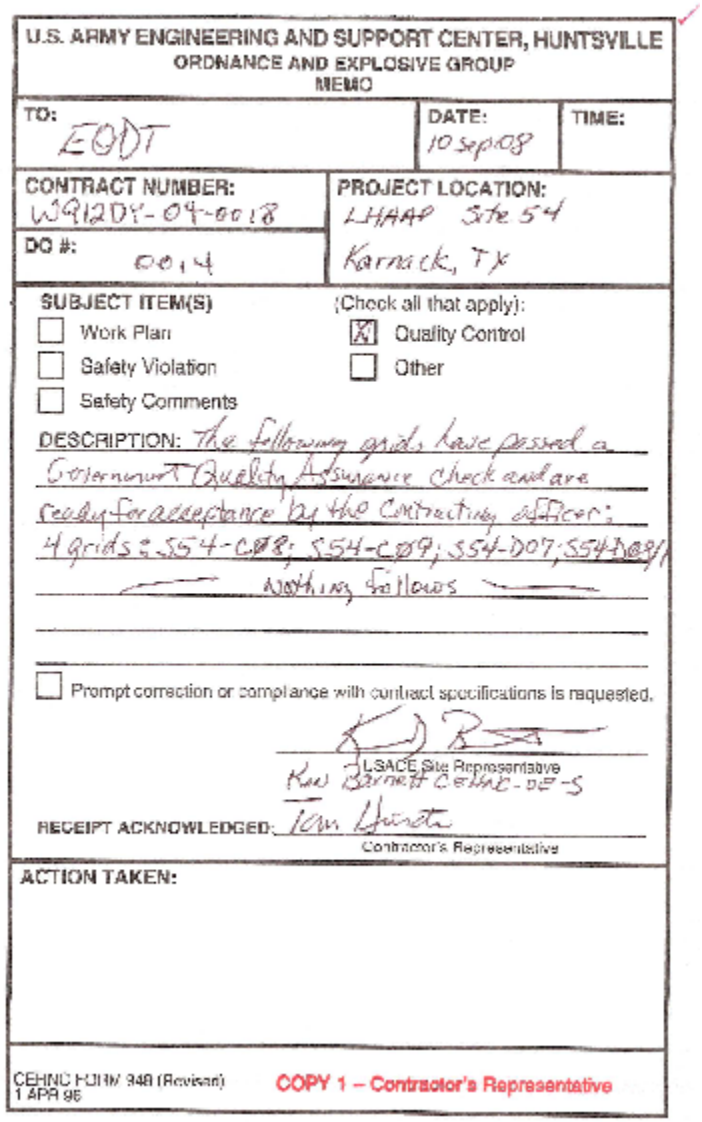
☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, USACE CEHNC-OE-S

RECEIPT ACKNOWLEDGED:
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 10 Sep 08 | TIME:

CONTRACT NUMBER: W912DY-04-D-0018 | PROJECT LOCATION: LHAAP Site 54 Karnack, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [X] Quality Control
- [ ] Other

DESCRIPTION: The following grids have passed a Government Quality Assurance check and are ready for acceptance by the Contracting officer; 4 grids: 554-C08; 554-C09; 554-D07; 554-D08// Nothing follows

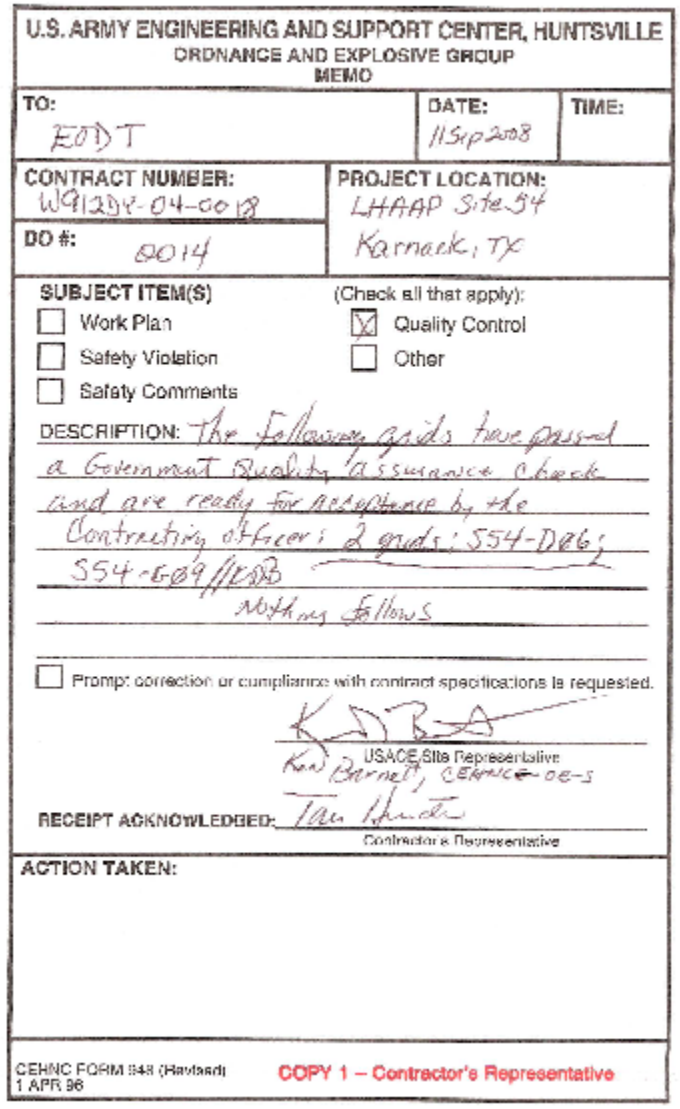
[ ] Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tan Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 348 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 11 Sep 2008 | TIME:

CONTRACT NUMBER: W912DY-04-D-0018 | PROJECT LOCATION: LHAAP Site 54 Karnack, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [X] Quality Control
- [ ] Other

DESCRIPTION: The following grids have passed a Government Quality Assurance check and are ready for acceptance by the Contracting officer; 2 grids: 554-D06; 554-C09// EOD Nothing follows

[ ] Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tan Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 348 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	16 Sep 2008	

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D018	LHAAP Site 27
DO #: 0014	Karnack, TX

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a Government Quality Assurance check and are ready for acceptance by the Contracting officer:
4 Grids: S27-C01; S27-D01; S27-E01; S27-F01/KOB
NOTHING FOLLOWS

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett CEHNC-OE-S

RECEIPT ACKNOWLEDGED:
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	16 Sep 2008	

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D018	LHAAP Site 54
DO #: 0014	Karnack, TX

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a Government Quality Assurance check and are ready for acceptance by the Contracting officer:
5 grids: S54-G08; S54-E06; S54-F05; S54-F06; S54-F07/KOB
Nothing Follows

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED:
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	17 Sep 2008	

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D0018	LHAAP Site 54
DO #: 0014	Karnack TX

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: the following grids have passed a Government Quality Assurance check and are ready for acceptance by the Contracting officer.
2 grids: 554-E05; 554-E07//KDB
Nothing follows

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tom Hinote
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 848 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	17 Sep 2008	

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D0018	LHAAP Site 27
DO #: 0014	Karnack, TX

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: the following grids have passed a Government Quality Assurance Check and are ready for acceptance by the Contracting Officer: 5 grids: S27-G01; S27-G02; S27-H01; S27-H02; S27-I02//KDB
Nothing follows

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tom Hinote
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 848 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	18Sep2008	

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D-0018	LHAAP Site 54
DO #: 0014	Karnack, TX

SUBJECT ITEM(S) (Check all that apply):

- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following Grid has passed a Government Quality Assurance Check and is ready for acceptance by the Contracting Officer: 1 grid: 554-F08//E08

— Nothing follows —

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tau Unite
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	18Sep2008	

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D-0018	LHAAP Site 27
DO #: 0014	Karnack, TX

SUBJECT ITEM(S) (Check all that apply):

- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a Government Quality Assurance check and are ready for acceptance by the contracting officer: 5 grids: S27-B02; S27-C02; S27-D02; S27-E02; S27-F02//E03

— Nothing Follows —

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED:
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 22 Sep 08 | TIME:

CONTRACT NUMBER: W912DY-04-D-0018 | PROJECT LOCATION: LHAAP Site 27 Karnack, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):

- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [X] Quality Control
- [ ] Other

DESCRIPTION: The following grids have passed a Government Quality Assurance Check and are ready for acceptance by the Contracting Officer's 5 grids: S27-A03; S27-B03; S27-C03; S27-D03; S27-F06//E08 ——— Nothing follows ———

[ ] Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett CEHNC-06-S

RECEIPT ACKNOWLEDGED: Ian Hinote
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 23 Sep 08 | TIME:

CONTRACT NUMBER: W912DY-04-D-0018 | PROJECT LOCATION: LHAAP Site 27 Karnack, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):

- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [X] Quality Control
- [ ] Other

DESCRIPTION: The following grids have passed a Government Quality Assurance Check and are ready for acceptance by the Contracting Officer; S27-E03; S27-F03; S27-G03; S27-H03; S27-K03; S27-G06; S27-H06; S27-J06; S27-K06// 9 grids// K013 ——— Nothing follows ———

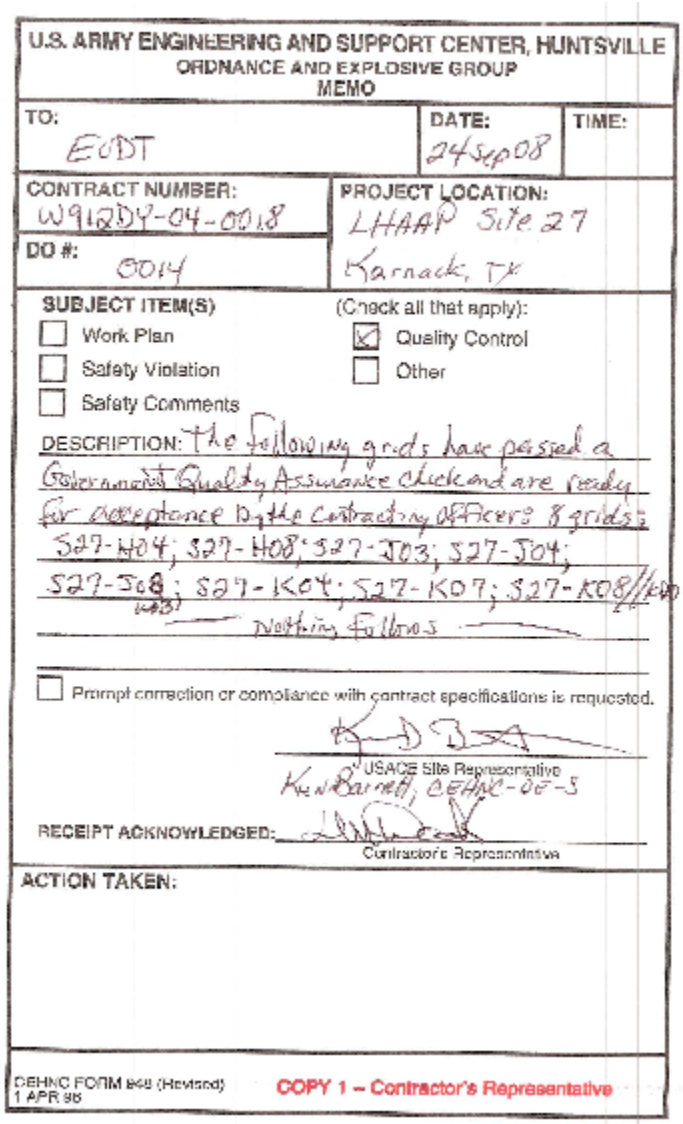
[ ] Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-06-S

RECEIPT ACKNOWLEDGED: Ian Hinote
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT
DATE: 24Sep08
TIME:

CONTRACT NUMBER: W912DY-04-0018
PROJECT LOCATION: LHAAP Site 27 Karnack, TX
DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [x] Quality Control
- [ ] Other

DESCRIPTION: The following grids have passed a Government Quality Assurance check and are ready for acceptance by the Contracting Officers: 8 grids: S27-H04; S27-H08; S27-J03; S27-J04; S27-J08; S27-K04; S27-K07; S27-K08//(K09 was) Nothing Follows

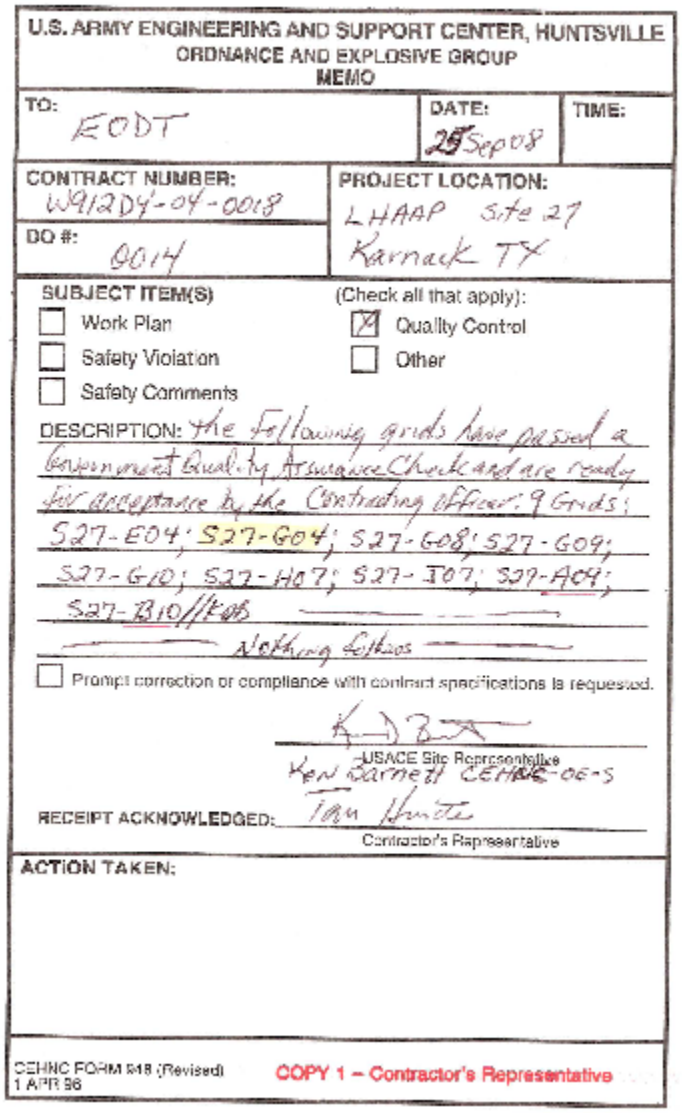
- [ ] Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Contractor's Representative

ACTION TAKEN:

CEHNC FORM 848 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT
DATE: 25Sep08
TIME:

CONTRACT NUMBER: W912DY-04-0018
PROJECT LOCATION: LHAAP Site 27 Karnack TX
DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [x] Quality Control
- [ ] Other

DESCRIPTION: The Following grids have passed a Government Quality Assurance Check and are ready for acceptance by the Contracting Officer: 9 Grids: S27-E04; S27-G04; S27-G08; S27-G09; S27-G10; S27-H07; S27-I07; S27-A04; S27-B10//K08 Nothing Follows

- [ ] Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Tan Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 848 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	25Sep08	

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D-0018	LHAAP Site 27
DO #: 0014	Karnack, TX

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The portions of the following grids, which are not in the Swamp Area, delineated by EODT Surveyor and verified by me, has passed a Government Quality Assurance check and are ready for acceptance by the Contracting Officer: 3 grids: S27-H09; S27-H10; S27-I09//KOB

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative
Ken Barnett, CEHNC-OE-S

RECEIPT ACKNOWLEDGED: Ian Whittle
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 548 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	10-29-08	1600

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D-0018	Longhorn AAP KARNAK, TX S-27
DO #: 0014	

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a Surface only govt QA INSP: A-04, B-04, C-04, D-04, A05, B-05, A-06, B-06, A-07, B-07, C-07, D-07, A-08, B-08, C-08, D-08, E-08, F-08 /—NOTHING FOLLOWS—/

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED:
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 548 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 10-30-08 | TIME: 1620

CONTRACT NUMBER: W912DY-04-D-0018 | PROJECT LOCATION: LHAAP SITE 27

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a govt QA inspection:
Surface - B-09, C-09, D-09, E-09, F-09, C-10, D-10, E-10, F-10
Sub-Surface - D-05
NOTHING FOLLOWS

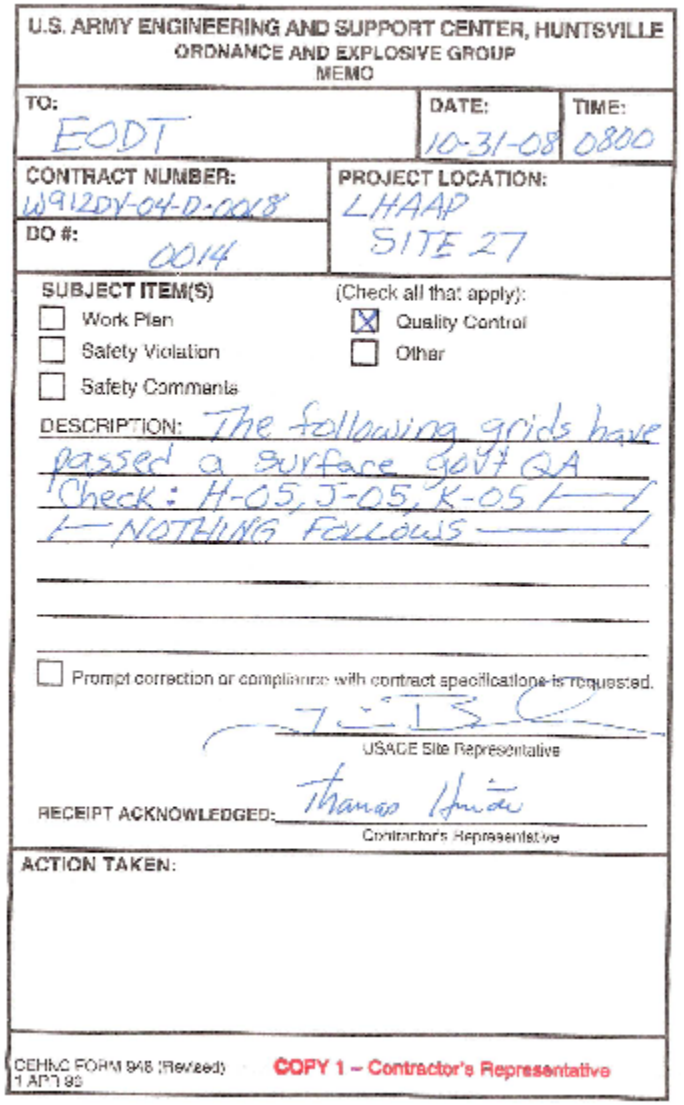
☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Thomas Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 98 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 10-31-08 | TIME: 0800

CONTRACT NUMBER: W912DY-04-D-0018 | PROJECT LOCATION: LHAAP SITE 27

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a surface govt QA Check: H-05, J-05, K-05
NOTHING FOLLOWS

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Thomas Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 98 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	11-3-08	0730

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D-0018	LHAAP KARNAK, TX
DO #: 0018	

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a govt surface QA inspection: H-09, H-10, J-09. Portions of these grids were previously QA'd by Ken Barnett but couldn't be completed due to Swampy Conditions. + NOTHING Follows +

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Contractor's Representative

ACTION TAKEN:

CEHNC FORM 843 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	11-6-08	1610

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D-0018	LHAAP SITE 27
DO #: 0014	

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grid has passed a govt QA INSPECTION: D-06 + NOTHING Follows +

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Tan Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 843 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	13-NOV-08	1600

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D-0018	LHAAP KARNACK, TX
DO #: 0014	

SUBJECT ITEM(S) (Check all that apply):

- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grid has passed a gov't QA inspection: E-05 — NOTHING FOLLOWS —

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Tom Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 95 COPY 1 – Contractor's Representative

U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO:	DATE:	TIME:
EODT	11-17-08	1530

CONTRACT NUMBER:	PROJECT LOCATION:
W912DY-04-D-0018	LHAAD KARNACK, TX
DO #: 0014	

SUBJECT ITEM(S) (Check all that apply):

- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grids have passed a gov't QA Inspection: E-06, E-07, F-06 — NOTHING FOLLOWS —

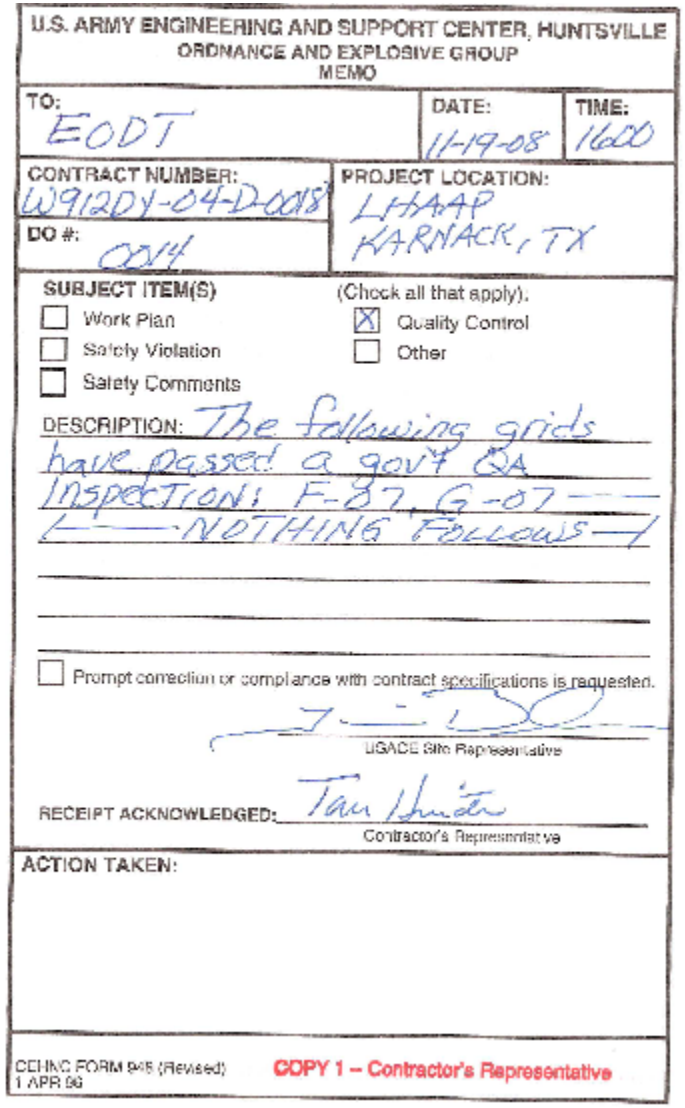
☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Tom Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 95 COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 11-19-08 | TIME: 1600

CONTRACT NUMBER: W912DY-04-D-0018 | PROJECT LOCATION: LHAAP KARNACK, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [X] Quality Control
- [ ] Other

DESCRIPTION: The following grids have passed a govt QA Inspection: F-87, G-07 — NOTHING FOLLOWS —

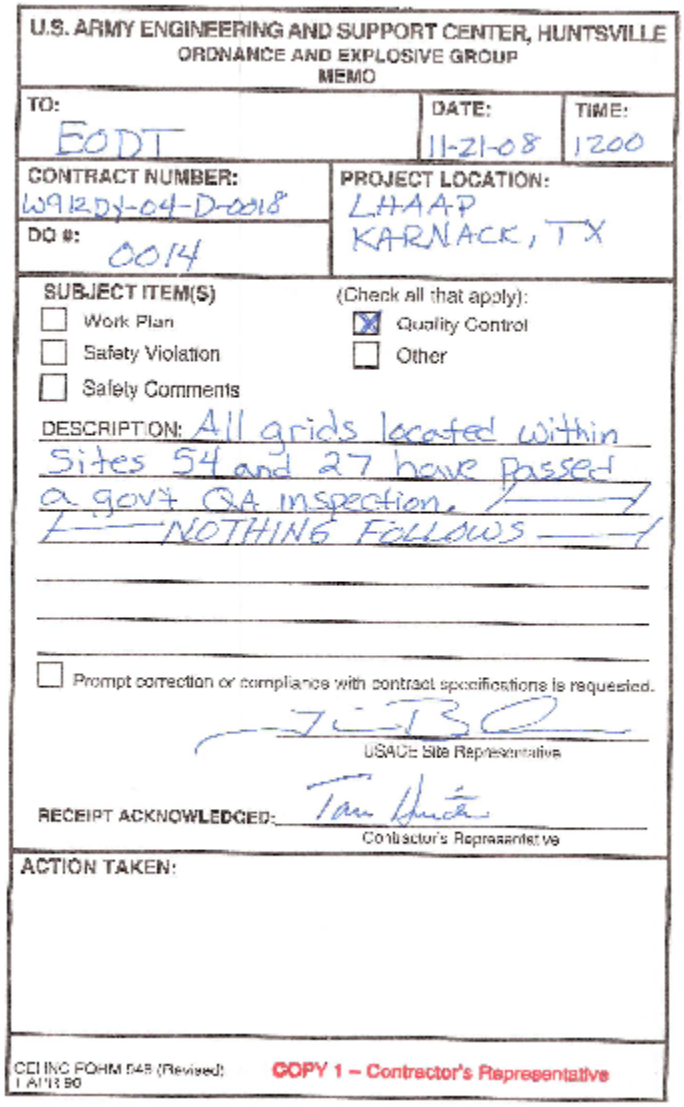
[ ] Prompt correction or compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Tam Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 945 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 11-21-08 | TIME: 1200

CONTRACT NUMBER: W912DY-04-D-0018 | PROJECT LOCATION: LHAAP KARNACK, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- [ ] Work Plan
- [ ] Safety Violation
- [ ] Safety Comments
- [X] Quality Control
- [ ] Other

DESCRIPTION: All grids located within Sites 54 and 27 have passed a govt QA inspection. — NOTHING FOLLOWS —

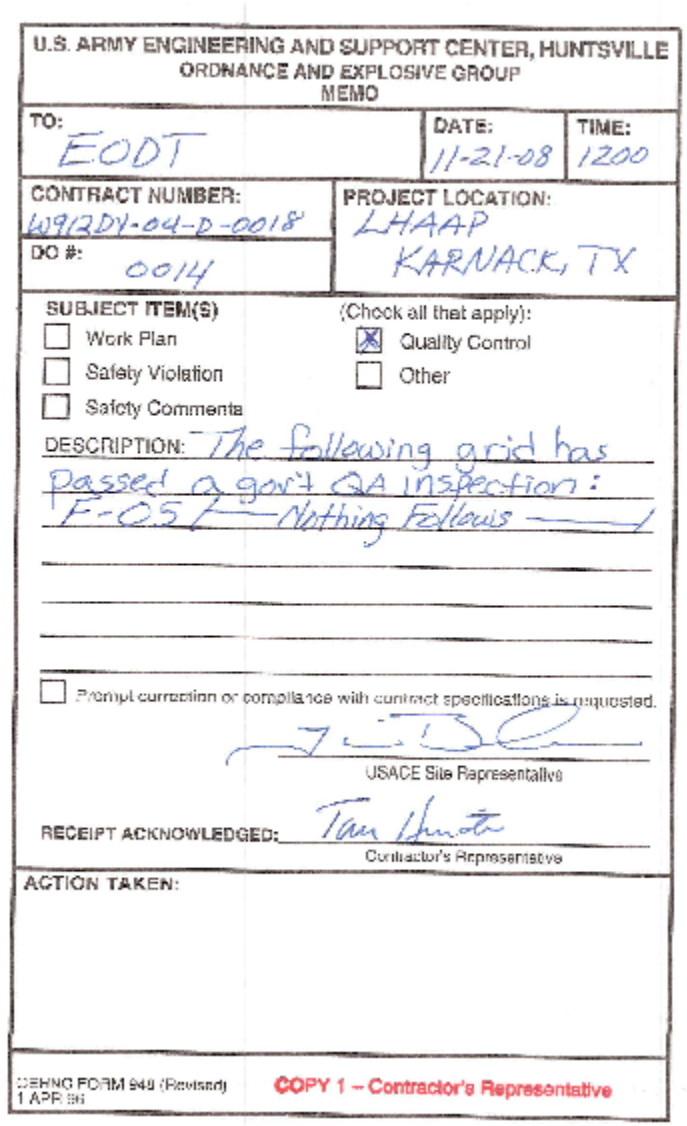
[ ] Prompt correction or compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Tam Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 945 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 11-21-08 | TIME: 1200

CONTRACT NUMBER: W912DY-04-D-0018
DO #: 0014
PROJECT LOCATION: LHAAP KARNACK, TX

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The following grid has passed a gov't QA inspection: F-05 /—Nothing Follows—/

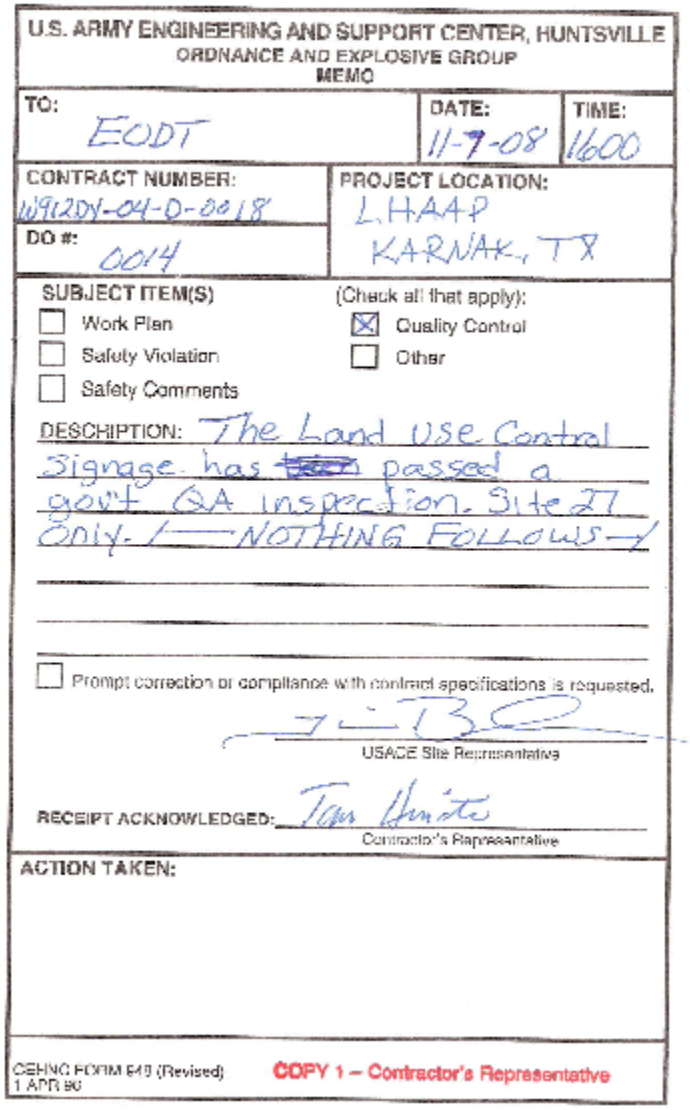
☐ Prompt correction of compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Tan Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 949 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 11-7-08 | TIME: 1600

CONTRACT NUMBER: W912DY-04-D-0018
DO #: 0014
PROJECT LOCATION: LHAAP KARNAK, TX

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The Land Use Control Signage has passed a gov't QA inspection. Site 27 Only. /—NOTHING FOLLOWS—/

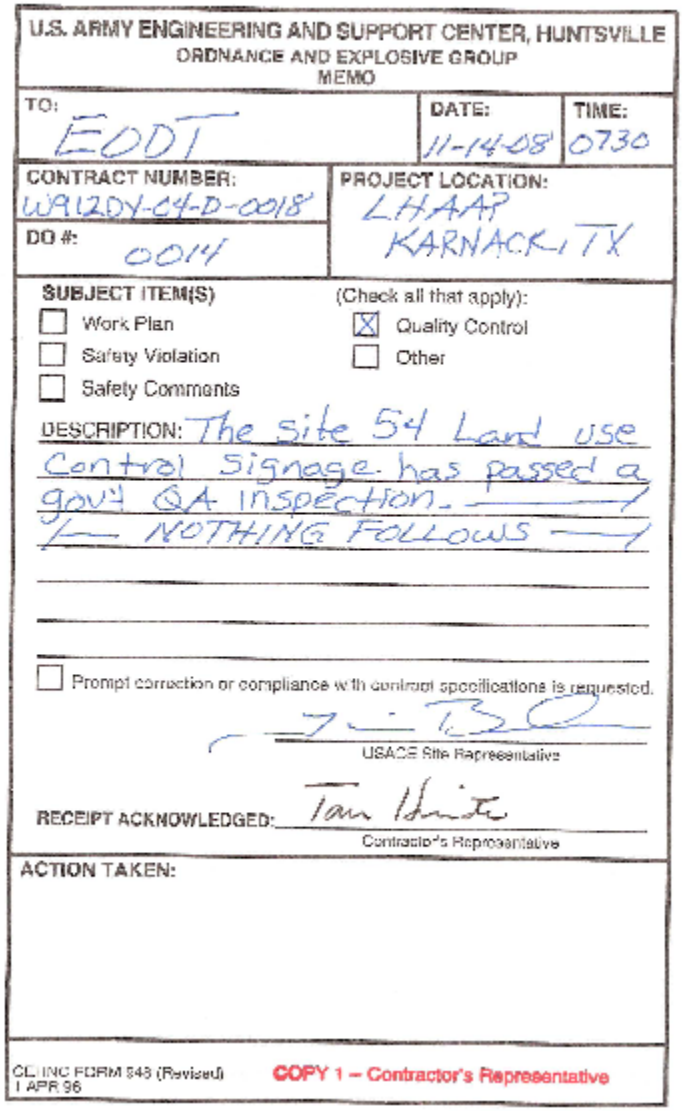
☐ Prompt correction of compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Tan Hunter
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 949 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 11-14-08 | TIME: 0730

CONTRACT NUMBER: W912DY-04-D-0018 | PROJECT LOCATION: LHAAP KARNACK, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: The site 54 Land use Control Signage has passed a gov't QA inspection. — NOTHING FOLLOWS —

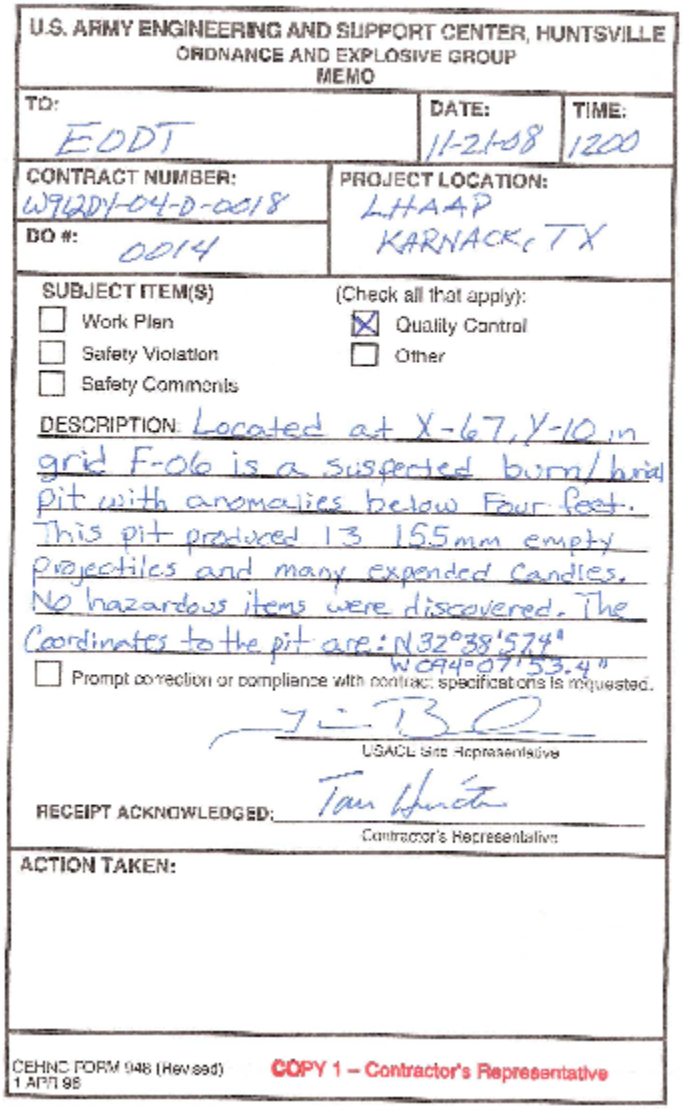
☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Tam Hinton
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative



U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
ORDNANCE AND EXPLOSIVE GROUP
MEMO

TO: EODT | DATE: 11-21-08 | TIME: 1200

CONTRACT NUMBER: W912DY-04-D-0018 | PROJECT LOCATION: LHAAP KARNACK, TX

DO #: 0014

SUBJECT ITEM(S) (Check all that apply):
- ☐ Work Plan
- ☐ Safety Violation
- ☐ Safety Comments
- ☒ Quality Control
- ☐ Other

DESCRIPTION: Located at X-67, Y-10 in grid F-06 is a suspected burn/burial pit with anomalies below Four feet. This pit produced 13 155mm empty projectiles and many expended candles. No hazardous items were discovered. The Coordinates to the pit are: N32°38'57.4" W094°07'53.4"

☐ Prompt correction or compliance with contract specifications is requested.

USACE Site Representative

RECEIPT ACKNOWLEDGED: Tam Hinton
Contractor's Representative

ACTION TAKEN:

CEHNC FORM 948 (Revised) 1 APR 96 — COPY 1 – Contractor's Representative

APPENDIX K
GEOGRAPHIC INFORMATION SYSTEM DATA

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

OBJECTID	Shape	LH_FWS__ID	AREA	Shape_Length	Shape_Area
1	ong binary data	0	0	98049.877373	366114207.89
2	ong binary data	0	0	2925.0261273	399719.04102

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
1	3298	6943	3321	6965
2	3299	6963	3300	6964

OBJECTID	Shape	NAME	Shape_Length
1	ong binary data	Harrison Bayou	26387.608668
2	ong binary data	Goose Prairie C	28999.236365
3	ong binary data	Central Creek	22038.353106
4	ong binary data	Goose Prairie C	56.622298034
5	ong binary data	Central Creek T	1388.363931
6	ong binary data		9967.3017276
7	ong binary data		2485.0986493

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
1	3313	6944	3319	6960
2	3298	6956	3313	6964
3	3303	6952	3317	6960
4	3298	6956	3298	6956
5	3313	6957	3313	6958
6	3303	6948	3309	6954
7	3303	6949	3305	6950

OBJECTID	Shape	AREA_	LH_FWS__I_	LH_FWS__ID	AREA	Shape_Length	Shape_Area
1	Long binary data	0	0	0	0	187765.53551	256632674.62
2	Long binary data	0	0	0	0	2925.0261273	399719.04102

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
1	3298	6943	3321	6965
2	3299	6963	3300	6964

grid_area

GRID_ID	SITAOC_ID	SITE_ID	GRIDDESCRI	GRIDTYPE	PERIME	AREA	SLOPE	TERRAIN	CULTURALEF	VEGETATION	OTHER_COND	NARRATIVE	EASTING	NORTHING
S27-A03				SURFACE	167	1176.01	0					Seed: X-170, Y-		
S27-A04				SURFACE	215.3	2823.52	0					Seed: X-160', Y-		
S27-A05				SURFACE	238.1	3591.77	0					Seed: X-158', Y-		
S27-A06				SURFACE	238.1	3592.83	0					Seed: X-181', Y-		
S27-A07				SURFACE	215.4	2826.77	0					Seed: X-118', Y-		
S27-A08				SURFACE	167.3	1181.89	0					Seed: X-148', Y-		
S27-A09				SURFACE	0.188	0.00146	0							
S27-B02				SURFACE	208.1	2028.06	0					Seed: X-150, Y-		
S27-B03				SURFACE	243.8	3716.12	0					Seed: X-190', Y-		
S27-B04				SURFACE	243.8	3716.12	0					Seed: X-67, Y-3		
S27-B05				SURFACE	243.8	3655.88	0					Seed: X-22', Y-4		
S27-B06				SURFACE	243.8	1424.21	0					Seed: X-5', Y-27		
S27-B07				SURFACE	243.8	905.966	0					Seed: X-65', Y-4		
S27-B08				SURFACE	243.8	3687.17	0					Seed: X-119', Y-		
S27-B09				SURFACE	208.5	2038.31	0					Seed: X-145', Y-		
S27-B10				SURFACE	0.25	0.00262	0							
S27-C01				SURFACE	166.7	1171.47	0					Seed: X-195', Y-		
S27-C02				SURFACE	243.8	3716.11	0					Seed: X-30', Y-1		
S27-C03				SURFACE	243.8	3716.12	0					Seed: X-60', Y-1		
S27-C04				SURFACE	243.8	3716.12	0					Seed: X-158', Y-		
S27-C05				OBOD	243.8	1878.89	0					Seed: X-199, Y-		
S27-C06				OBOD	800	3716.12	0					Seed: X-196', Y-		
S27-C07				SURFACE	243.8	61.5880	0					Seed: X-20', Y-2		
S27-C08				SURFACE	243.8	3595.24	0					Seed: X-20', Y-1		
S27-C09				SURFACE	243.8	3716.12	0					Seed: X-10', Y-2		
S27-C10				SURFACE	167.3	1181.79	0					Seed: X-34, Y-1		
S27-D01				SURFACE	215.1	2816.2	0					Seed: X-185, Y-		
S27-D02				SURFACE	243.8	3716.12	0					Seed: X-160, Y-		
S27-D03				SURFACE	243.8	3716.12	0					Seed: X-25', Y-1		
S27-D04				SURFACE	243.8	3382.39	0							
S27-D05				OBOD	243.8	195.029	0					Seed: X-0', Y-19		
S27-D06				OBOD	800	3716.12	0							
S27-D07				SURFACE	243.8	1623.53	0					Seed: X-24', Y-1		
S27-D08				SURFACE	243.8	3716.12	0					Seed: X-192', Y-		
S27-D09				SURFACE	243.8	3716.12	0					Seed: X-172', Y-		
S27-D10				SURFACE	215.4	2826.44	0					Seed: X-28', Y-1		
S27-E01				SURFACE	237.8	3582.15	0					Seed: X-50', Y-1		
S27-E02				SURFACE	243.8	3716.12	0					Seed: X-45', Y-1		
S27-E03				SURFACE	243.8	3716.12	0					Seed: X-185, Y-		
S27-E04				SURFACE	243.8	3506.98	0					Seed: X-150, Y-		
S27-E05				OBOD	243.8	1420.47	0							
S27-E06				OBOD	243.8	2371.81	0							

GRID_ID	TEAM_LEAD	TOTAL_ANOM	GRID_SURVY	SURF_SWEEP	GEOPHY_OPS	OE_REMOVAL	DIGITAL_QC	ANALOG_QC	DIGITAL_QA	ANALOG_QA	ANOM_REMVD	GRID_STATU	TOTAL_OE	ANOM_CNT
S27-A03	Team 2		8/28/2008					9/22/2008		9/22/2008		QA	0	
S27-A04	Team 1		8/28/2008					10/1/2008		10/29/2008		QA	0	
S27-A05	Team 1		8/28/2008					10/1/2008		10/29/2008		QA	0	
S27-A06	Team 1		8/28/2008					10/1/2008		10/29/2008		QA	0	
S27-A07	Team 1		8/28/2008					9/30/2008		10/29/2008		QA	0	
S27-A08	Team 1		8/28/2008					9/30/2008		10/29/2008		QA	0	
S27-A09	Team 1		8/28/2008					9/25/2008		9/25/2008		QA	0	
S27-B02	Team 2		8/28/2008					9/18/2008		9/18/2008		QA	1	
S27-B03	Team 2		8/28/2008					9/22/2008		9/22/2008		QA	0	
S27-B04	Team 1		8/27/2008					10/1/2008		10/29/2008		QA	1	
S27-B05	Team 1		8/25/2008					10/1/2008		10/29/2008		QA	4	
S27-B06	Team 1		8/25/2008					10/3/2008		10/29/2008		QA	0	
S27-B07	Team 1		8/25/2008					10/3/2008		10/29/2008		QA	1	
S27-B08	Team 1		9/8/2008					9/30/2008		10/29/2008		QA	0	
S27-B09	Team 1		8/28/2008					9/29/2008		10/30/2008		QA	0	
S27-B10	Team 1		8/28/2008					9/25/2008		9/25/2008		QA	0	
S27-C01	Team 2		8/28/2008					9/16/2008		9/16/2008		QA	0	
S27-C02	Team 2		8/28/2008					9/18/2008		9/18/2008		QA	1	
S27-C03	Team 2		8/27/2008					9/22/2008		9/22/2008		QA	1	
S27-C04	Team 1		8/27/2008					10/2/2008		10/29/2008		QA	1	
S27-C05	Team 1		8/25/2008					10/23/2008		10/29/2008		QA	31	2325
S27-C06	Team 1		8/26/2008					10/23/2008		10/29/2008		QA	4	6800
S27-C07	Team 1		8/26/2008					10/3/2008		10/29/2008		QA	1	
S27-C08	Team 1		8/26/2008					9/30/2008		10/29/2008		QA	1	
S27-C09	Team 1		9/8/2008					9/29/2008		10/30/2008		QA	0	
S27-C10	Team 1		8/28/2008					9/29/2008		10/30/2008		QA	0	
S27-D01	Team 2		8/28/2008					9/16/2008		9/16/2008		QA	0	
S27-D02	Team 2		8/27/2008					9/18/2008		9/18/2008		QA	0	
S27-D03	Team 2		8/27/2008					9/22/2008		9/22/2008		QA	2	
S27-D04	Team 1		8/27/2008					10/2/2008		10/29/2008		QA	7	
S27-D05	Team 1		8/26/2008					10/30/2008		10/30/2008		QA	68	8564
S27-D06	Team 1		8/26/2008					11/5/2008		11/6/2008		QA	21	4332
S27-D07	Team 1		8/26/2008					10/3/2008		10/29/2008		QA	4	
S27-D08	Team 1		8/26/2008					9/30/2008		10/29/2008		QA	2	
S27-D09	Team 1		9/8/2008					9/29/2008		10/29/2008		QA	3	
S27-D10	Team 1		9/8/2008					9/29/2008		10/30/2008		QA	0	
S27-E01	Team 2		8/28/2008					9/16/2008		9/16/2008		QA	0	
S27-E02	Team 2		8/28/2008					9/18/2008		9/18/2008		QA	0	
S27-E03	Team 2		8/28/2008					9/23/2008		9/23/2008		QA	7	
S27-E04	Team 2		8/28/2008					9/25/2008		9/25/2008		QA	35	
S27-E05	Team 1		8/28/2008					11/14/2008		11/17/2008		QA	36	5213
S27-E06	Team 1		8/28/2008					11/14/2008		11/17/2008		QA	31	4517

GRID_ID	OE_CNT	OE_SCRP_WT	NOE_SCP_WT	SOIL_TYPE	DATE_ENTER	GRID_COMPL	VEG_COMMEN	VEG_REMOVA	GEO_REACQ	GEO_CLEAR	QC_RESWEEP	QA_RESWEEP	QC_PASS	QA_PASS
S27-A03		5	0	Sand	9/18/2008			8/27/2008					T	T
S27-A04		20	0	Sand	9/30/2008			8/27/2008					T	T
S27-A05		25	30	Sand	9/30/2008			8/27/2008					T	T
S27-A06		22	70	Sand	9/30/2008			8/27/2008					T	T
S27-A07		65	5	Sand	9/29/2008			8/27/2008					T	T
S27-A08		15	5	Sand	9/29/2008			8/27/2008					T	T
S27-A09		0	0	Sand	9/25/2008			8/27/2008					T	T
S27-B02		20	0	Sand	9/17/2008			8/27/2008					T	T
S27-B03		20	1	Sand	9/18/2008			8/27/2008					T	T
S27-B04		15	5	Sand	9/30/2008			8/26/2008					T	T
S27-B05		25	0	Sand	9/30/2008			8/24/2008					T	T
S27-B06		85	0	Sand	10/2/2008			8/24/2008					T	T
S27-B07		305	10	Sand	10/2/2008			8/24/2008					T	T
S27-B08		45	0	Sand	9/29/2008			9/7/2008					T	T
S27-B09		5	0	Sand	9/25/2008			8/27/2008					T	T
S27-B10		0	0	Sand	9/25/2008			8/27/2008					T	T
S27-C01		5	0	Sand	9/16/2008			8/27/2008					T	T
S27-C02		50	0	Sand	9/17/2008			8/27/2008					T	T
S27-C03		20	1	Sand	9/18/2008			8/26/2008					T	T
S27-C04		10	0	Sand	10/1/2008			8/26/2008					T	T
S27-C05		370	0	Sand	10/22/2008			8/24/2008					T	T
S27-C06		690	15	Sand	10/20/2008			8/25/2008					T	T
S27-C07		65	0	Sand	10/2/2008			8/25/2008					T	T
S27-C08		55	5	Sand	9/29/2008			8/25/2008					T	T
S27-C09		7	0	Sand	9/25/2008			9/7/2008					T	T
S27-C10		3	0	Sand	9/25/2008			8/27/2008					T	T
S27-D01		20	0	Sand	9/16/2008			8/27/2008					T	T
S27-D02		100	0	Sand	9/17/2008			8/26/2008					T	T
S27-D03		20	1	Sand	9/18/2008			8/26/2008					T	T
S27-D04		55	0	Sand	10/2/2008			8/26/2008					T	
S27-D05		1170	15	Sand	10/30/2008			8/25/2008					T	T
S27-D06		1030	65	Sand	11/6/2008			8/25/2008					T	T
S27-D07		55	20	Sand	10/2/2008			8/25/2008					T	T
S27-D08		25	0	Sand	9/29/2008			8/25/2008					T	T
S27-D09		5	0	Sand	9/25/2008			9/7/2008					T	T
S27-D10		2	1	Sand	9/25/2008			9/7/2008					T	T
S27-E01		0	0	Sand	9/16/2008			8/27/2008					T	T
S27-E02		150	0	Sand	9/17/2008			8/27/2008					T	T
S27-E03		200	0	Sand	9/22/2008			8/27/2008					T	T
S27-E04		150	0	Sand	9/24/2008			8/27/2008					T	T
S27-E05		825	190	Sand	11/10/2008			8/27/2008					T	T
S27-E06		850	20	Sand	11/10/2008			8/27/2008					T	T

GRID_ID	SYM_ID	ACRES	GRID_SEG	GRID_SEC	GRID_METHO	MULTI_METH	GRID_CNT	SHAPE_LENG	GRID_SEED	TODAY_DATE	Shape_Length	Shape_Area	SURFACE_OE	SUBSURF_OE
S27-A03		0.2905975681						0	T		166.96710114	1176.0113389		
S27-A04		0.6977039951						0	T		215.27968944	2823.5191876		
S27-A05		0.887541869						0	T		238.08324009	3591.7688796		
S27-A06		0.8878032866						0	T		238.14534022	3592.8268037		
S27-A07		0.6985080193						0	T		215.44476148	2826.7729709		
S27-A08		0.2920511587						0	T		167.30492563	1181.8938347		
S27-A09		3.609300E-07						0	T		0.1875285478	0.0014606379		
S27-B02		0.5011424724						0	T		208.11149023	2028.0597453		
S27-B03		0.9182693570						0	T		243.79915087	3716.1191095		
S27-B04		0.9182699726						0	T		243.84000001	3716.1216004		
S27-B05		0.9182699726						0	T		243.84000001	3716.1216004		
S27-B06		0.9182699726						0	T		243.84000001	3716.1216004		
S27-B07		0.9182681774						0	T		243.84000002	3716.1143356		
S27-B08		0.9182703051						0	T		243.84000001	3716.1229463		
S27-B09		0.5036742277						0	T		208.467055	2038.3054364		
S27-B10		6.462893E-07						0	T		0.2499596051	0.0026154507		
S27-C01		0.2894742586						0	T		166.71653289	1171.4654486		
S27-C02		0.9182675171						0	T		243.75873952	3716.1116634		
S27-C03		0.9182699726						0	T		243.84000002	3716.1216006		
S27-C04		0.9182699726						0	T		243.84000002	3716.1216006		
S27-C05		0.9182699726						0	T		243.84000002	3716.1216006	0	31
S27-C06		0.9182699726						0	T		243.84000002	3716.1216006	0	4
S27-C07		0.9182699726						0	T		243.84000002	3716.1216007		
S27-C08		0.9182696400						0	T		243.84000002	3716.1202546		
S27-C09		0.9182699726						0	T		243.84000002	3716.1216006		
S27-C10		0.2920246673						0	T		167.25296961	1181.7866274		
S27-D01		0.6958950534						0	T		215.09904502	2816.198631		
S27-D02		0.9182699726						0	T		243.84000001	3716.1216004		
S27-D03		0.9182699726						0	T		243.84000001	3716.1216004		
S27-D04		0.9182685100						0			243.84000001	3716.1156817		
S27-D05		0.9182717677						0	T		243.84000001	3716.1288651	3	65
S27-D06		0.9182699726						0	T		243.84000001	3716.1216004	0	21
S27-D07		0.9182699726						0	T		243.84000002	3716.1216005		
S27-D08		0.9182699726						0	T		243.84000001	3716.1216004		
S27-D09		0.9182699726						0	T		243.84000001	3716.1216004		
S27-D10		0.6984264405						0	T		215.3645653	2826.442832		
S27-E01		0.8851658641						0	T		237.80407782	3582.1534907		
S27-E02		0.9182699726						0	T		243.84000002	3716.1216005		
S27-E03		0.9182699726						0	T		243.84000002	3716.1216005		
S27-E04		0.9182678449						0	T		243.84000002	3716.1129899		
S27-E05		0.9182699726						0			243.84000002	3716.1216004	3	33
S27-E06		0.9182717677						0			243.84000002	3716.1288653	0	31

grid_area

GRID_ID	SITAOC_ID	SITE_ID	GRIDDESCRI	GRIDTYPE	PERIME	AREA	SLOPE	TERRAIN	CULTURALEF	VEGETATION	OTHER_COND	NARRATIVE	EASTING	NORTHING
S27-E07				OBOD	243.8	3711.5	0							
S27-E08				SURFACE	243.8	3716.12	0					Seed: X-190', Y-		
S27-E09				SURFACE	243.8	3716.12	0					Seed: X-11', Y-1		
S27-E10				SURFACE	238.1	3592.41	0					Seed: X-174', Y-		
S27-F01				SURFACE	237.7	3581.07	0					Seed: X-180', Y-		
S27-F02				SURFACE	243.8	3716.12	0					Seed: X-44', Y-3		
S27-F03				SURFACE	243.8	3716.12	0					Seed: X-40, Y-1		
S27-F04				OBOD	243.8	3716.12	0					Seed: X-55', Y-4		
S27-F05				OBOD	243.8	3716.12	0							
S27-F06				OBOD	243.8	3716.12	0					Seed: X-193', Y-		
S27-F07				OBOD	243.8	3716.12	0							
S27-F08				SURFACE	243.8	3716.12	0					Seed: X-100', Y-		
S27-F09				SURFACE	243.8	3716.12	0					Seed: X-161', Y-		
S27-F10				SURFACE	238.1	3591.28	0					Seed: X-174', Y-		
S27-G01				SURFACE	214.9	2812.65	0					Seed: X-49' ,Y-1		
S27-G02				SURFACE	243.8	3716.12	0					Seed: X-40', Y-3		
S27-G03				SURFACE	243.8	3716.12	0					Seed: X-40', Y-1		
S27-G04				OBOD	243.8	3716.12	0					Seed: X-120', Y-		
S27-G05				OBOD	243.8	3716.12	0					Seed: X-11', Y-1		
S27-G06				OBOD	243.8	3716.12	0					Seed: X-30', Y-6		
S27-G07				OBOD	243.8	3716.12	0							
S27-G08				SURFACE	243.8	3716.12	0					Seed: X-167', Y-		
S27-G09				SURFACE	243.8	3716.12	0					Seed: X-16', Y-1		
S27-G10				SURFACE	215.3	2822.91	0					Seed: X-25', Y-		
S27-H01				SURFACE	166.3	1165.05	0					Seed: X-185', Y-		
S27-H02				SURFACE	243.7	3716.08	0					Seed: X-140', Y-		
S27-H03				SURFACE	243.8	3716.12	0					Seed: X-60', Y-8		
S27-H04				SURFACE	243.8	3716.12	0					Seed: X-35', Y-1		
S27-H05				SURFACE	243.8	3716.12	0					Seed: X-193', Y-		
S27-H06				SURFACE	243.8	3716.12	0					Seed: X-181', Y-		
S27-H07				SURFACE	243.8	3716.12	0					Seed: X-26', Y-1		
S27-H08				SURFACE	243.8	3716.12	0					Seed: X-3', Y-27		
S27-H09				SURFACE	243.8	3716.12	0					Seed: X-12', Y-1		
S27-H10				SURFACE	166.9	1175.19	0					Seed: X-16', Y-2		
S27-J02				SURFACE	207.6	2016.90	0					Seed: X-79', Y-7		
S27-J03				SURFACE	243.7	3716.08	0					Seed: X-185', Y-		
S27-J04				SURFACE	243.8	3716.12	0					Seed: X-20', Y-4		
S27-J05				SURFACE	243.8	3716.12	0					Seed: X-23' ,Y-1		
S27-J06				SURFACE	243.8	3716.12	0					Seed: X-8', Y-10		
S27-J07				SURFACE	243.8	3716.12	0					Seed: X-185', Y-		
S27-J08				SURFACE	243.8	3716.11	0					Seed: X-191', Y-		
S27-J09				SURFACE	208.1	2027.12	0					Seed: X-8', Y-8'		

GRID_ID	TEAM_LEAD	TOTAL_ANOM	GRID_SURVY	SURF_SWEEP	GEOPHY_OPS	OE_REMOVAL	DIGITAL_QC	ANALOG_QC	DIGITAL_QA	ANALOG_QA	ANOM_REMVD	GRID_STATU	TOTAL_OE	ANOM_CNT
S27-E07	Team 1		9/4/2008					11/14/2008		11/17/2008		QA	14	2483
S27-E08	Team 1		9/8/2008					9/30/2008		10/29/2008		QA	1	
S27-E09	Team 1		9/8/2008					9/30/2008		10/30/2008		QA	1	
S27-E10	Team 1		9/8/2008					9/29/2008		10/30/2008		QA	0	
S27-F01	Team 2		8/28/2008					9/16/2008		9/16/2008		QA	0	
S27-F02	Team 2		8/28/2008					9/18/2008		9/18/2008		QA	0	
S27-F03	Team 2		9/3/2008					9/23/2008		9/23/2008		QA	1	
S27-F04	Team 1		8/28/2008					10/20/2008		10/29/2008		QA	20	1862
S27-F05	Team 1		8/28/2008					11/21/2008		11/21/2008		QA	18	2795
S27-F06	Team 1		9/9/2008					11/12/2008		11/17/2008		QA	18	2135
S27-F07	Team 1		9/5/2008					11/18/2008		11/19/2008		QA	4	944
S27-F08	Team 1		9/8/2008					9/29/2008		10/29/2008		QA	2	
S27-F09	Team 1		9/8/2008					9/29/2008		10/30/2008		QA	1	
S27-F10	Team 1		9/8/2008					9/29/2008		10/30/2008		QA	0	
S27-G01	Team 2		8/28/2008					9/17/2008		9/17/2008		QA	0	
S27-G02	Team 2		9/5/2008					9/17/2008		9/17/2008		QA	1	
S27-G03	Team 2		9/3/2008					9/23/2008		9/23/2008		QA	0	
S27-G04	Team 1		9/5/2008					10/10/2008		10/29/2008		QA	2	545
S27-G05	Team 1		9/4/2008					10/10/2008		10/29/2008		QA	14	1419
S27-G06	Team 1		9/4/2008					10/10/2008		10/29/2008		QA	8	1011
S27-G07	Team 1		9/4/2008					11/19/2008		11/19/2008		QA	5	1280
S27-G08	Team 1		9/8/2008					9/25/2008		9/25/2008		QA	2	
S27-G09	Team 1		9/8/2008					9/25/2008		9/25/2008		QA	0	
S27-G10	Team 1		8/28/2008					9/25/2008		9/25/2008		QA	0	
S27-H01	Team 2		8/28/2008					9/17/2008		9/17/2008		QA	0	
S27-H02	Team 2		9/5/2008					9/17/2008		9/17/2008		QA	0	
S27-H03	Team 2		9/3/2008					9/23/2008		9/23/2008		QA	1	
S27-H04	Team 2		9/5/2008					9/24/2008		9/24/2008		QA	0	
S27-H05	Team 1		9/4/2008					10/2/2008		10/31/2008		QA	1	
S27-H06	Team 1		9/9/2008					9/23/2008		9/23/2008		QA	1	
S27-H07	Team 1		9/8/2008					9/25/2008		9/25/2008		QA	2	
S27-H08	Team 1		9/8/2008					9/24/2008		9/24/2008		QA	0	
S27-H09	Team 1		9/8/2008					9/24/2008		9/24/2008		QA	0	
S27-H10	Team 1		9/8/2008					9/24/2008		9/24/2008		QA	0	
S27-J02	Team 2		8/28/2008					9/17/2008		9/17/2008		QA	0	
S27-J03	Team 2		9/3/2008					9/24/2008		9/24/2008		QA	0	
S27-J04	Team 2		9/5/2008					9/24/2008		9/24/2008		QA	0	
S27-J05	Team 1		9/9/2008					10/2/2008		10/31/2008		QA	0	
S27-J06	Team 1		9/8/2008					9/23/2008		9/23/2008		QA	0	
S27-J07	Team 1		9/9/2008					9/25/2008		9/25/2008		QA	0	
S27-J08	Team 1		9/8/2008					9/24/2008		9/24/2008		QA	0	
S27-J09	Team 1		9/8/2008					9/24/2008		9/24/2008		QA	0	

GRID_ID	OE_CNT	OE_SCRP_WT	NOE_SCP_WT	SOIL_TYPE	DATE_ENTER	GRID_COMPL	VEG_COMMEN	VEG_REMOVA	GEO_REACQ	GEO_CLEAR	QC_RESWEEP	QA_RESWEEP	QC_PASS	QA_PASS
S27-E07		735	2	Sand	11/10/2008			9/3/2008					T	T
S27-E08		20	0	Sand	9/29/2008			9/7/2008					T	T
S27-E09		35	0	Sand	9/29/2008			9/7/2008					T	T
S27-E10		10	0	Sand	9/25/2008			9/7/2008					T	T
S27-F01		60	0	Sand	9/16/2008			8/27/2008					T	T
S27-F02		200	0	Sand	9/17/2008			8/27/2008					T	T
S27-F03		200	0	Sand	9/22/2008			9/2/2008					T	T
S27-F04		1080	120	Sand	10/14/2008			8/27/2008					T	T
S27-F05		2340	900	Sand	11/20/2008			8/27/2008					T	T
S27-F06		1280	395	Sand	9/18/2008			9/8/2008					T	T
S27-F07		647	0	Sand	11/17/2008			9/4/2008					T	T
S27-F08		65	0	Sand	9/25/2008			9/7/2008					T	T
S27-F09		25	0	Sand	9/25/2008			9/7/2008					T	T
S27-F10		10	0	Sand	9/25/2008			9/7/2008					T	T
S27-G01		200	0	Sand	9/17/2008			8/27/2008					T	T
S27-G02		150	0	Sand	9/7/2008			9/4/2008					T	T
S27-G03		400	0	Sand	9/22/2008			9/2/2008					T	T
S27-G04		555	0	Sand	10/10/2008			9/4/2008					T	T
S27-G05		1160	0	Sand	10/10/2008			9/3/2008					T	T
S27-G06		870	0	Sand	10/9/2008			9/3/2008					T	T
S27-G07		1560	0	Sand	11/18/2008			9/3/2008					T	T
S27-G08		185	0	Sand	9/24/2008			9/7/2008					T	T
S27-G09		165	0	Sand	9/24/2008			9/7/2008					T	T
S27-G10		0	0	Sand	9/24/2008			8/27/2008					T	T
S27-H01		20	0	Sand	9/17/2008			8/27/2008					T	T
S27-H02		450	0	Sand	9/17/2008			9/4/2008					T	T
S27-H03		150	5	Sand	9/22/2008			9/2/2008					T	T
S27-H04		200	0	Sand	9/23/2008			9/4/2008					T	T
S27-H05		185	0	Sand	10/1/2008			9/3/2008					T	T
S27-H06		185	0	Sand	9/22/2008			9/8/2008					T	T
S27-H07		145	0	Sand	9/24/2008			9/7/2008					T	T
S27-H08		310	0	Sand	9/23/2008			9/7/2008					T	T
S27-H09		75	0	Sand	9/23/2008			9/7/2008					T	T
S27-H10		15	0	Sand	9/23/2008			9/7/2008					T	T
S27-J02		100	0	Sand	9/17/2008			8/27/2008					T	T
S27-J03		75	0	Sand	9/22/2008			9/2/2008					T	T
S27-J04		250	0	Sand	9/23/2008			9/4/2008					T	T
S27-J05		185	0	Sand	10/1/2008			9/8/2008					T	T
S27-J06		30	0	Sand	9/22/2008			9/7/2008					T	T
S27-J07		90	0	Sand	9/24/2008			9/8/2008					T	T
S27-J08		235	0	Sand	9/23/2008			9/7/2008					T	T
S27-J09		35	0	Sand	9/23/2008			9/7/2008					T	T

GRID_ID	SYM_ID	ACRES	GRID_SEG	GRID_SEC	GRID_METHO	MULTI_METH	GRID_CNT	SHAPE_LENG	GRID_SEED	TODAY_DATE	Shape_Length	Shape_Area	SURFACE_OE	SUBSURF_OE
S27-E07		0.9182699726						0			243.84000002	3716.1216006	0	14
S27-E08		0.9182699726						0	T		243.84000002	3716.1216005		
S27-E09		0.9182699726						0	T		243.84000002	3716.1216005		
S27-E10		0.8877000259						0	T		238.10789531	3592.4089206		
S27-F01		0.8848981036						0	T		237.73886412	3581.0698979		
S27-F02		0.9182699726						0	T		243.84000001	3716.1216004		
S27-F03		0.9182699726						0	T		243.84000001	3716.1216004		
S27-F04		0.9182699726						0	T		243.84000001	3716.1216004	0	20
S27-F05		0.9182699726						0			243.84000001	3716.1216004	0	18
S27-F06		0.9182699726						0	T		243.84000001	3716.1216004	6	12
S27-F07		0.9182699726						0			243.84000002	3716.1216006	0	4
S27-F08		0.9182699726						0	T		243.84000001	3716.1216004		
S27-F09		0.9182699726						0	T		243.84000001	3716.1216004		
S27-F10		0.8874205530						0	T		238.10497301	3591.2779295		
S27-G01		0.6950174342						0	T		214.92349394	2812.6470177		
S27-G02		0.9182699726						0	T		243.84000001	3716.1216004		
S27-G03		0.9182699726						0	T		243.84000001	3716.1216004		
S27-G04		0.9182699726						0	T		243.84000001	3716.1216004	1	1
S27-G05		0.9182699726						0	T		243.84000001	3716.1216004	0	14
S27-G06		0.9182699726						0	T		243.84000001	3716.1216004	4	4
S27-G07		0.9182699726						0			243.84000002	3716.1216005	0	5
S27-G08		0.9182699726						0	T		243.84000001	3716.1216004		
S27-G09		0.9182699726						0	T		243.84000001	3716.1216004		
S27-G10		0.6975531931						0	T		215.32803639	2822.9089112		
S27-H01		0.2878893367						0	T		166.25266069	1165.0514715		
S27-H02		0.9182603696						0	T		243.67865556	3716.0827383		
S27-H03		0.9182699726						0	T		243.84000002	3716.1216005		
S27-H04		0.9182699726						0	T		243.84000002	3716.1216005		
S27-H05		0.9182699726						0	T		243.84000002	3716.1216005		
S27-H06		0.9182699726						0	T		243.84000002	3716.1216005		
S27-H07		0.9182699726						0	T		243.84000002	3716.1216006		
S27-H08		0.9182699726						0	T		243.84000002	3716.1216005		
S27-H09		0.2851835183						0	T		243.77998698	3716.1208198		
S27-H10		0.0986537974						0	T		166.92702339	1175.1846972		
S27-J02		0.4983849594						0	T		207.56174506	2016.9004413		
S27-J03		0.9182587324						0	T		243.666136	3716.0761129		
S27-J04		0.9182699726						0	T		243.84000001	3716.1216004		
S27-J05		0.9182699726						0	T		243.84000001	3716.1216004		
S27-J06		0.9182699726						0	T		243.84000001	3716.1216004		
S27-J07		0.9182699726						0	T		243.84000002	3716.1216005		
S27-J08		0.9182677463						0	T		243.76231715	3716.112591		
S27-J09		0.2694628718						0	T		208.06978521	2027.1217234		

grid_area

GRID_ID	SITAOC_ID	SITE_ID	GRIDDESCRI	GRIDTYPE	PERIME	AREA	SLOPE	TERRAIN	CULTURALEF	VEGETATION	OTHER_COND	NARRATIVE	EASTING	NORTHING
S27-K03				SURFACE	166.2	1164.78	0					Seed: X-190', Y-		
S27-K04				SURFACE	215	2812.33	0					Seed: X-165', Y-		
S27-K05				SURFACE	237.8	3580.60	0					Seed: X-26', Y-1		
S27-K06				SURFACE	237.8	3581.68	0					Seed: X-30', Y-8		
S27-K07				SURFACE	215.0	2815.57	0					Seed: X-20', Y-1		
S27-K08				SURFACE	166.7	1170.8	0					Seed: X-36', Y-		
S54-A03					139.9	817.828	0					Seed: X-102', Y-		
S54-A04					207.6	2566.36	0					Seed: X-118', Y-		
S54-A05					235.0	3486.33	0					Seed: X-117', Y-		
S54-A06					240.4	3664.42	0					Seed: X-115', Y-		
S54-A07					224.1	3122.07	0					Seed: X-48', Y-1		
S54-A08					184.8	1791.44	0					Seed: X-177', y-		
S54-A09					57.92	139.874	0					Seed: X-178', Y-		
S54-B02					181.9	1529.58	0					Seed - X-99', Y-		
S54-B03					238.7	3677.39	0					Seed: X- 146', Y		
S54-B04					243.8	3716.12	0					Seed: X-166', Y-		
S54-B05					243.8	3716.12	0					Seed: X-100', Y-		
S54-B06					243.8	3716.12	0					Seed: X-128', Y-		
S54-B07					243.8	3716.12	0					Seed: X-97', Y-5		
S54-B08					243.8	3716.12	0					Seed: X-36', Y-1		
S54-B09					221.8	3039.21	0					Seed: X-73', Y-5		
S54-B10					82.79	302.340	0					Seed: X-116', Y-		
S54-C01					139.9	817.31	0					Seed: X-66', Y-1		
S54-C02					238.7	3677.31	0					Seed: X-100', Y-		
S54-C03					243.8	3716.12	0					Seed: X-190', Y-		
S54-C04					243.8	3716.12	0					Seed: X-185', Y-		
S54-C05					243.8	3716.12	0					Seed: X=190', Y		
S54-C06					243.8	3716.12	0					Seed: X-195', Y-		
S54-C07					243.8	3716.12	0					Seed: X-198', Y-		
S54-C08					243.8	3716.12	0					Seed: X-185', Y-		
S54-C09					243.8	3716.12	0					Seed: X-173', Y-		
S54-C10					215.9	2629.20	0					Seed: X-164', Y-		
S54-D01					207.6	2565.25	0					Seed: X-10', Y-8		
S54-D02					243.8	3716.12	0					Seed: X-61', Y-7		
S54-D03					243.8	3716.12	0					Seed: X-95', Y-8		
S54-D04					243.8	3716.12	0					Seed: X-60', Y-3		
S54-D05					243.8	3716.12	0					Seed: X-5', Y-19		
S54-D06					243.8	3716.12	0					Seed: X-30', Y-2		
S54-D07					243.8	3716.12	0					Seed: X-20', Y-7		
S54-D08					243.8	3716.12	0					Resweep Grid;		
S54-D09					243.8	3716.12	0					Seed: X-75', Y-9		
S54-D10					243.4	3715.83	0					Seed: X-20', Y-3		

GRID_ID	TEAM_LEAD	TOTAL_ANOM	GRID_SURVY	SURF_SWEEP	GEOPHY_OPS	OE_REMOVAL	DIGITAL_QC	ANALOG_QC	DIGITAL_QA	ANALOG_QA	ANOM_REMVD	GRID_STATU	TOTAL_OE	ANOM_CNT
S27-K03	Team 2		8/28/2008					9/23/2008		9/23/2008		QA	0	
S27-K04	Team 2		9/9/2008					9/24/2008		9/24/2008		QA	0	
S27-K05	Team 1		9/9/2008					10/2/2008		10/31/2008		QA	0	
S27-K06	Team 1		8/28/2008					9/23/2008		9/23/2008		QA	0	
S27-K07	Team 1		9/9/2008					9/24/2008		9/24/2008		QA	0	
S27-K08	Team 1		9/8/2008					9/24/2008		9/24/2008		QA	0	
S54-A03	Team 1		8/7/2008					9/9/2008		9/9/2008		QA	0	
S54-A04	Team 1		8/7/2008					9/9/2008		9/9/2008		QA	0	
S54-A05	Team 1		8/7/2008					9/9/2008		9/9/2008		QA	0	
S54-A06	Team 1		8/7/2008					9/9/2008		9/9/2008		QA	0	
S54-A07	Team 1		8/7/2008					9/9/2008		9/9/2008		QA	0	
S54-A08	Team 1		8/7/2008					9/9/2008		9/9/2008		QA	0	
S54-A09	Team 1		8/7/2008					9/8/2008		9/8/2008		QA	0	
S54-B02	Team 1		8/7/2008					9/5/2008		9/5/2008		QA	0	
S54-B03	Team 1		8/7/2008					9/5/2008		9/5/2008		QA	0	
S54-B04	Team 1		8/15/2008					9/5/2008		9/5/2008		QA	0	
S54-B05	Team 1		8/7/2008					9/5/2008		9/5/2008		QA	0	
S54-B06	Team 1		8/7/2008					9/8/2008		9/8/2008		QA	4	
S54-B07	Team 1		8/7/2008					9/8/2008		9/8/2008		QA	0	
S54-B08	Team 1		8/7/2008					9/8/2008		9/8/2008		QA	0	
S54-B09	Team 1		8/7/2008					9/8/2008		9/8/2008		QA	0	
S54-B10	Team 1		8/7/2008					9/8/2008		9/8/2008		QA	0	
S54-C01	Team 1		8/7/2008					9/8/2008		9/8/2008		QA	0	
S54-C02	Team 3		8/7/2008					9/9/2008		9/9/2008		QA	0	
S54-C03	Team 3		8/7/2008					9/9/2008		9/9/2008		QA	0	
S54-C04	Team 3		8/13/2008					9/9/2008		9/9/2008		QA	0	
S54-C05	Team 3		8/15/2008					9/9/2008		9/9/2008		QA	0	
S54-C06	Team 3		8/14/2008					9/9/2008		9/9/2008		QA	0	
S54-C07	Team 3		8/14/2008					9/9/2008		9/9/2008		QA	0	
S54-C08	Team 1		8/14/2008					9/10/2008		9/10/2008		QA	0	
S54-C09	Team 1		8/11/2008					9/10/2008		9/10/2008		QA	0	
S54-C10	Team 1		8/7/2008					9/8/2008		9/9/2008		QA	0	
S54-D01	Team 3		8/7/2008					9/5/2008		9/5/2008		QA	0	
S54-D02	Team 3		8/13/2008					9/5/2008		9/5/2008		QA	0	
S54-D03	Team 3		8/13/2008					9/8/2008		9/8/2008		QA	0	
S54-D04	Team 3		8/13/2008					9/8/2008		9/8/2008		QA	0	
S54-D05	Team 3		8/14/2008					9/8/2008		9/8/2008		QA	0	
S54-D06	Team 3		8/14/2008					9/11/2008		9/11/2008		QA	0	
S54-D07	Team 3		8/14/2008					9/10/2008		9/10/2008		QA	0	
S54-D08	Team 3		8/11/2008					9/10/2008		9/10/2008		QA	0	
S54-D09	Team 3		8/11/2008					9/5/2008		9/5/2008		QA	0	
S54-D10	Team 3		8/11/2008					9/5/2008		9/5/2008		QA	0	

GRID_ID	OE_CNT	OE_SCRP_WT	NOE_SCP_WT	SOIL_TYPE	DATE_ENTER	GRID_COMPL	VEG_COMMEN	VEG_REMOVA	GEO_REACQ	GEO_CLEAR	QC_RESWEEP	QA_RESWEEP	QC_PASS	QA_PASS
S27-K03		5	0	Sand	9/22/2008			8/27/2008					T	T
S27-K04		150	0	Sand	9/23/2008			9/8/2008					T	T
S27-K05		220	0	Sand	10/1/2008			9/8/2008					T	T
S27-K06		120	0	Sand	9/22/2008			8/27/2008					T	T
S27-K07		170	0	Sand	9/23/2008			9/8/2008					T	T
S27-K08		10	0	Sand	9/23/2008			9/7/2008					T	T
S54-A03		2	0	Sand	9/9/2008			8/6/2008					T	T
S54-A04		20	0	Sand	9/9/2008			8/6/2008					T	T
S54-A05		30	35	Sand	9/9/2008			8/6/2008					T	T
S54-A06		20	20	Sand	9/9/2008			8/6/2008					T	T
S54-A07		10	5	Sand	9/9/2008			8/6/2008					T	T
S54-A08		1	20	Sand	9/9/2008			8/6/2008					T	T
S54-A09		0	0	Sand	9/8/2008			8/6/2008					T	T
S54-B02		2	15	Sand	9/5/2008			8/6/2008					T	T
S54-B03		10	10	Sand	9/5/2008			8/6/2008					T	T
S54-B04		80	0	Sand	9/5/2008			8/14/2008					T	T
S54-B05		10	10	Sand	9/5/2008			8/6/2008					T	T
S54-B06		15	0	Sand	9/8/2008			8/6/2008					T	T
S54-B07		5	5	Sand	9/8/2008			8/6/2008					T	T
S54-B08		5	40	Sand	9/8/2008			8/6/2008					T	T
S54-B09		5	50	Sand	9/8/2008			8/6/2008					T	T
S54-B10		5	30	Sand	9/8/2008			8/6/2008					T	T
S54-C01		0	35	Sand	9/8/2008			8/6/2008					T	T
S54-C02		5	100	Sand	9/9/2008			8/6/2008					T	T
S54-C03		0	0	Sand	9/9/2008			8/6/2008					T	T
S54-C04		10	175	Sand	9/9/2008			8/12/2008					T	T
S54-C05		10	5	Sand	9/9/2008			8/14/2008					T	T
S54-C06		20	5	Sand	9/9/2008			8/13/2008					T	T
S54-C07		5	5	Sand	9/9/2008			8/13/2008					T	T
S54-C08		30	40	Sand	9/10/2008			8/13/2008					T	T
S54-C09		25	10	Sand	9/10/2008			8/10/2008					T	y
S54-C10		25	100	Sand	9/9/2008			8/6/2008					y	T
S54-D01		5	5	Sand	9/5/2008			8/6/2008					T	T
S54-D02		5	0	Sand	9/5/2008			8/12/2008					T	T
S54-D03		55	0	Sand	9/8/2008			8/12/2008					T	T
S54-D04		25	10	Sand	9/8/2008			8/12/2008					T	T
S54-D05		100	45	Sand	9/8/2008			8/13/2008					T	T
S54-D06		750	5	Sand	9/11/2008			8/13/2008					T	T
S54-D07		350	50	Sand	9/10/2008			8/13/2008					T	T
S54-D08		130	10	Sand	9/10/2008			8/10/2008			9/9/2008		T	T
S54-D09		20	200	Sand	9/5/2008			8/10/2008					T	T
S54-D10		10	55	Sand	9/5/2008			8/10/2008					T	T

GRID_ID	SYM_ID	ACRES	GRID_SEG	GRID_SEC	GRID_METHO	MULTI_METH	GRID_CNT	SHAPE_LENG	GRID_SEED	TODAY_DATE	Shape_Length	Shape_Area	SURFACE_OE	SUBSURF_OE
S27-K03		0.2878217689						0	T		166.23647225	1164.7780332		
S27-K04		0.6949402215						0	T		214.97941179	2812.3345477		
S27-K05		0.884782882						0	T		237.75373034	3580.6036107		
S27-K06		0.8850500016						0	T		237.75478284	3581.6846098		
S27-K07		0.6957399629						0	T		215.00837015	2815.5709997		
S27-K08		0.2893092728						0	T		166.66491206	1170.7977717		
S54-A03		0.2020888543						0	T		139.92807967	817.82784910		
S54-A04		0.6341580274						0	T		207.62316384	2566.3567514		
S54-A05		0.8614866668						0	T		235.04168574	3486.3267957		
S54-A06		0.9054936128						0	T		240.36899434	3664.4173002		
S54-A07		0.7714761627						0	T		224.14388374	3122.0657522		
S54-A08		0.4426718967						0	T		184.78973826	1791.4367739		
S54-A09		0.0345635154						0	T		57.917260089	139.87414358		
S54-B02		0.3779648938						0	T		181.94097759	1529.5757760		
S54-B03		0.908698268						0	T		238.71267352	3677.3861312		
S54-B04		0.9182699726						0	T		243.84000001	3716.1216004		
S54-B05		0.9182699726						0	T		243.84000001	3716.1216004		
S54-B06		0.9182699726						0	T		243.84000002	3716.1216005		
S54-B07		0.9182699726						0	T		243.84000001	3716.1216004		
S54-B08		0.9182699726						0	T		243.84000001	3716.1216004		
S54-B09		0.7510031791						0	T		221.80230469	3039.2141955		
S54-B10		0.0747096435						0	T		82.787054726	302.34041011		
S54-C01		0.2019608472						0	T		139.93224072	817.30982067		
S54-C02		0.9086802082						0	T		238.70473878	3677.3130455		
S54-C03		0.9182699726						0	T		243.84000002	3716.1216006		
S54-C04		0.9182699726						0	T		243.84000002	3716.1216006		
S54-C05		0.9182699726						0	T		243.84000002	3716.1216006		
S54-C06		0.9182699726						0	T		243.84000002	3716.1216007		
S54-C07		0.9182699726						0	T		243.84000002	3716.1216006		
S54-C08		0.9182699726						0	T		243.84000002	3716.1216006		
S54-C09		0.9182699726						0	T		243.84000002	3716.1216006		
S54-C10		0.6496876793						0	T		215.9198986	2629.2032743		
S54-D01		0.6338855614						0	T		207.61355885	2565.2541163		
S54-D02		0.9182699725						0	T		243.84000001	3716.1216002		
S54-D03		0.9182699726						0	T		243.84000001	3716.1216004		
S54-D04		0.9182699726						0	T		243.84000001	3716.1216004		
S54-D05		0.9182699726						0	T		243.84000001	3716.1216004		
S54-D06		0.9182699726						0	T		243.84000002	3716.1216005		
S54-D07		0.9182699726						0	T		243.84000001	3716.1216004		
S54-D08		0.9182699726						0	T		243.84000001	3716.1216004		
S54-D09		0.9182699726						0	T		243.84000001	3716.1216004		
S54-D10		0.9181984834						0	T		243.43308721	3715.8322929		

grid_area

GRID_ID	SITAOC_ID	SITE_ID	GRIDDESCRI	GRIDTYPE	PERIME	AREA	SLOPE	TERRAIN	CULTURALEF	VEGETATION	OTHER_COND	NARRATIVE	EASTING	NORTHING
S54-D11					144.6	700.194	0					Seed: X-195', Y-		
S54-E01					235	3484.95	0					Seed: X 190', Y-		
S54-E02					243.8	3716.12	0					Seed: X-190', Y-		
S54-E03					243.8	3716.12	0					Seed: X-170', Y-		
S54-E04					243.8	3716.12	0					Seed: X-185', Y-		
S54-E05					243.8	3716.12	0					Seed: X-145', Y-		
S54-E06					243.8	3716.12	0					Seed: X-135', Y-		
S54-E07					243.8	3716.12	0					Seed: X-191',Y-		
S54-E08					243.8	3716.12	0					Seed: X-195', Y-		
S54-E09					243.8	3716.12	0					Seed: X-190', Y-		
S54-E10					243.8	3716.12	0					Seed: X-190', Y-		
S54-E11					173.8	1619.47	0					Seed: X-20', Y-4		
S54-F01					240.3	3662.64	0					Seed: X-30', Y-1		
S54-F02					243.8	3716.12	0					Seed: X-30', Y-6		
S54-F03					243.8	3716.12	0					Seed: X-110', Y-		
S54-F04					243.8	3716.12	0					Seed: X-25', Y-9		
S54-F05					243.8	3716.12	0					Seed: X-6', Y- 1		
S54-F06					243.8	3716.12	0					Seed: X-1', Y-1'		
S54-F07					243.8	3716.12	0					Seed: X-6', Y- 1		
S54-F08					243.8	3716.12	0					Seed: X-155', Y-		
S54-F09					243.8	3716.12	0					Seed: X-50, Y-1		
S54-F10					243.8	3716.12	0					Seed: X-170', Y-		
S54-F11					179.1	1797.34	0					Seed: X-149', Y-		
S54-G01					224.1	3120.02	0					Seed: X-195', Y-		
S54-G02					243.8	3716.12	0					Seed: X-5', Y-19		
S54-G03					243.8	3716.12	0					Seed: X-65', Y-2		
S54-G04					243.8	3716.12	0					Seed: X-190', Y-		
S54-G05					243.8	3716.12	0					Seed: X-180', Y-		
S54-G06					243.8	3716.12	0					Seed: X-180', Y-		
S54-G07					243.8	3716.12	0					Seed: X-45', Y-1		
S54-G08					243.8	3716.12	0							
S54-G09					243.8	3716.12	0					Seed: X-61',Y-1		
S54-G10					243.8	3716.12	0					Seed: X-42', Y-4		
S54-G11					162.9	1254.58	0					Seed: X-15', Y-8		
S54-H01					184.7	1788.98	0					Seed: X-21', Y-1		
S54-H02					243.8	3716.12	0					Seed: X-9', Y-7		
S54-H03					243.8	3716.12	0					Seed: X-11', Y-7		
S54-H04					243.8	3716.12	0					Seed: X-14',Y-1		
S54-H05					243.8	3716.12	0					Seed: X-198', Y-		
S54-H06					243.8	3716.12	0					Seed: X-191', Y-		
S54-H07					243.8	3716.12	0					Seed: X-118', Y-		
S54-H08					243.8	3716.12	0					Seed: X-181', Y-		

GRID_ID	TEAM_LEAD	TOTAL_ANOM	GRID_SURVY	SURF_SWEEP	GEOPHY_OPS	OE_REMOVAL	DIGITAL_QC	ANALOG_QC	DIGITAL_QA	ANALOG_QA	ANOM_REMVD	GRID_STATU	TOTAL_OE	ANOM_CNT
S54-D11	Team 3		8/7/2008					9/5/2008		9/5/2008		QA	0	
S54-E01	Team 3		8/7/2008					9/4/2008		9/4/2008		QA	0	
S54-E02	Team 3		8/13/2008					9/4/2008		9/4/2008		QA	0	
S54-E03	Team 3		8/13/2008					9/4/2008		9/4/2008		QA	0	
S54-E04	Team 3		8/13/2008					9/4/2008		9/4/2008		QA	0	
S54-E05	Team 1		8/15/2008					9/17/2008		9/17/2008		QA	2	
S54-E06	Team 3		8/13/2008					9/16/2008		9/16/2008		QA	0	
S54-E07	Team 1		8/13/2008					9/17/2008		9/17/2008		QA	0	
S54-E08	Team 3		8/11/2008					8/28/2008		8/28/2008		QA	0	
S54-E09	Team 3		8/11/2008					8/27/2008		8/28/2008		QA	0	
S54-E10	Team 3		8/7/2008					8/27/2008		8/28/2008		QA	0	
S54-E11	Team 3		8/7/2008					8/27/2008		8/28/2008		QA	0	
S54-F01	Team 3		8/7/2008					9/4/2008		9/4/2008		QA	0	
S54-F02	Team 3		8/13/2008					9/4/2008		9/4/2008		QA	0	
S54-F03	Team 3		8/13/2008					9/4/2008		9/4/2008		QA	0	
S54-F04	Team 3		8/13/2008					9/4/2008		9/4/2008		QA	0	
S54-F05	Team 1		8/13/2008					9/16/2008		9/16/2008		QA	1	
S54-F06	Team 3		8/13/2008					9/16/2008		9/16/2008		QA	0	
S54-F07	Team 1		8/7/2008					9/16/2008		9/16/2008		QA	3	
S54-F08	Team 1		8/7/2008					9/18/2008		9/18/2008		QA	3	
S54-F09	Team 3		8/7/2008					8/26/2008		8/26/2008		QA	0	
S54-F10	Team 3		8/7/2008					8/26/2008		8/26/2008		QA	0	
S54-F11	Team 3		8/7/2008					8/26/2008		8/26/2008		QA	0	
S54-G01	Team 3		8/13/2008					9/5/2008		9/5/2008		QA	0	
S54-G02	Team 3		8/13/2008					9/4/2008		9/4/2008		QA	0	
S54-G03	Team 3		8/13/2008					9/4/2008		9/4/2008		QA	0	
S54-G04	Team 3		8/11/2008					9/4/2008		9/4/2008		QA	0	
S54-G05	Team 3		8/7/2008	8/19/2008				8/21/2008		8/25/2008		QA	0	
S54-G06	Team 3		8/7/2008					8/21/2008		5/25/2008		QA	0	
S54-G07	Team 3		8/7/2008					8/26/2008		8/27/2008		QA	0	
S54-G08	Team 1		8/7/2008					9/15/2008		9/16/2008		QA	0	
S54-G09	Team 1		8/7/2008					9/11/2008		9/11/2008		QA	0	
S54-G10	Team 3		8/15/2008					8/26/2008		8/26/2008		QA	0	
S54-G11	Team 3		8/11/2008					8/26/2008		8/26/2008		QA	0	
S54-H01	Team 1		8/7/2008					8/25/2008		8/26/2008		QA	0	
S54-H02	Team 1		8/7/2008					8/21/2008		8/25/2008		QA	0	
S54-H03	Team 1		8/11/2008					8/21/2008		8/25/2008		QA	0	
S54-H04	Team 1		8/11/2008					5/21/2008		8/25/2008		QA		
S54-H05	Team 1		8/11/2008					9/4/2008		9/4/2008		QA	0	
S54-H06	Team 1		8/7/2008					9/4/2008		9/4/2008		QA	0	
S54-H07	Team 1		8/7/2008					9/4/2008		8/4/2008		QA	0	
S54-H08	Team 1		8/11/2008					9/4/2008		9/4/2008		QA	0	

GRID_ID	OE_CNT	OE_SCRP_WT	NOE_SCP_WT	SOIL_TYPE	DATE_ENTER	GRID_COMPL	VEG_COMMEN	VEG_REMOVA	GEO_REACQ	GEO_CLEAR	QC_RESWEEP	QA_RESWEEP	QC_PASS	QA_PASS
S54-D11		5	25	Sand	6/5/2008			8/6/2008					T	T
S54-E01		1	0	Sand	9/4/2008			8/6/2008					T	T
S54-E02		15	0	Sand	9/4/2008			8/12/2008					T	T
S54-E03		10	0	Sand	9/4/2008			8/12/2008					T	T
S54-E04		15	0	Sand	9/4/2008			8/12/2008					T	T
S54-E05		220	30	Sand	9/16/2008			8/14/2008					T	T
S54-E06		80	170	Sand	9/15/2008			8/12/2008					T	T
S54-E07		245	120	Sand	9/16/2008			8/12/2008					T	T
S54-E08		40	30	Sand	8/28/2008			8/10/2008					T	T
S54-E09		60	0	Sand	8/28/2008			8/10/2008					T	T
S54-E10		40	0	Sand	8/28/2008			8/6/2008					T	T
S54-E11		35	20	Sand	8/28/2008			8/6/2008					T	T
S54-F01		0	0	Sand	9/4/2008			8/6/2008					T	T
S54-F02		5	0	Sand	9/4/2008			8/12/2008					T	T
S54-F03		10	5	Sand	9/4/2008			8/12/2008					T	T
S54-F04		5	50	Sand	9/4/2008			8/12/2008					T	T
S54-F05		75	200	Sand	9/15/2008			8/12/2008					T	T
S54-F06		140	200	Sand	9/15/2008			8/12/2008					T	T
S54-F07		260	150	Sand	9/15/2008			8/6/2008					T	T
S54-F08		850	150	Sand	9/18/2008			8/6/2008					T	T
S54-F09		60	150	Sand	8/26/2008			8/6/2008					T	T
S54-F10		40	60	Sand	8/26/2008			8/6/2008					T	T
S54-F11		0	60	Sand	8/26/2008			8/6/2008					T	T
S54-G01		5	25	Sand	9/5/2008			8/12/2008					T	T
S54-G02		5	5	Sand	9/4/2008			8/12/2008					T	T
S54-G03		5	75	Sand	9/4/2008			8/12/2008					T	T
S54-G04		5	5	Sand	9/4/2008			8/10/2008					T	T
S54-G05		0	80	Sand	8/25/2008			8/6/2008					T	T
S54-G06		0	0	Sand	8/25/2008			8/6/2008					T	T
S54-G07		75	10	Sand	8/27/2008			8/6/2008					T	T
S54-G08		800	20	Sand	9/11/2008			8/6/2008					T	T
S54-G09		380	40	Sand	9/11/2008			8/6/2008					T	T
S54-G10		15	0	Sand	8/26/2008			8/14/2008					T	T
S54-G11		5	50	Sand	8/26/2008			8/10/2008					T	T
S54-H01		2	2	Sand	8/26/2008			8/6/2008					T	T
S54-H02		10	10	Sand	8/25/2008			8/6/2008					T	T
S54-H03		60	0	Sand	5/25/2008			8/10/2008					T	T
S54-H04		5	10	Sand	5/25/2008			8/10/2008					T	T
S54-H05		100	280	Sand	9/4/2008			8/10/2008					T	T
S54-H06		200	250	Sand	9/4/2008			8/6/2008					T	T
S54-H07		330	115		9/4/2008			8/6/2008					T	T
S54-H08		450	175	Sand	9/4/2008			8/10/2008					T	T

GRID_ID	SYM_ID	ACRES	GRID_SEG	GRID_SEC	GRID_METHO	MULTI_METH	GRID_CNT	SHAPE_LENG	GRID_SEED	TODAY_DATE	Shape_Length	Shape_Area	SURFACE_OE	SUBSURF_OE
S54-D11		0.173021114						0	T		144.59134654	700.1944071		
S54-E01		0.8611470630						0	T		234.97608129	3484.9524624		
S54-E02		0.9182699725						0	T		243.84000001	3716.1216002		
S54-E03		0.9182699726						0	T		243.84000001	3716.1216004		
S54-E04		0.9182699726						0	T		243.84000001	3716.1216004		
S54-E05		0.9182699726						0	T		243.84000001	3716.1216004		
S54-E06		0.9182699726						0	T		243.84000002	3716.1216005		
S54-E07		0.9182699726						0	T		243.84000001	3716.1216004		
S54-E08		0.9182699726						0	T		243.84000001	3716.1216004		
S54-E09		0.9182699726						0	T		243.84000001	3716.1216004		
S54-E10		0.9182699726						0	T		243.84000001	3716.1216004		
S54-E11		0.4001772471						0	T		173.79774905	1619.4663402		
S54-F01		0.9050553334						0	T		240.29690092	3662.6436390		
S54-F02		0.9182699725						0	T		243.84000001	3716.1216003		
S54-F03		0.9182699726						0	T		243.84000002	3716.1216006		
S54-F04		0.9182699726						0	T		243.84000002	3716.1216006		
S54-F05		0.9182699726						0	T		243.84000002	3716.1216006		
S54-F06		0.9182699726						0	T		243.84000002	3716.1216007		
S54-F07		0.9182699726						0	T		243.84000002	3716.1216006		
S54-F08		0.9182699726						0	T		243.84000002	3716.1216006		
S54-F09		0.9182699726						0	T		243.84000002	3716.1216006		
S54-F10		0.9182699726						0	T		243.84000002	3716.1216006		
S54-F11		0.4441317628						0	T		179.11573944	1797.3446662		
S54-G01		0.7709697721						0	T		224.07725247	3120.0164537		
S54-G02		0.9182699725						0	T		243.84000001	3716.1216002		
S54-G03		0.9182699726						0	T		243.84000001	3716.1216004		
S54-G04		0.9182699726						0	T		243.84000001	3716.1216004		
S54-G05		0.9182699726						0	T		243.84000001	3716.1216004		
S54-G06		0.9182699726						0	T		243.84000002	3716.1216005		
S54-G07		0.9182699726						0	T		243.84000001	3716.1216004		
S54-G08		0.9182699726						0			243.84000001	3716.1216004		
S54-G09		0.9182699726						0	T		243.84000001	3716.1216004		
S54-G10		0.9182699726						0	T		243.84000001	3716.1216004		
S54-G11		0.3100113141						0	T		162.88889509	1254.5762958		
S54-H01		0.4420649141						0	T		184.68167849	1788.9803927		
S54-H02		0.9182699725						0	T		243.84000001	3716.1216003		
S54-H03		0.9182699726						0	T		243.84000002	3716.1216005		
S54-H04		0.9182699726						0	T		243.84000002	3716.1216005		
S54-H05		0.9182699726						0	T		243.84000002	3716.1216005		
S54-H06		0.9182699726						0	T		243.84000002	3716.1216006		
S54-H07		0.9182699726						0	T		243.84000002	3716.1216005		
S54-H08		0.9182699726						0	T		243.84000002	3716.1216005		

grid_area

GRID_ID	SITAOC_ID	SITE_ID	GRIDDESCRI	GRIDTYPE	PERIME	AREA	SLOPE	TERRAIN	CULTURALEF	VEGETATION	OTHER_COND	NARRATIVE	EASTING	NORTHING
S54-H09					243.8	3716.12	0					Seed: X-156', Y-		
S54-H10					231.1	3456.27	0					Seed: X-62', Y-1		
S54-H11					72.92	183.466	0					Seed: X-21', Y-1		
S54-J01					57.68	138.880	0					Seed: X-20, Y-1		
S54-J02					221.8	3037.18	0					SEED: X-66', Y-4		
S54-J03					243.8	3716.12	0					Seed: X-63', Y-1		
S54-J04					243.8	3716.12	0					Seed: X-110', Y-		
S54-J05					243.8	3716.12	0					Seed: X-63', Y-1		
S54-J06					243.8	3716.12	0					Seed: X-62', Y-1		
S54-J07					243.8	3716.12	0					Seed: X-60', Y-1		
S54-J08					243.8	3716.12	0					Seed: X-23', Y-1		
S54-J09					241	3704.31	0					Seed: X-10', Y-1		
S54-J10					171.2	1322.49	0					Seed: X-31', Y-1		
S54-K02					82.49	301.008	0					Seed X-27', Y-1		
S54-K03					215.9	2626.56	0					Seed: X-20', Y-5		
S54-K04					243.4	3715.83	0					Seed: X-176', Y-		
S54-K05					243.8	3716.12	0					Seed: X-133', Y-		
S54-K06					243.8	3716.12	0					Seed: X-178', Y-		
S54-K07					243.8	3716.12	0					Seed: X-121', Y-		
S54-K08					231.0	3455.78	0					Seed: X-37', Y-1		
S54-K09					171.2	1322.15	0					Seed: X-71', Y-4		
S54-L04					144.5	697.897	0					Seed: X-4', Y-18		
S54-L05					173.7	1617.67	0					Seed: X-4', Y-13		
S54-L06					179.0	1795.68	0					Seed: X-32', Y-3		
S54-L07					162.8	1253.37	0					Seed: X-30', Y-1		
S54-L08					72.71	183.062	0					Seed: X-32', Y-7		

GRID_ID	TEAM_LEAD	TOTAL_ANOM	GRID_SURVY	SURF_SWEEP	GEOPHY_OPS	OE_REMOVAL	DIGITAL_QC	ANALOG_QC	DIGITAL_QA	ANALOG_QA	ANOM_REMVD	GRID_STATU	TOTAL_OE	ANOM_CNT
S54-H09	Team 1		8/11/2008					8/28/2008		8/28/2008		QA	0	
S54-H10	Team 1		8/11/2008					8/28/2008		8/28/2008		QA	0	
S54-H11	Team 1		8/7/2008					8/28/2008		8/28/2008		QA	0	
S54-J01	Team 1		8/7/2008					8/25/2008		8/26/2008		QA	0	
S54-J02	Team 1		8/7/2008					8/25/2008		8/26/2008		QA	0	
S54-J03	Team 1		8/11/2008					8/25/2008		5/26/2008		QA	0	
S54-J04	Team 1		8/11/2008					8/25/2008		8/26/2008		QA	0	
S54-J05	Team 1		8/11/2008					8/27/2008		8/28/2008		QA	0	
S54-J06	Team 1		8/11/2008					8/27/2008		8/28/2008		QA	0	
S54-J07	Team 1		8/11/2008					8/27/2008		8/28/2008		QA	0	
S54-J08	Team 1		8/11/2008					8/28/2008		8/28/2008		QA	0	
S54-J09	Team 1		8/11/2008					8/28/2008		8/28/2008		QA	0	
S54-J10	Team 1		8/11/2008					8/28/2008		8/28/2008		QA	0	
S54-K02	Team 1		8/7/2008					8/27/2008		8/28/2008		QA	0	
S54-K03	Team 1		8/11/2008					8/27/2008		8/28/2008		QA	0	
S54-K04	Team 1		8/11/2008					8/27/2008		8/28/2008		QA	0	
S54-K05	Team 1		8/7/2008					8/26/2008		8/27/2008		QA	0	
S54-K06	Team 1		8/7/2008					8/26/2008		8/27/2008		QA	0	
S54-K07	Team 1		8/11/2008					8/26/2008		8/27/2008		QA	0	
S54-K08	Team 1		8/11/2008					8/26/2008		8/27/2008		QA	0	
S54-K09	Team 1		8/7/2008					8/26/2008		8/27/2008		QA	0	
S54-L04	Team 1		8/7/2008					8/27/2008		8/28/2008		QA	0	
S54-L05	Team 1		8/11/2008					8/26/2008		8/27/2008		QA	0	
S54-L06	Team 1		8/7/2008					8/26/2008		8/27/2008		QA	0	
S54-L07	Team 1		8/7/2008					8/26/2008		8/27/2008		QA	0	
S54-L08	Team 1		8/7/2008					8/26/2008		8/27/2008		QA	0	

GRID_ID	OE_CNT	OE_SCRP_WT	NOE_SCP_WT	SOIL_TYPE	DATE_ENTER	GRID_COMPL	VEG_COMMEN	VEG_REMOVA	GEO_REACQ	GEO_CLEAR	QC_RESWEEP	QA_RESWEEP	QC_PASS	QA_PASS
S54-H09		45	20	Sand	8/28/2008			8/10/2008					T	T
S54-H10		20	40	Sand	8/28/2008			8/10/2008					T	T
S54-H11		0	40		8/28/2008			8/6/2008					T	T
S54-J01		5	5	Sand	8/26/2008			8/6/2008					T	T
S54-J02		5	50	Sand	8/26/2008			8/6/2008					T	T
S54-J03		5	125	Sand	8/26/2008			8/10/2008					T	T
S54-J04		10	30	Sand	8/26/2008			8/10/2008					T	T
S54-J05		35	500	Sand	8/28/2008			8/10/2008					T	T
S54-J06		30	400	Sand	8/26/2008			8/10/2008					T	T
S54-J07		50	200	Sand	8/28/2008			8/10/2008					T	T
S54-J08		50	20	Sand	8/28/2008			8/10/2008					T	T
S54-J09		35	20	Sand	8/28/2008			8/10/2008					T	T
S54-J10		2	2	Sand	8/28/2008			8/10/2008					T	T
S54-K02		5	21	Sand	8/28/2008			8/6/2008					T	T
S54-K03		5	5	Sand	8/28/2008			8/10/2008					T	T
S54-K04		5	10	Sand	8/28/2008			8/10/2008					T	T
S54-K05		10	30	Sand	8/27/2008			8/6/2008					T	T
S54-K06		50	100	Sand	8/27/2008			8/6/2008					T	T
S54-K07		25	10	Sand	8/27/2008			8/10/2008					T	T
S54-K08		35	125	Sand	8/27/2008			8/10/2008					T	T
S54-K09		5	25	Sand	8/27/2008			8/6/2008					T	T
S54-L04		2	2	Sand	8/28/2008			8/6/2008					T	T
S54-L05		5	80	Sand	8/27/2008			8/10/2008					T	T
S54-L06		25	35	Sand	8/27/2008			8/6/2008					T	T
S54-L07		5	5	Sand	8/27/2008			8/6/2008					T	T
S54-L08		5	5	Sand	8/27/2008			8/6/2008					T	T

GRID_ID	SYM_ID	ACRES	GRID_SEG	GRID_SEC	GRID_METHO	MULTI_METH	GRID_CNT	SHAPE_LENG	GRID_SEED	TODAY_DATE	Shape_Length	Shape_Area	SURFACE_OE	SUBSURF_OE
S54-H09		0.9182699726						0	T		243.84000002	3716.1216005		
S54-H10		0.8540584167						0	T		231.05770499	3456.2656139		
S54-H11		0.0453352122						0	T		72.918480150	183.46582869		
S54-J01		0.034317967						0	T		57.682620932	138.8804405		
S54-J02		0.7505016754						0	T		221.75287503	3037.1846738		
S54-J03		0.9182699726						0	T		243.84000001	3716.1216004		
S54-J04		0.9182699726						0	T		243.84000001	3716.1216004		
S54-J05		0.9182699726						0	T		243.84000001	3716.1216004		
S54-J06		0.9182699726						0	T		243.84000002	3716.1216006		
S54-J07		0.9182699726						0	T		243.84000001	3716.1216004		
S54-J08		0.9182699726						0	T		243.84000001	3716.1216004		
S54-J09		0.9153506606						0	T		240.9756549	3704.3075167		
S54-J10		0.3267929724						0	T		171.17396102	1322.4895292		
S54-K02		0.0743802922						0	T		82.493567405	301.00756734		
S54-K03		0.6490355755						0	T		215.88556594	2626.5642935		
S54-K04		0.9181988542						0	T		243.43198871	3715.8337934		
S54-K05		0.9182699726						0	T		243.84000001	3716.1216004		
S54-K06		0.9182699726						0	T		243.84000002	3716.1216005		
S54-K07		0.9182699726						0	T		243.84000001	3716.1216004		
S54-K08		0.8539393421						0	T		231.02965256	3455.7837342		
S54-K09		0.3267100603						0	T		171.17037655	1322.1539945		
S54-L04		0.1724533957						0	T		144.51560492	697.89692352		
S54-L05		0.3997322346						0	T		173.71342511	1617.6654315		
S54-L06		0.4437197186						0	T		179.04443643	1795.6771756		
S54-L07		0.3097142499						0	T		162.83740468	1253.3741149		
S54-L08		0.0452353402						0	T		72.70904238	183.06165939		

IndexedObjectIc	MinGX	MinGY	MaxGX	MaxGY
2	393	3612	393	3612
3	393	3612	393	3612
4	393	3612	393	3612
5	393	3612	393	3612
6	393	3612	393	3612
7	393	3612	394	3612
8	393	3612	394	3612
9	393	3612	393	3612
10	393	3612	393	3612
11	393	3612	393	3612
12	394	3612	394	3612
13	393	3612	393	3612
14	393	3612	393	3612
15	393	3612	393	3612
16	393	3612	393	3612
17	393	3612	393	3612
18	393	3612	393	3612
19	393	3612	393	3612
20	394	3612	394	3612
21	394	3612	394	3612
22	393	3612	393	3612
23	393	3612	393	3612
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37	393	3613	393	3613
38	393	3613	393	3613
39	393	3613	393	3613
40	393	3612	393	3612
41	393	3613	393	3613
42	393	3612	393	3612
43	394	3612	394	3612

IndexedObjectIc	MinGX	MinGY	MaxGX	MaxGY
44	393	3612	393	3613
46	393	3613	394	3613
48	394	3613	394	3613
49	393	3612	393	3613
50	394	3612	394	3613
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58	393	3613	393	3613
59	393	3612	393	3612
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63	394	3613	394	3613
64	394	3612	394	3613
65	393	3613	393	3613
66	393	3612	393	3613
67	393	3613	393	3613
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70	393	3612	394	3613
71	393	3612	393	3613
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84	393	3613	393	3613
85	393	3613	393	3613
87	393	3613	393	3613
88	394	3613	394	3613
89	393	3613	393	3613
91	393	3613	393	3613
92	395	3613	395	3613
93	395	3613	395	3613

IndexedObjectIc	MinGX	MinGY	MaxGX	MaxGY
94	395	3613	395	3613
95	395	3613	395	3613
96	395	3613	395	3613
97	395	3613	395	3613
98	395	3613	395	3613
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127	395	3613	395	3613
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130	395	3613	395	3614
131	395	3613	395	3613
132	394	3613	395	3613
133	394	3613	395	3614
134	394	3613	394	3613
135	395	3613	395	3613

IndexedObjectIc	MinGX	MinGY	MaxGX	MaxGY
136	394	3613	394	3613
137	395	3613	395	3613
138	395	3613	395	3614
139	395	3613	395	3613
140	395	3613	395	3614
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145	395	3613	395	3613
146	394	3613	394	3614
147	395	3613	395	3613
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149	395	3613	395	3613
150	395	3613	395	3614
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152	395	3613	395	3613
153	395	3613	395	3613
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169	395	3614	395	3614
170	395	3614	395	3614
171	395	3614	395	3614
172	395	3614	395	3614
173	395	3614	395	3614
174	395	3614	395	3614
175	395	3614	395	3614
176	395	3614	395	3614
177	395	3614	395	3614

IndexedObjectIc	MinGX	MinGY	MaxGX	MaxGY
178	395	3614	395	3614
179	394	3614	395	3614
180	395	3614	395	3614
181	395	3614	395	3614
182	395	3614	395	3614
183	394	3614	394	3614
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185	395	3614	395	3614
186	395	3613	395	3613
187	395	3613	395	3613
188	395	3613	395	3614
189	395	3613	395	3613
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191	395	3614	395	3614
192	395	3614	395	3614
193	395	3614	395	3614
194	395	3614	395	3614
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236	393	3613	393	3613
237	393	3612	393	3613
240	393	3612	393	3612
243	393	3612	393	3612
253	393	3613	394	3613
255	393	3613	394	3613

OBJECTID	PT_ID	NORTH	EAST	ZED	Shape
1	1	3612353	393510	0	ong binary data
2	2	3612349	393586	0	ong binary data
3	3	3612345	393662	0	ong binary data
4	4	3612319	393584	0	ong binary data
5	5	3612304	393583	0	ong binary data
6	6	3612369	393587	0	ong binary data
7	7	3612380	394024	0	ong binary data
8	8	3612345	394022	0	ong binary data
9	9	3612323	394021	0	ong binary data
10	10	3612300	394020	0	ong binary data
11	11	3612268	394018	0	ong binary data
12	12	3612249	394017	0	ong binary data
13	13	3612214	394015	0	ong binary data
14	14	3612774	393558	0	ong binary data
15	15	3612759	393558	0	ong binary data
16	16	3612615	393987	0	ong binary data
17	17	3612599	393962	0	ong binary data
18	18	3612592	393457	0	ong binary data
19	19	3612618	393886	0	ong binary data
20	20	3612660	393977	0	ong binary data
21	21	3612628	393921	0	ong binary data
22	22	3612641	393913	0	ong binary data
23	23	3612672	394007	0	ong binary data
24	24	3612687	394034	0	ong binary data
25	25	3612714	394063	0	ong binary data
26	26	3612733	394090	0	ong binary data
27	27	3612751	394107	0	ong binary data
28	28	3612776	394122	0	ong binary data
29	29	3612808	394142	0	ong binary data
30	30	3612836	394162	0	ong binary data
31	31	3612865	394171	0	ong binary data
32	32	3612902	394177	0	ong binary data
33	33	3612936	394180	0	ong binary data
34	34	3612981	394182	0	ong binary data
35	35	3613022	394175	0	ong binary data
36	36	3613285	393880	0	ong binary data
37	37	3612648	393941	0	ong binary data
38	38	3613279	393819	0	ong binary data
39	39	3613279	393775	0	ong binary data
40	40	3613266	393738	0	ong binary data
41	41	3613339	393587	0	ong binary data
42	42	3613314	393569	0	ong binary data

OBJECTID	PT_ID	NORTH	EAST	ZED	Shape
43	43	3613290	393552	0	ong binary data
44	44	3613266	393534	0	ong binary data
45	45	3613241	393511	0	ong binary data
46	46	3613212	393491	0	ong binary data
47	47	3613164	393508	0	ong binary data
48	48	3613125	393509	0	ong binary data
49	49	3613069	393530	0	ong binary data
50	50	3613039	393525	0	ong binary data
51	51	3613002	393520	0	ong binary data
52	52	3612968	393514	0	ong binary data
53	53	3612928	393519	0	ong binary data
54	54	3612883	393526	0	ong binary data
55	55	3612826	393548	0	ong binary data
56	56	3613073	394163	0	ong binary data
57	57	3612619	393431	0	ong binary data
58	58	3612642	393411	0	ong binary data
59	59	3612694	393600	0	ong binary data
60	60	3612719	393578	0	ong binary data
61	61	3612740	393555	0	ong binary data
62	62	3612593	393876	0	ong binary data
63	63	3613195	393748	0	ong binary data
64	64	3613179	393747	0	ong binary data
65	65	3613125	393702	0	ong binary data
66	66	3613108	393701	0	ong binary data
67	67	3612979	394002	0	ong binary data
68	68	3612898	393846	0	ong binary data
69	69	3612764	394009	0	ong binary data
70	71	3612485	393330	0	ong binary data
71	72	3612664	393339	0	ong binary data
72	73	3612816	393347	0	ong binary data
73	74	3612968	393355	0	ong binary data
74	75	3613120	393363	0	ong binary data
75	76	3613272	393371	0	ong binary data
76	77	3613438	393379	0	ong binary data
77	78	3612435	394287	0	ong binary data
78	79	3612614	394296	0	ong binary data
79	80	3612766	394304	0	ong binary data
80	81	3612918	394312	0	ong binary data
81	82	3613070	394320	0	ong binary data
82	83	3613222	394328	0	ong binary data
83	84	3613388	394337	0	ong binary data
84	85	3612467	393334	0	ong binary data

OBJECTID	PT_ID	NORTH	EAST	ZED	Shape
85	86	3612458	393503	0	ong binary data
86	87	3612451	393655	0	ong binary data
87	88	3612443	393807	0	ong binary data
88	89	3612435	393960	0	ong binary data
89	90	3612427	394112	0	ong binary data
90	91	3612418	394281	0	ong binary data
91	92	3613443	393385	0	ong binary data
92	93	3613434	393554	0	ong binary data
93	94	3613426	393706	0	ong binary data
94	95	3613418	393859	0	ong binary data
95	96	3613410	394011	0	ong binary data
96	98	3613394	394332	0	ong binary data
97	99	3612764	393910	0	ong binary data
98	100	3613013	393646	0	ong binary data
99	101	3612940	393864	0	ong binary data
100	102	3613134	393801	0	ong binary data
101	103	3612986	393589	0	ong binary data
102	104	3612749	393862	0	ong binary data
103	105	3612911	393963	0	ong binary data
104	106	3612776	393876	0	ong binary data
105	107	3612888	393760	0	ong binary data
106	108	3612928	393776	0	ong binary data
107	109	3612926	393948	0	ong binary data
108	113	3612926	393744	0	ong binary data
109	116	3612875	393830	0	ong binary data
110	117	3612925	393768	0	ong binary data
111	118	3612989	393873	0	ong binary data
112	119	3613072	393832	0	ong binary data
113	120	3613899	395469	0	ong binary data
114	121	3613799	395007	0	ong binary data
115	122	3613768	395028	0	ong binary data
116	123	3613787	395015	0	ong binary data
117	125	3612997	393646	0	ong binary data
118	132	3614254	393631	0	ong binary data
119	133	3614122	392744	0	ong binary data
120	134	3616586	394502	0	ong binary data
121	135	3616797	395161	0	ong binary data
122	136	3614300	394827	0	ong binary data
123	137	3614505	394337	0	ong binary data
124	138	3612768	393915	0	ong binary data
125	139	3613018	393652	0	ong binary data
126	140	3612944	393870	0	ong binary data

OBJECTID	PT_ID	NORTH	EAST	ZED	Shape
127	141	3613139	393807	0	ong binary data
128	142	3612990	393594	0	ong binary data
129	143	3612753	393868	0	ong binary data
130	144	3612916	393968	0	ong binary data
131	145	3612781	393881	0	ong binary data
132	146	3612893	393765	0	ong binary data
133	147	3612933	393781	0	ong binary data
134	148	3612931	393953	0	ong binary data
135	152	3612930	393750	0	ong binary data
136	155	3612880	393835	0	ong binary data
137	156	3612930	393773	0	ong binary data
138	157	3612994	393878	0	ong binary data
139	158	3613077	393837	0	ong binary data
140	159	3613904	395474	0	ong binary data
141	160	3613804	395012	0	ong binary data
142	161	3613773	395033	0	ong binary data
143	162	3613791	395020	0	ong binary data
144	164	3613002	393651	0	ong binary data
145	171	3614259	393636	0	ong binary data
146	172	3614127	392749	0	ong binary data
147	173	3616590	394508	0	ong binary data
148	174	3616802	395166	0	ong binary data
149	175	3614305	394833	0	ong binary data
150	176	3614510	394342	0	ong binary data
151	1001	3613245	393745	0	ong binary data
152	1002	3613264	393806	0	ong binary data
153	1003	3613270	393867	0	ong binary data
154	1004	3613264	393928	0	ong binary data
155	1005	3613244	393989	0	ong binary data
156	1006	3613209	394050	0	ong binary data
157	1007	3613148	394111	0	ong binary data
158	1008	3613087	394147	0	ong binary data
159	1009	3613026	394166	0	ong binary data
160	1010	3612965	394172	0	ong binary data
161	1011	3612904	394166	0	ong binary data
162	1012	3612843	394146	0	ong binary data
163	1013	3613625	395069	0	ong binary data
164	1014	3613686	395005	0	ong binary data
165	1015	3614072	394997	0	ong binary data
166	1016	3614136	395058	0	ong binary data
167	1017	3614195	395180	0	ong binary data
168	1018	3614204	395241	0	ong binary data

OBJECTID	PT_ID	NORTH	EAST	ZED	Shape
169	1019	3614201	395302	0	ong binary data
170	1020	3614186	395363	0	ong binary data
171	1021	3614174	395392	0	ong binary data
172	1022	3614157	395424	0	ong binary data
173	1023	3614113	395480	0	ong binary data
174	1024	3614108	395485	0	ong binary data
175	1025	3614052	395529	0	ong binary data
176	1026	3614020	395546	0	ong binary data
177	1027	3613991	395558	0	ong binary data
178	1028	3613930	395573	0	ong binary data
179	1029	3613869	395576	0	ong binary data
180	1030	3613808	395567	0	ong binary data
181	1031	3613686	395508	0	ong binary data
182	1032	3613625	395444	0	ong binary data
183	1101	3612892	393806	0	ong binary data
184	1102	3612893	393792	0	ong binary data
185	1103	3612904	393769	0	ong binary data
186	1104	3612920	393745	0	ong binary data
187	1105	3612932	393717	0	ong binary data
188	1106	3612955	393684	0	ong binary data
189	1107	3612965	393673	0	ong binary data
190	1108	3612991	393649	0	ong binary data
191	1109	3613026	393628	0	ong binary data
192	1110	3613053	393632	0	ong binary data
193	1111	3613077	393651	0	ong binary data
194	1112	3613087	393670	0	ong binary data
195	1113	3613090	393684	0	ong binary data
196	1114	3613090	393706	0	ong binary data
197	1115	3613087	393726	0	ong binary data
198	1116	3613080	393745	0	ong binary data
199	1117	3613060	393781	0	ong binary data
200	1118	3613030	393806	0	ong binary data
201	1119	3613026	393809	0	ong binary data
202	1120	3612985	393835	0	ong binary data
203	1121	3612965	393843	0	ong binary data
204	1122	3612932	393847	0	ong binary data
205	1123	3612904	393832	0	ong binary data
206	1124	3612895	393818	0	ong binary data

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
1	393	3612	393	3612
2	393	3612	393	3612
3	393	3612	393	3612
4	393	3612	393	3612
5	393	3612	393	3612
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8	394	3612	394	3612
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15	393	3612	393	3612
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18	393	3612	393	3612
19	393	3612	393	3612
20	393	3612	393	3612
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37	393	3612	393	3612
38	393	3613	393	3613
39	393	3613	393	3613
40	393	3613	393	3613
41	393	3613	393	3613
42	393	3613	393	3613

IndexedObjectIc	MinGX	MinGY	MaxGX	MaxGY
43	393	3613	393	3613
44	393	3613	393	3613
45	393	3613	393	3613
46	393	3613	393	3613
47	393	3613	393	3613
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50	393	3613	393	3613
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77	394	3612	394	3612
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79	394	3612	394	3612
80	394	3612	394	3612
81	394	3613	394	3613
82	394	3613	394	3613
83	394	3613	394	3613
84	393	3612	393	3612

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
85	393	3612	393	3612
86	393	3612	393	3612
87	393	3612	393	3612
88	393	3612	393	3612
89	394	3612	394	3612
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108	393	3612	393	3612
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110	393	3612	393	3612
111	393	3612	393	3612
112	393	3613	393	3613
113	395	3613	395	3613
114	395	3613	395	3613
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117	393	3612	393	3612
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119	392	3614	392	3614
120	394	3616	394	3616
121	395	3616	395	3616
122	394	3614	394	3614
123	394	3614	394	3614
124	393	3612	393	3612
125	393	3613	393	3613
126	393	3612	393	3612

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
127	393	3613	393	3613
128	393	3612	393	3612
129	393	3612	393	3612
130	393	3612	393	3612
131	393	3612	393	3612
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145	393	3614	393	3614
146	392	3614	392	3614
147	394	3616	394	3616
148	395	3616	395	3616
149	394	3614	394	3614
150	394	3614	394	3614
151	393	3613	393	3613
152	393	3613	393	3613
153	393	3613	393	3613
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163	395	3613	395	3613
164	395	3613	395	3613
165	394	3614	394	3614
166	395	3614	395	3614
167	395	3614	395	3614
168	395	3614	395	3614

IndexedObjectIc	MinGX	MinGY	MaxGX	MaxGY
169	395	3614	395	3614
170	395	3614	395	3614
171	395	3614	395	3614
172	395	3614	395	3614
173	395	3614	395	3614
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201	393	3613	393	3613
202	393	3612	393	3612
203	393	3612	393	3612
204	393	3612	393	3612
205	393	3612	393	3612
206	393	3612	393	3612

OBJECTID	Shape	LH_FWS__ID	AREA	Shape_Length	Shape_Area
1	ong binary data	0	0	98049.877373	366114207.89
2	ong binary data	0	0	2925.0261273	399719.04102

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
1	3298	6943	3321	6965
2	3299	6963	3300	6964

OBJECTID	Shape	Id	Label	Area	Perimeter	Acres	Shape_Length	Shape_Area
1	ong binary data	0	NewSite	169382.53113	1894.1871861	3.8885050686	1894.1871861	169382.53113
2	ong binary data	0	LHAAP-27	3140974.1126	6282.8857316	72.107162856	6282.8857316	3140974.1127
3	ong binary data	0	LHAAP-54	3462916.8751	6597.0224342	79.497984420	6597.0224342	3462916.8751
4	ong binary data	0	LHAAP-53	562941.9083	3537.6980812	12.923425156	3537.6980811	562941.90830

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
2	3311	6946	3313	6948
1	3311	6947	3312	6948
3	3315	6949	3318	6951
4	3314	6956	3316	6957

OBOD

OBJECTID	Shape	PT_ID	GIS_KEY	AREA_DWG	ID	AREA	ACRES	Shape_Length	Shape_Area
1	ong binary data		1	0	0	0	11.0192396708	975.36000005	44593.459205
2	ong binary data		2	0	0	0	2.75480991778	487.68000002	11148.364802
3	ong binary data		3	0	0	0	13.7740495885	1097.2800001	55741.824007

OBJECTID	Shape	DESCRIP	NORTHING	EASTING
1	ong binary data	8000	3612904.1693	393867.3199
2	ong binary data	8001	3612843.2067	393867.3208
3	ong binary data	8003	3612843.2132	393989.2411
4	ong binary data	8004	3613087.0317	393989.2322
5	ong binary data	8006	3613087.051	393806.3615
6	ong binary data	8007	3613026.0944	393806.3593
7	ong binary data	8008	3613026.0905	393684.448
8	ong binary data	8009	3612904.1653	393684.44

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
1	393	3612	393	3612
2	393	3612	393	3612
3	393	3612	393	3612
4	393	3613	393	3613
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6	393	3613	393	3613
7	393	3613	393	3613
8	393	3612	393	3612

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
1	393	3612	393	3613
2	393	3613	393	3613
3	393	3612	393	3613

OBJECTID	Shape	PNT_Id	EASTING	NORTHING	DESCRIP
1	ong binary data	6080	3613208.97	394050.09	1006
2	ong binary data	6079	3613244.45	393989.24	1005
3	ong binary data	6078	3613263.77	393928.28	1004
4	ong binary data	6077	3613269.94	393867.32	1003
5	ong binary data	6076	3612965.13	393562.52	S27_A06
6	ong binary data	6075	3612904.17	393568.7	S27_A05
7	ong binary data	6074	3612843.2	393588.01	S27_A04
8	ong binary data	6073	3612782.25	393623.54	S27_B03
9	ong binary data	6072	3612721.28	393684.61	S27_C02
10	ong binary data	6071	3612685.88	393745.4	S27_D01
11	ong binary data	6070	3612666.62	393806.35	S27_E01
12	ong binary data	6069	3612660.51	393867.33	S27_F01
13	ong binary data	6068	3612666.7	393928.28	S27_G01
14	ong binary data	6067	3612686	393989.25	S27_H01
15	ong binary data	6066	3612721.28	394049.88	S27_J02
16	ong binary data	6065	3612782.25	394110.91	S27_K03
17	ong binary data	6064	3612843.21	394146.49	1012
18	ong binary data	6063	3612904.16	394165.8	1011
19	ong binary data	6062	3612965.13	394171.93	1010
20	ong binary data	6061	3613026.08	394165.79	1009
21	ong binary data	6060	3613087.04	394146.53	1008
22	ong binary data	6059	3613026.09	394111.16	S27_K07
23	ong binary data	6058	3613148.01	394111.03	1007
24	ong binary data	6057	3613147.86	394111.16	S27_K09
25	ong binary data	6056	3613263.78	393806.37	1002
26	ong binary data	6055	3613244.51	393745.41	1001
27	ong binary data	6054	3613209.44	393685.19	C-10 FRAGMEN
28	ong binary data	6053	3613209.03	393684.44	S27_C10
29	ong binary data	6052	3613148	393623.48	S27_B09
30	ong binary data	6051	3613087.06	393587.9	S27_A08
31	ong binary data	6050	3613026.09	393568.63	S27_A07

IndexedObjectIc	MinGX	MinGY	MaxGX	MaxGY
1	394	3613	394	3613
2	393	3613	393	3613
3	393	3613	393	3613
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27	393	3613	393	3613
28	393	3613	393	3613
29	393	3613	393	3613
30	393	3613	393	3613
31	393	3613	393	3613

OBJECTID	Shape	PNT_Id	EASTING	NORTHING	ELEV	DESCRIP
1	ong binary data	6049	3613582.63	395363.17	63.44	S54_H01
2	ong binary data	6048	3613567.58	395302.22	63.07	S54_G01
3	ong binary data	6047	3613564.64	395241.26	63.32	S54_F01
4	ong binary data	6045	3613573.47	395180.3	63.54	S54_E01
5	ong binary data	6044	3613595.12	395119.34	63.56	S54_D01
6	ong binary data	6042	3614173.33	395119.35	60.96	S54_D11
7	ong binary data	6041	3614194.99	395180.3	61.1	1017
8	ong binary data	6040	3614203.86	395241.26	61.15	1018
9	ong binary data	6039	3614200.88	395302.22	60.62	1019
10	ong binary data	6038	3614185.87	395363.18	59.76	1020
11	ong binary data	6037	3614173.85	395392.43	59.2	1021
12	ong binary data	6036	3614156.73	395424.14	59	1022
13	ong binary data	6035	3614112.9	395480.2	57.86	1023
14	ong binary data	6034	3614108.01	395485.1	57.89	1024
15	ong binary data	6033	3614051.93	395528.88	59.59	1025
16	ong binary data	6032	3614020.16	395546.06	60.31	1026
17	ong binary data	6030	3613990.97	395558.02	60.98	1027
18	ong binary data	6029	3613930.01	395573.07	61.21	1028
19	ong binary data	6028	3613869.05	395576	61.53	1029
20	ong binary data	6027	3613808.08	395567.17	61.88	1030
21	ong binary data	6026	3613747.13	395545.53	62.07	S54_LO4
22	ong binary data	6025	3613686.17	395507.66	61.9	1031
23	ong binary data	6024	3613660.48	395485.1	61.84	S54_K02
24	ong binary data	6023	3613686.2	395485.13	61.33	S54_K03
25	ong binary data	6022	3613625.23	395444.21	62.08	1032
26	ong binary data	6021	3613611.78	395424.14	62.64	S54_J01
27	ong binary data	6020	3613625.23	395424.12	62.31	S54_J02
28	ong binary data	6019	3613625.21	395363.09	62.52	S54_H02
29	ong binary data	6018	3613625.21	395068.6	63.12	1013
30	ong binary data	6017	3613632.95	395058.4	63.04	S54_C02

OBJECTID	Shape	PNT_Id	EASTING	NORTHING	ELEV	DESCRIP
31	ong binary data	6016	3613686.16	395005.14	57.86	1014
32	ong binary data	6015	3613696.37	394997.43	57.38	S54_B03
33	ong binary data	6014	3613747.14	394967.31	56.91	S54_A04
34	ong binary data	6013	3613808.09	394997.41	64.25	S54_B06
35	ong binary data	6012	3613808.08	394945.65	61.04	S54_B06
36	ong binary data	6011	3613869.05	394997.41	61.9	S54_B06
37	ong binary data	6010	3613869.05	394936.79	61.79	S54_A06
38	ong binary data	6009	3613930.01	394939.76	61.82	S54_A07
39	ong binary data	6008	3613930.01	394997.42	61.8	S54_B07
40	ong binary data	6007	3613990.97	394997.41	61.76	S54_B08
41	ong binary data	6006	3613990.97	394954.78	61.52	S54_A08
42	ong binary data	6005	3614051.93	394997.42	61.63	S54_B09
43	ong binary data	6004	3614051.92	394983.91	61.54	S54_A09
44	ong binary data	6003	3614072.1	394997.42	61.67	1015
45	ong binary data	6002	3614112.88	395032.58	61.39	S54_B10
46	ong binary data	6001	3614112.89	395058.38	61.27	S54_C10
47	ong binary data	6000	3614135.55	395058.39	61.2	1016

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
1	395	3613	395	3613
2	395	3613	395	3613
3	395	3613	395	3613
4	395	3613	395	3613
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37	394	3613	394	3613
38	394	3613	394	3613
39	394	3613	394	3613
40	394	3613	394	3613
41	394	3613	394	3613
42	394	3614	394	3614

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
43	394	3614	394	3614
44	394	3614	394	3614
45	395	3614	395	3614
46	395	3614	395	3614
47	395	3614	395	3614

OBJECTID	Shape	PNT_Id	EASTING	NORTHING	ELEV	DESCRIP
1	ong binary data	6080	3613208.97	394050.09	54.25	1006
2	ong binary data	6079	3613244.45	393989.24	55.23	1005
3	ong binary data	6078	3613263.77	393928.28	54.82	1004
4	ong binary data	6077	3613269.94	393867.32	55.66	1003
5	ong binary data	6076	3612965.13	393562.52	62.82	S27_A06
6	ong binary data	6075	3612904.17	393568.7	62.7	S27_A05
7	ong binary data	6074	3612843.2	393588.01	60.76	S27_A04
8	ong binary data	6073	3612782.25	393623.54	59.42	S27_B03
9	ong binary data	6072	3612721.28	393684.61	58.46	S27_C02
10	ong binary data	6071	3612685.88	393745.4	56.88	S27_D01
11	ong binary data	6070	3612666.62	393806.35	56.2	S27_E01
12	ong binary data	6069	3612660.51	393867.33	56.25	S27_F01
13	ong binary data	6068	3612666.7	393928.28	56.38	S27_G01
14	ong binary data	6067	3612686	393989.25	56.11	S27_H01
15	ong binary data	6066	3612721.28	394049.88	56.98	S27_J02
16	ong binary data	6065	3612782.25	394110.91	56.01	S27_K03
17	ong binary data	6064	3612843.21	394146.49	55.93	1012
18	ong binary data	6063	3612904.16	394165.8	55.31	1011
19	ong binary data	6062	3612965.13	394171.93	55.8	1010
20	ong binary data	6061	3613026.08	394165.79	56.6	1009
21	ong binary data	6060	3613087.04	394146.53	56.89	1008
22	ong binary data	6059	3613026.09	394111.16	55.24	S27_K07
23	ong binary data	6058	3613148.01	394111.03	56.38	1007
24	ong binary data	6057	3613147.86	394111.16	56.45	S27_K09
25	ong binary data	6056	3613263.78	393806.37	55.7	1002
26	ong binary data	6055	3613244.51	393745.41	56.53	1001
27	ong binary data	6054	3613209.44	393685.19	58	C-10 FRAGMEN
28	ong binary data	6053	3613209.03	393684.44	58.02	S27_C10
29	ong binary data	6052	3613148	393623.48	62.03	S27_B09
30	ong binary data	6051	3613087.06	393587.9	63.99	S27_A08

OBJECTID	Shape	PNT_Id	EASTING	NORTHING	ELEV	DESCRIP
31	ong binary data	6050	3613026.09	393568.63	63.9	S27_A07
32	ong binary data	6049	3613582.63	395363.17	63.44	S54_H01
33	ong binary data	6048	3613567.58	395302.22	63.07	S54_G01
34	ong binary data	6047	3613564.64	395241.26	63.32	S54_F01
35	ong binary data	6045	3613573.47	395180.3	63.54	S54_E01
36	ong binary data	6044	3613595.12	395119.34	63.56	S54_D01
37	ong binary data	6042	3614173.33	395119.35	60.96	S54_D11
38	ong binary data	6041	3614194.99	395180.3	61.1	1017
39	ong binary data	6040	3614203.86	395241.26	61.15	1018
40	ong binary data	6039	3614200.88	395302.22	60.62	1019
41	ong binary data	6038	3614185.87	395363.18	59.76	1020
42	ong binary data	6037	3614173.85	395392.43	59.2	1021
43	ong binary data	6036	3614156.73	395424.14	59	1022
44	ong binary data	6035	3614112.9	395480.2	57.86	1023
45	ong binary data	6034	3614108.01	395485.1	57.89	1024
46	ong binary data	6033	3614051.93	395528.88	59.59	1025
47	ong binary data	6032	3614020.16	395546.06	60.31	1026
48	ong binary data	6030	3613990.97	395558.02	60.98	1027
49	ong binary data	6029	3613930.01	395573.07	61.21	1028
50	ong binary data	6028	3613869.05	395576	61.53	1029
51	ong binary data	6027	3613808.08	395567.17	61.88	1030
52	ong binary data	6026	3613747.13	395545.53	62.07	S54_LO4
53	ong binary data	6025	3613686.17	395507.66	61.9	1031
54	ong binary data	6024	3613660.48	395485.1	61.84	S54_K02
55	ong binary data	6023	3613686.2	395485.13	61.33	S54_K03
56	ong binary data	6022	3613625.23	395444.21	62.08	1032
57	ong binary data	6021	3613611.78	395424.14	62.64	S54_J01
58	ong binary data	6020	3613625.23	395424.12	62.31	S54_J02
59	ong binary data	6019	3613625.21	395363.09	62.52	S54_H02
60	ong binary data	6018	3613625.21	395068.6	63.12	1013

OBJECTID	Shape	PNT_Id	EASTING	NORTHING	ELEV	DESCRIP
61	ong binary data	6017	3613632.95	395058.4	63.04	S54_C02
62	ong binary data	6016	3613686.16	395005.14	57.86	1014
63	ong binary data	6015	3613696.37	394997.43	57.38	S54_B03
64	ong binary data	6014	3613747.14	394967.31	56.91	S54_A04
65	ong binary data	6013	3613808.09	394997.41	64.25	S54_B06
66	ong binary data	6012	3613808.08	394945.65	61.04	S54_B06
67	ong binary data	6011	3613869.05	394997.41	61.9	S54_B06
68	ong binary data	6010	3613869.05	394936.79	61.79	S54_A06
69	ong binary data	6009	3613930.01	394939.76	61.82	S54_A07
70	ong binary data	6008	3613930.01	394997.42	61.8	S54_B07
71	ong binary data	6007	3613990.97	394997.41	61.76	S54_B08
72	ong binary data	6006	3613990.97	394954.78	61.52	S54_A08
73	ong binary data	6005	3614051.93	394997.42	61.63	S54_B09
74	ong binary data	6004	3614051.92	394983.91	61.54	S54_A09
75	ong binary data	6003	3614072.1	394997.42	61.67	1015
76	ong binary data	6002	3614112.88	395032.58	61.39	S54_B10
77	ong binary data	6001	3614112.89	395058.38	61.27	S54_C10
78	ong binary data	6000	3614135.55	395058.39	61.2	1016

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
1	394	3613	394	3613
2	393	3613	393	3613
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40	395	3614	395	3614
41	395	3614	395	3614
42	395	3614	395	3614

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
43	395	3614	395	3614
44	395	3614	395	3614
45	395	3614	395	3614
46	395	3614	395	3614
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73	394	3614	394	3614
74	394	3614	394	3614
75	394	3614	394	3614
76	395	3614	395	3614
77	395	3614	395	3614
78	395	3614	395	3614

OBJECTID	Shape	PNT_Id	EASTING	NORTHING	ELEV	DESCRIP
1	ong binary data	6080	3613208.97	394050.09	54.25	1006
2	ong binary data	6079	3613244.45	393989.24	55.23	1005
3	ong binary data	6078	3613263.77	393928.28	54.82	1004
4	ong binary data	6077	3613269.94	393867.32	55.66	1003
5	ong binary data	6076	3612965.13	393562.52	62.82	S27_A06
6	ong binary data	6075	3612904.17	393568.7	62.7	S27_A05
7	ong binary data	6074	3612843.2	393588.01	60.76	S27_A04
8	ong binary data	6073	3612782.25	393623.54	59.42	S27_B03
9	ong binary data	6072	3612721.28	393684.61	58.46	S27_C02
10	ong binary data	6071	3612685.88	393745.4	56.88	S27_D01
11	ong binary data	6070	3612666.62	393806.35	56.2	S27_E01
12	ong binary data	6069	3612660.51	393867.33	56.25	S27_F01
13	ong binary data	6068	3612666.7	393928.28	56.38	S27_G01
14	ong binary data	6067	3612686	393989.25	56.11	S27_H01
15	ong binary data	6066	3612721.28	394049.88	56.98	S27_J02
16	ong binary data	6065	3612782.25	394110.91	56.01	S27_K03
17	ong binary data	6064	3612843.21	394146.49	55.93	1012
18	ong binary data	6063	3612904.16	394165.8	55.31	1011
19	ong binary data	6062	3612965.13	394171.93	55.8	1010
20	ong binary data	6061	3613026.08	394165.79	56.6	1009
21	ong binary data	6060	3613087.04	394146.53	56.89	1008
22	ong binary data	6059	3613026.09	394111.16	55.24	S27_K07
23	ong binary data	6058	3613148.01	394111.03	56.38	1007
24	ong binary data	6057	3613147.86	394111.16	56.45	S27_K09
25	ong binary data	6056	3613263.78	393806.37	55.7	1002
26	ong binary data	6055	3613244.51	393745.41	56.53	1001
27	ong binary data	6054	3613209.44	393685.19	58	C-10 FRAGMEN
28	ong binary data	6053	3613209.03	393684.44	58.02	S27_C10
29	ong binary data	6052	3613148	393623.48	62.03	S27_B09
30	ong binary data	6051	3613087.06	393587.9	63.99	S27_A08

OBJECTID	Shape	PNT_Id	EASTING	NORTHING	ELEV	DESCRIP
31	ong binary data	6050	3613026.09	393568.63	63.9	S27_A07
32	ong binary data	6049	3613582.63	395363.17	63.44	S54_H01
33	ong binary data	6048	3613567.58	395302.22	63.07	S54_G01
34	ong binary data	6047	3613564.64	395241.26	63.32	S54_F01
35	ong binary data	6045	3613573.47	395180.3	63.54	S54_E01
36	ong binary data	6044	3613595.12	395119.34	63.56	S54_D01
37	ong binary data	6042	3614173.33	395119.35	60.96	S54_D11
38	ong binary data	6041	3614194.99	395180.3	61.1	1017
39	ong binary data	6040	3614203.86	395241.26	61.15	1018
40	ong binary data	6039	3614200.88	395302.22	60.62	1019
41	ong binary data	6038	3614185.87	395363.18	59.76	1020
42	ong binary data	6037	3614173.85	395392.43	59.2	1021
43	ong binary data	6036	3614156.73	395424.14	59	1022
44	ong binary data	6035	3614112.9	395480.2	57.86	1023
45	ong binary data	6034	3614108.01	395485.1	57.89	1024
46	ong binary data	6033	3614051.93	395528.88	59.59	1025
47	ong binary data	6032	3614020.16	395546.06	60.31	1026
48	ong binary data	6030	3613990.97	395558.02	60.98	1027
49	ong binary data	6029	3613930.01	395573.07	61.21	1028
50	ong binary data	6028	3613869.05	395576	61.53	1029
51	ong binary data	6027	3613808.08	395567.17	61.88	1030
52	ong binary data	6026	3613747.13	395545.53	62.07	S54_LO4
53	ong binary data	6025	3613686.17	395507.66	61.9	1031
54	ong binary data	6024	3613660.48	395485.1	61.84	S54_K02
55	ong binary data	6023	3613686.2	395485.13	61.33	S54_K03
56	ong binary data	6022	3613625.23	395444.21	62.08	1032
57	ong binary data	6021	3613611.78	395424.14	62.64	S54_J01
58	ong binary data	6020	3613625.23	395424.12	62.31	S54_J02
59	ong binary data	6019	3613625.21	395363.09	62.52	S54_H02
60	ong binary data	6018	3613625.21	395068.6	63.12	1013

OBJECTID	Shape	PNT_Id	EASTING	NORTHING	ELEV	DESCRIP
61	ong binary data	6017	3613632.95	395058.4	63.04	S54_C02
62	ong binary data	6016	3613686.16	395005.14	57.86	1014
63	ong binary data	6015	3613696.37	394997.43	57.38	S54_B03
64	ong binary data	6014	3613747.14	394967.31	56.91	S54_A04
65	ong binary data	6013	3613808.09	394997.41	64.25	S54_B06
66	ong binary data	6012	3613808.08	394945.65	61.04	S54_B06
67	ong binary data	6011	3613869.05	394997.41	61.9	S54_B06
68	ong binary data	6010	3613869.05	394936.79	61.79	S54_A06
69	ong binary data	6009	3613930.01	394939.76	61.82	S54_A07
70	ong binary data	6008	3613930.01	394997.42	61.8	S54_B07
71	ong binary data	6007	3613990.97	394997.41	61.76	S54_B08
72	ong binary data	6006	3613990.97	394954.78	61.52	S54_A08
73	ong binary data	6005	3614051.93	394997.42	61.63	S54_B09
74	ong binary data	6004	3614051.92	394983.91	61.54	S54_A09
75	ong binary data	6003	3614072.1	394997.42	61.67	1015
76	ong binary data	6002	3614112.88	395032.58	61.39	S54_B10
77	ong binary data	6001	3614112.89	395058.38	61.27	S54_C10
78	ong binary data	6000	3614135.55	395058.39	61.2	1016

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
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37	395	3614	395	3614
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39	395	3614	395	3614
40	395	3614	395	3614
41	395	3614	395	3614
42	395	3614	395	3614

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
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76	395	3614	395	3614
77	395	3614	395	3614
78	395	3614	395	3614

OBJECTID	Shape	Id	Label	Area	Perimeter	Acres	Shape_Length	Shape_Area
1	ong binary data	0	27_Swamp	4265.8991455	324.61502312	1.0541224191	1065.0077884	45917.572578

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
1	3312	6947	3313	6947

OBJECTID	PT_ID	NORTH	EAST	Z	DESC_	Shape
1	7094	3613016.76	393564.68	63.69	SIGN 1	.ong binary data
2	7093	3613040.54	393570.2	64.05	SIGN 64	.ong binary data
3	7092	3613065.65	393587.44	63.68	SIGN 63	.ong binary data
4	7091	3613094.3	393597.85	63.82	SIGN 62	.ong binary data
5	7090	3613121.57	393611.39	62.77	SIGN 61	.ong binary data
6	7089	3613147.45	393627.42	61.84	SIGN 60	.ong binary data
7	7088	3613169.64	393648.27	60.49	SIGN 59	.ong binary data
8	7087	3613195.76	393663.98	58.86	SIGN 58	.ong binary data
9	7086	3613213.66	393688.59	57.79	SIGN 57	.ong binary data
10	7085	3613227.49	393715.75	56.74	SIGN 56	.ong binary data
11	7084	3613242.5	393742.23	56.26	SIGN 55	.ong binary data
12	7082	3613253.17	393770.78	55.93	SIGN 54	.ong binary data
13	7081	3613256.81	393801.07	55.66	SIGN 53	.ong binary data
14	7080	3613261.22	393831.19	55.6	SIGN 52	.ong binary data
15	7079	3613259.47	393861.66	55.2	SIGN 51	.ong binary data
16	7078	3613257.47	393892.01	54.92	SIGN 50	.ong binary data
17	7077	3613253.31	393922.2	54.88	SIGN 49	.ong binary data
18	7076	3613244.44	393951.36	54.44	SIGN 48	.ong binary data
19	7075	3613232.36	393979.27	55.15	SIGN 47	.ong binary data
20	7074	3613221.06	394007.56	54.29	SIGN 46	.ong binary data
21	7073	3613216.49	394024.91	54.27	SIGN 45	.ong binary data
22	7072	3613211.55	394044.05	54.11	SIGN 44	.ong binary data
23	7071	3613195.62	394069.57	54.26	SIGN 43	.ong binary data
24	7070	3613173.16	394087.95	55.19	SIGN 42	.ong binary data
25	7069	3613150.71	394108.53	56.4	SIGN 41	.ong binary data
26	7068	3613126.71	394127.17	55.25	SIGN 40	.ong binary data
27	7067	3613100.46	394142.55	56.18	SIGN 39	.ong binary data
28	7066	3613071.28	394151.22	56.31	SIGN 38	.ong binary data
29	7065	3613040.91	394152.81	56.09	SIGN 37	.ong binary data
30	7064	3613010.57	394154.69	56.36	SIGN 36	.ong binary data

OBJECTID	PT_ID	NORTH	EAST	Z	DESC_	Shape
31	7063	3612980.2	394156.39	55.89	SIGN 35	.ong binary data
32	7062	3612949.79	394154.53	55.84	SIGN 34	.ong binary data
33	7061	3612919.66	394149.79	54.95	SIGN 33	.ong binary data
34	7060	3612889.84	394143.83	55.39	SIGN 32	.ong binary data
35	7059	3612860.07	394137.34	55.94	SIGN 31	.ong binary data
36	7058	3612832.31	394124.88	55.98	SIGN 30	.ong binary data
37	7057	3612805.51	394110.48	55.97	SIGN 29	.ong binary data
38	7056	3612780.25	394093.58	56.69	SIGN 28	.ong binary data
39	7055	3612758.09	394072.6	57.02	SIGN 27	.ong binary data
40	7054	3612738.63	394049.28	56.54	SIGN 26	.ong binary data
41	7053	3612738.33	394033.26	57.09	SIGN 25	.ong binary data
42	7052	3612726.08	394005.44	55.92	SIGN 24	.ong binary data
43	7051	3612701.89	393986.98	56.35	SIGN 23	.ong binary data
44	7050	3612693.55	393971.23	57.03	SIGN 22	.ong binary data
45	7049	3612684.89	393942.08	56.75	SIGN 21	.ong binary data
46	7048	3612679.61	393912.12	55.73	SIGN 20	.ong binary data
47	7047	3612669.59	393883.33	55.76	SIGN 19	.ong binary data
48	7046	3612669.96	393861.97	56.04	SIGN 18	.ong binary data
49	7045	3612672.14	393831.59	56.01	SIGN 17	.ong binary data
50	7044	3612675.89	393801.35	56.08	SIGN 16	.ong binary data
51	7043	3612683.82	393771.92	56.14	SIGN 15	.ong binary data
52	7042	3612695.38	393743.78	56.93	SIGN 14	.ong binary data
53	7041	3612708.25	393716.2	57.75	SIGN 13	.ong binary data
54	7040	3612724.26	393690.24	58.25	SIGN 12	.ong binary data
55	7039	3612742.62	393665.96	58.47	SIGN 11	.ong binary data
56	7038	3612762.59	393642.98	58.35	SIGN 10	.ong binary data
57	7037	3612785.46	393622.92	59.41	SIGN 9	.ong binary data
58	7036	3612812.29	393608.5	59.55	SIGN 8	.ong binary data
59	7035	3612839.09	393594.05	60.19	SIGN 7	.ong binary data
60	7034	3612866.88	393581.7	61.91	SIGN 6	.ong binary data

OBJECTID	PT_ID	NORTH	EAST	Z	DESC_	Shape
61	7033	3612896.35	393574.21	62.64	SIGN 5	.ong binary data
62	7032	3612926.32	393568.91	63.3	SIGN 4	.ong binary data
63	7031	3612956.35	393563.85	62.96	SIGN 3	.ong binary data
64	7030	3612986.65	393560.52	63.96	SIGN 2	.ong binary data

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
1	393	3613	393	3613
2	393	3613	393	3613
3	393	3613	393	3613
4	393	3613	393	3613
5	393	3613	393	3613
6	393	3613	393	3613
7	393	3613	393	3613
8	393	3613	393	3613
9	393	3613	393	3613
10	393	3613	393	3613
11	393	3613	393	3613
12	393	3613	393	3613
13	393	3613	393	3613
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16	393	3613	393	3613
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37	394	3612	394	3612
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39	394	3612	394	3612
40	394	3612	394	3612
41	394	3612	394	3612
42	394	3612	394	3612

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
43	393	3612	393	3612
44	393	3612	393	3612
45	393	3612	393	3612
46	393	3612	393	3612
47	393	3612	393	3612
48	393	3612	393	3612
49	393	3612	393	3612
50	393	3612	393	3612
51	393	3612	393	3612
52	393	3612	393	3612
53	393	3612	393	3612
54	393	3612	393	3612
55	393	3612	393	3612
56	393	3612	393	3612
57	393	3612	393	3612
58	393	3612	393	3612
59	393	3612	393	3612
60	393	3612	393	3612
61	393	3612	393	3612
62	393	3612	393	3612
63	393	3612	393	3612
64	393	3612	393	3612

OBJECTID	PT_ID	NORTH	EAST	Z	Shape	DESCRIP
1	7066	3614179.61	395346.03	59.41	ong binary data	SIGN 58
2	7065	3614169.51	395374.77	58.97	ong binary data	SIGN 57
3	7064	3614155.76	395401.93	58.63	ong binary data	SIGN 56
4	7063	3614139.33	395427.54	58.28	ong binary data	SIGN 55
5	7062	3614122.01	395452.62	58.03	ong binary data	SIGN 54
6	7061	3614102.34	395475.82	57.9	ong binary data	SIGN 53
7	7060	3614078.92	395495.17	58.01	ong binary data	SIGN 52
8	7059	3614053.74	395512.21	58.47	ong binary data	SIGN 51
9	7058	3614027.36	395527.45	59.15	ong binary data	SIGN 50
10	7057	3613999.88	395540.46	59.62	ong binary data	SIGN 49
11	7056	3613971.32	395550.76	60.26	ong binary data	SIGN 48
12	7055	3613941.42	395556.66	60.66	ong binary data	SIGN 47
13	7054	3613911.31	395560.95	61.07	ong binary data	SIGN 46
14	7053	3613880.91	395562.15	61.19	ong binary data	SIGN 45
15	7052	3613850.54	395562.31	61.3	ong binary data	SIGN 44
16	7051	3613820.61	395556.74	61.43	ong binary data	SIGN 43
17	7050	3613791.23	395548.77	61.56	ong binary data	SIGN 42
18	7049	3613762.98	395537.54	61.46	ong binary data	SIGN 41
19	7048	3613735.87	395523.84	61.2	ong binary data	SIGN 40
20	7047	3613710.16	395507.48	61.25	ong binary data	SIGN 39
21	7046	3613686.51	395488.24	61.23	ong binary data	SIGN 38
22	7045	3613663.59	395468.2	61.59	ong binary data	SIGN 37
23	7044	3613644.24	395444.79	61.78	ong binary data	SIGN 36
24	7043	3613626.8	395419.76	62.02	ong binary data	SIGN 35
25	7042	3613610.99	395393.82	62.45	ong binary data	SIGN 34
26	7041	3613599.5	395365.59	62.89	ong binary data	SIGN 33
27	7040	3613591.42	395336.26	62.67	ong binary data	SIGN 32
28	7039	3613584.23	395308.81	62.8	ong binary data	SIGN 31
29	7038	3613579.55	395278.69	63.09	ong binary data	SIGN 30
30	7037	3613578.67	395248.18	63.12	ong binary data	SIGN 29

OBJECTID	PT_ID	NORTH	EAST	Z	Shape	DESCRIP
31	7036	3613579.11	395217.76	63.1	ong binary data	SIGN 28
32	7035	3613583.48	395187.59	63.31	ong binary data	SIGN 27
33	7034	3613591.02	395158.14	63.36	ong binary data	SIGN 26
34	7033	3613602.84	395130.04	63.09	ong binary data	SIGN 25
35	7032	3613616.84	395103.05	62.99	ong binary data	SIGN 24
36	7031	3613632.64	395076.96	62.78	ong binary data	SIGN 23
37	7029	3613651.09	395052.78	61.45	ong binary data	SIGN 22
38	7028	3613672.36	395031.06	58.97	ong binary data	SIGN 21
39	7027	3613694.55	395010.27	57.62	ong binary data	SIGN 20
40	7026	3613718.32	394991.15	57.15	ong binary data	SIGN 19
41	7024	3613745.2	394976.72	57.03	ong binary data	SIGN 18
42	7023	3613774.39	394967.81	57.38	ong binary data	SIGN 17
43	7022	3613803.76	394959.82	58.88	ong binary data	SIGN 16
44	7020	3613833.78	394955.09	61.37	ong binary data	SIGN 15
45	7019	3613863.73	394949.56	61.65	ong binary data	SIGN 14
46	7018	3613894.12	394946.97	61.59	ong binary data	SIGN 13
47	7017	3613924.61	394947.38	61.5	ong binary data	SIGN 12
48	7016	3613954.63	394952.43	61.43	ong binary data	SIGN 11
49	7015	3613984.24	394959.83	61.58	ong binary data	SIGN 10
50	7014	3614013.06	394969.87	61.55	ong binary data	SIGN 9
51	7013	3614039.07	394985.79	61.55	ong binary data	SIGN 8
52	7012	3614063.29	395004.35	61.47	ong binary data	SIGN 7
53	7011	3614087.5	395022.9	61.39	ong binary data	SIGN 6
54	7010	3614110.09	395043.38	61.18	ong binary data	SIGN 5
55	7009	3614130.18	395066.24	60.95	ong binary data	SIGN 4
56	7008	3614147.76	395091.17	60.96	ong binary data	SIGN 3
57	7007	3614163.41	395117.32	60.83	ong binary data	SIGN 2
58	7006	3614179.35	395143.22	61.15	ong binary data	SIGN 1
59	7005	3614182.01	395167.92	60.99	ong binary data	SIGN 64
60	7004	3614185.85	395195.38	60.89	ong binary data	SIGN 63

OBJECTID	PT_ID	NORTH	EAST	Z	Shape	DESCRIP
61	7003	3614190.26	395225.51	60.78	ong binary data	SIGN 62
62	7002	3614192.11	395255.86	60.67	ong binary data	SIGN 61
63	7001	3614191.87	395286.37	60.4	ong binary data	SIGN 60
64	7000	3614186.84	395316.46	59.72	ong binary data	SIGN 59

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
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2	395	3614	395	3614
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4	395	3614	395	3614
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40	394	3613	394	3613
41	394	3613	394	3613
42	394	3613	394	3613

IndexedObjectId	MinGX	MinGY	MaxGX	MaxGY
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44	394	3613	394	3613
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57	395	3614	395	3614
58	395	3614	395	3614
59	395	3614	395	3614
60	395	3614	395	3614
61	395	3614	395	3614
62	395	3614	395	3614
63	395	3614	395	3614
64	395	3614	395	3614

APPENDIX L
GRID SHEETS

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

00099637

S27 E-06

Team (1) 2 3

Date Started: 11-7-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 11-13-2008

Soil:
- [x] -Clay
- [ ] -Limestone
- [ ] -Loam
- [ ] -Sand

Digs: 4,517

MEC #: 31

MEC Debris: 850 lbs

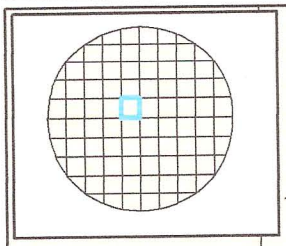
Scrap Metal: 20 lbs

Seed:
X: 10'
Y: 10'
Z: 1'

	P	F	Date
QC :	X		10/14/08
QA :	X		11/17/08

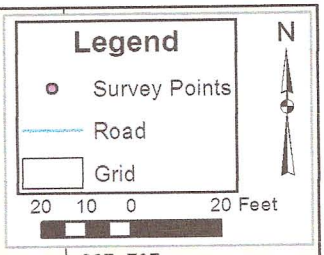
Comments:

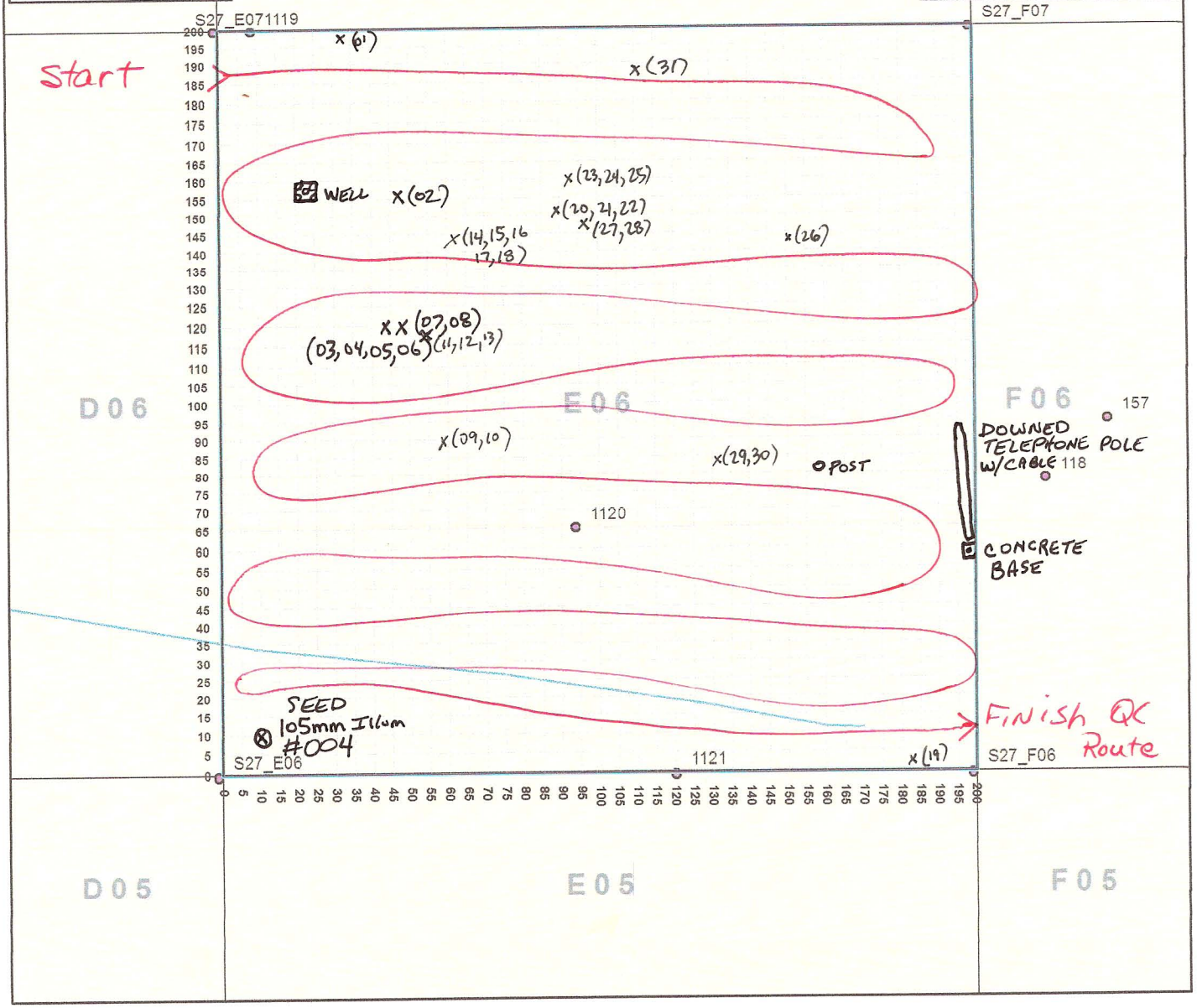
Qty	Depth(in)	Nomenclature	Filler
4	2"	M112 FLARE	Illuminant
27	3"	M112 FLARE	Illuminant



SURFACE CLEARANCE

E07





00099638

S27 E-07 Team (1) 2 3

Date Started: 10-3-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 11-13-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

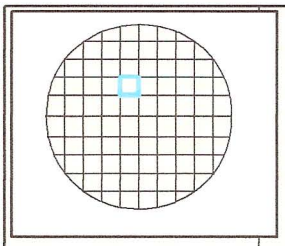
Digs: 2,483
MEC #: 14
MEC Debris: 735 lbs
Scrap Metal: 2 lbs

Seed:
X: 25'
Y: 20'
Z: 1'

	P	F	Date
QC:	☒	☐	10/14/08
QA:	☒	☐	11/17/08

Comments: Grid was delayed because it was not part of original OBOD.

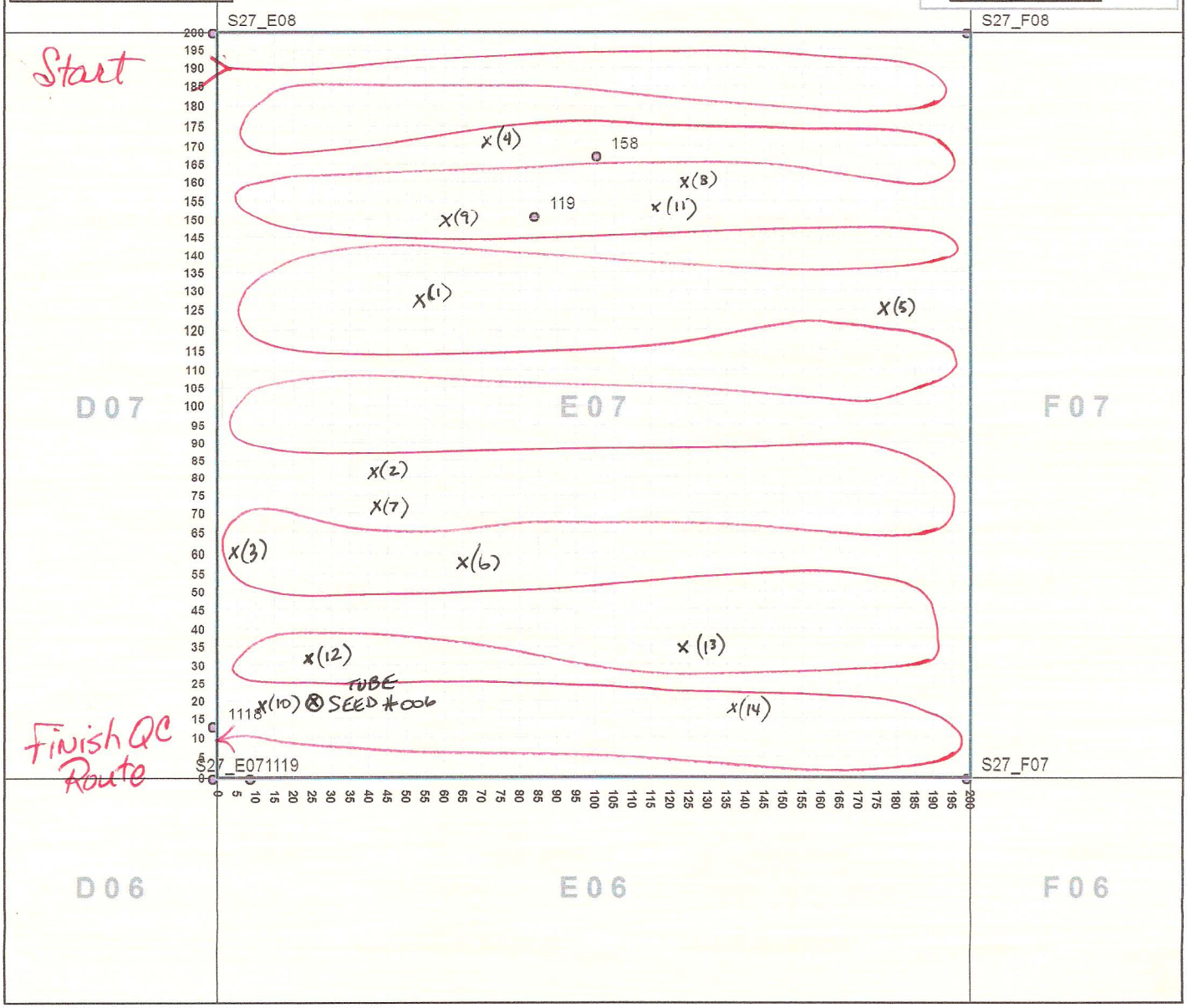
Qty	Depth(in)	Nomenclature	Filler
2	2"	M112 FLARE	PHOTOFLASH
1	1"	M112 FLARE	PHOTOFLASH
11	2"	M112 FLARE	PHOTO FLASH



SURFACE CLEARANCE

E08

Legend
Survey Points
Road
Grid
20 10 0 20 Feet
N



OB/OD

00099639

S27 F-06

Team (1) 2 3

Date Started: 10-6-2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 10-7-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: 2135 2152

MEC #: 12 ✓

MEC Debris: 1495 lbs ✓

Scrap Metal: 15 lbs

Seed:
X: 155'
Y: 165'

	P	F	Date
QC:	☒	☐	11/12/08
QA:	☒	☐	11/17/08

Comments: Blue Flags in grid denote anomaly under tree or below roots. - "Pit" in SE corner of Grid potentially holds MEC below 4 feet.

Qty	Depth(in)	Nomenclature	Filler
12	2"	M62 FLARE	Illuminant

OB/OD

SURFACE CLEARANCE

F07

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S27_F07 S27_G07 S27_F06 S27_G06

E06 F06 G06 E05 F05 G05

.13 X M62 FLARE - 5"

.8 X M62 FLARE - 7"

Finish QC Route

.14 X M62 FLARE - 11"

⊗ Bomb Fuze Adapter #007

.6 X M62 FLARE - 9"

.15 X M62 FLARE - 5"

157

118

.9 X M62 FLARE - 2"

.1 X M62 FLARE - 3"

.12 X (M62 FLARE) 2 EACH 4"

.17

.10 X M62 FLARE - 3"

.16 X M62 FLARE - 1"

.11 X M62 FLARE - 8"

Pit

16'

20'

start

Pit: x67' y 10' z 4'

"Pit" Coordinates

UTM (15 South)
039 383.1
361 2971

LAT/LONG
N 32 38 57.4
W 94 07 53.4

"Pit" true measurements (FROM SW stake)
START @ 57' to east
END @ 77' to east
West side 21' to North
East side 16' to North
NORTH SIDE 16' wide
SOUTH SIDE 20' wide

00099640

S27 F-07

Team : (1) 2 3

Date Started: 11/13/2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: ~~11/17/2008~~ 11/17/08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: 944

MEC #: 4

MEC Debris: 647 lbs

Scrap Metal: ∅ lbs

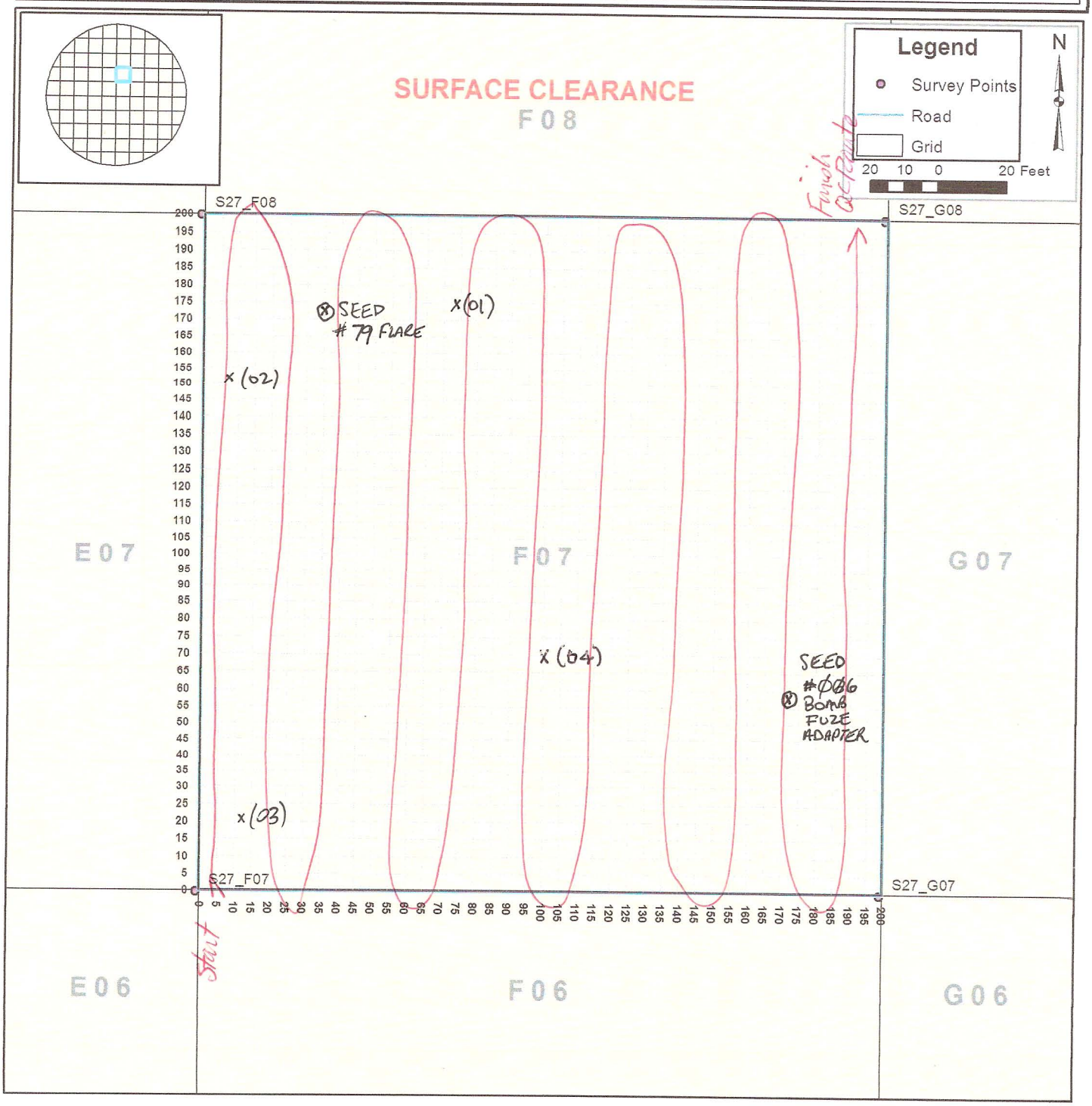
Seed:

X:	35'	172'
Y:	167'	57'
Z:	0"	2'

	P	F	Date
QC :	☒	☐	11/18/08
QA :	☒	☐	11/19/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	(1) 2"	M112 FLARE	PHOTOFLASH
1	(2) 3"	M112 FLARE	PHOTOFLASH
1	(3) 5"	M112 FLARE	~~PHOTOFLASH~~
1	(4) 4"	M112 FLARE	~~PHOTOFLASH~~



00099641

S27 G-07 Team (1) 2 3

Date Started: 11/17/08
Date Surveyed: N/A
Date Gru:bbed: N/A
Date Finished: 11/18/08

Soil:
- [x] -Clay
- [ ] -Limestone
- [x] -Loam
- [x] -Sand

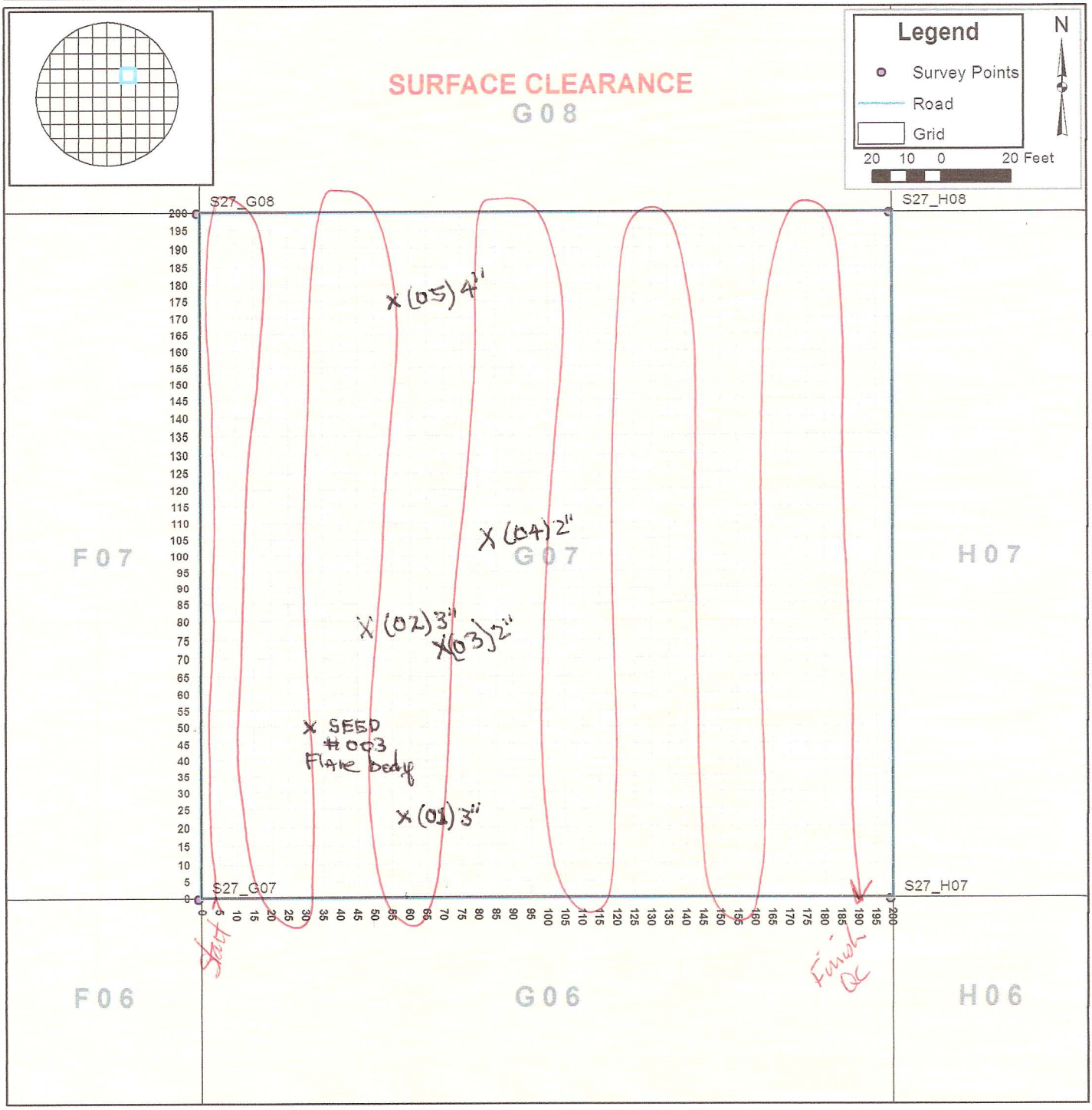
Digs: 1,280
MEC #: 5
MEC Debris: 1,5606
Scrap Metal: 0

Seed:
X: 31
Y: 50
Z:

	P	F	Date
QC :	[x]	[ ]	11/19/08
QA :	[x]	[ ]	11/19/08

Comments:
Seed: X-31 Y-50 Z-1.5

Qty	Depth(in)	Nomenclature	Filler
1	3	M112 Flare	Williams
1	3	M112 Flare	Williams
2	2	M112 Flare	Williams
1	4	M112 Flare	Williams



2795

00099642

S27 F-05 Team (1) 2 3

Date Started: 11/18/08
Date Surveyed: N/A
Date Grubbed: N/A
Date Finished: 11/20/08

Soil:
- [x] Clay
- [ ] Limestone
- [x] Loam
- [x] Sand

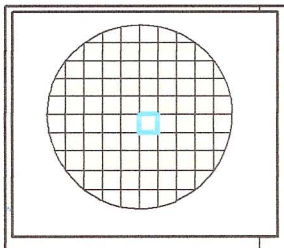
Digs: ~~2,578~~ 2795
MEC #: 18
MEC Debris: 2,340
Scrap Metal: 900

Seed:
X: 182
Y: 147
Z: 0

	P	F	Date
QC:	X		11/21/08
QA:	X		11/21/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
18	2-6"	M112 Flare	Alkali



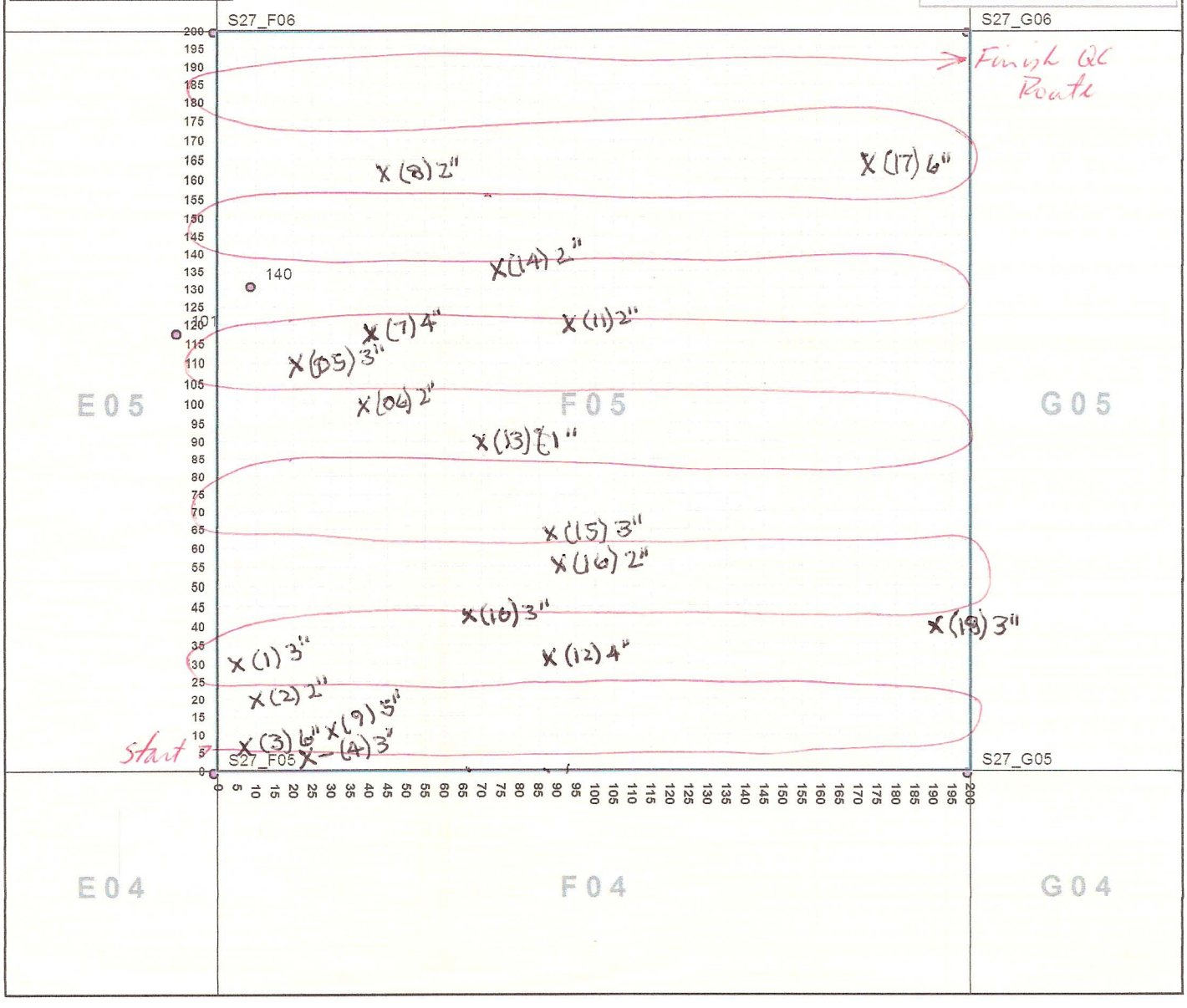
SURFACE CLEARANCE

F06

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



Sent to GIS

00099644

S27 H-09 Team (1) 2 3

Date Started: 9-23-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-23-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

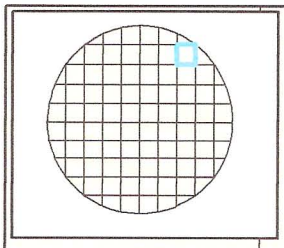
Digs: NA
MEC #: NA
MEC Debris: 75 lbs
Scrap Metal: 0 lbs

Seed:
X: 12'
Y: 134'

	P	F	Date
QC:	☒	☐	9/24/08
QA:	☒	☐	10/31/08 – swamp area ✓

Comments: Surface Swept Swamp area 10/31/08 – subsequently passed QC & QA, same day.

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

H10

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

1006

S27_H10

QC Route

SWAMP QC

Finish by QC Route TBH

⊗ NAIL #12

SWAMP AREA (standing water) TBH

QC Route

start

S27_H09

S27_J09

G09 H09 J09

G08 H08 J08

00099645

S27 H-10 Team : 1 2 3

Date Started: 9-23-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-23-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA
MEC #: NA
MEC Debris: 15 lbs
Scrap Metal: 0 lbs

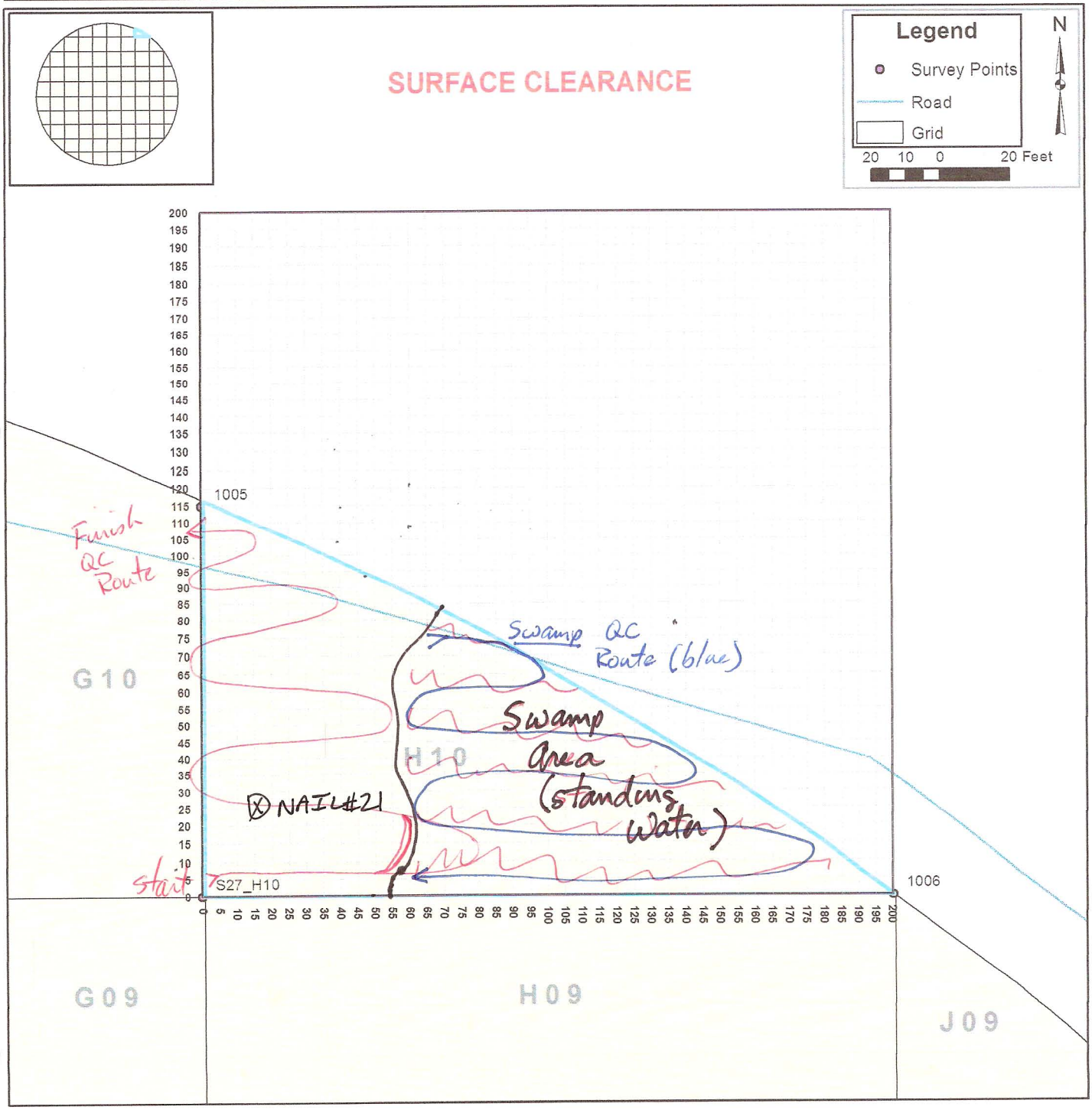
Seed:
X: 16'
Y: 26'

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	10/3/08 - Swamp Area

Comments: Surface Swept Swamp area 10/3/08 - Subsequently passed QC/QA same day.

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE



00099646

S27 J-09 Team ① 2 3

Date Started: 9-23-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-23-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

Digs: NA
MEC #: NA
MEC Debris: 35 lbs
Scrap Metal: Ø lbs

Seed:
X: 8'
Y: 8'

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	10/31/08 Swamp Area

✓

Comments: Surface Swept Swamp area 10/31/08 - Subsequently QC/QA same day!

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

1006

Swamp Area QC Route

SWAMP AREA (Standing Water) TBH

Finish QC Route

start

FLARE #60

S27_J09

S27_K091007

H09 J09 H08 J08 K08

OB/OD

00099647

S27 G-04 Team: (1) 2 3

Date Started: 10/10/2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 10/13/2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

Digs: 545 ✓
MEC #: 1
MEC Debris: 205 lbs
Scrap Metal: Ø lbs

Seed:
X: 4'
Y: 181'

	P	F	Date
QC:	☒	☐	10/14/08 ✓
QA:	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	1"	M62 FLARE	Illuminant

OB/OD

SURFACE CLEARANCE

G05

144

105

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

start

Finish @ Road

S27_G05

S27_H05

.2 x M62 FLARE – 1"

@4.2" IllumBase #005

F04 G04 H04

F03 G03 H03

S27_G04

S27_H04

OB/OD

00099648

S27 G-05 Team (1) 2 3

Date Started: 10-9-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 10-10-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: 1,419 ✓

MEC #: 14

MEC Debris: 1,160

Scrap Metal: Ø165

Seed:
X: 11'
Y: 192'

	P	F	Date
QC :	☒	☐	10/10/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
14	>1"	M62 FLARE	Illuminant

OB/OD

SURFACE CLEARANCE

G06

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S27_G06 S27_H06 S27_G05 S27_H05

NAIL #65

.11 X M62 FLARE - 1"

finish OK Route

.7 X M62 FLARE - 3"

.2 X M62 FLARE - 2"

.10 X M62 FLARE - 5"

.1 X M62 FLARE - 2"

.3 X M62 FLARE - 3"

.14 X M62 FLARE - 4"

.9 X M62 FLARE - 1"

148

.8 X M62 FLARE - 10"

109

.13 X M62 FLARE - 8"

144

.12 X M62 FLARE - 3"

105

.5 X M62 FLARE - 7"

.4 X M62 FLARE - 2"

.1 X M62 FLARE - 3"

start

F05 G05 H05

F04 G04 H04

OB/OD

00099649

S27 G-06 Team (1) 2 3

Date Started: 10/8/2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 10/9/2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

Digs: 1811
MEC #: 4
MEC Debris: 500 lbs
Scrap Metal: Ø lbs

Seed:
X: 25'
Y: 180'

	P	F	Date
QC :	☒	☐	10/10/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
4	>1"	M62 FLARES	Pyrotechnic

OB/OD

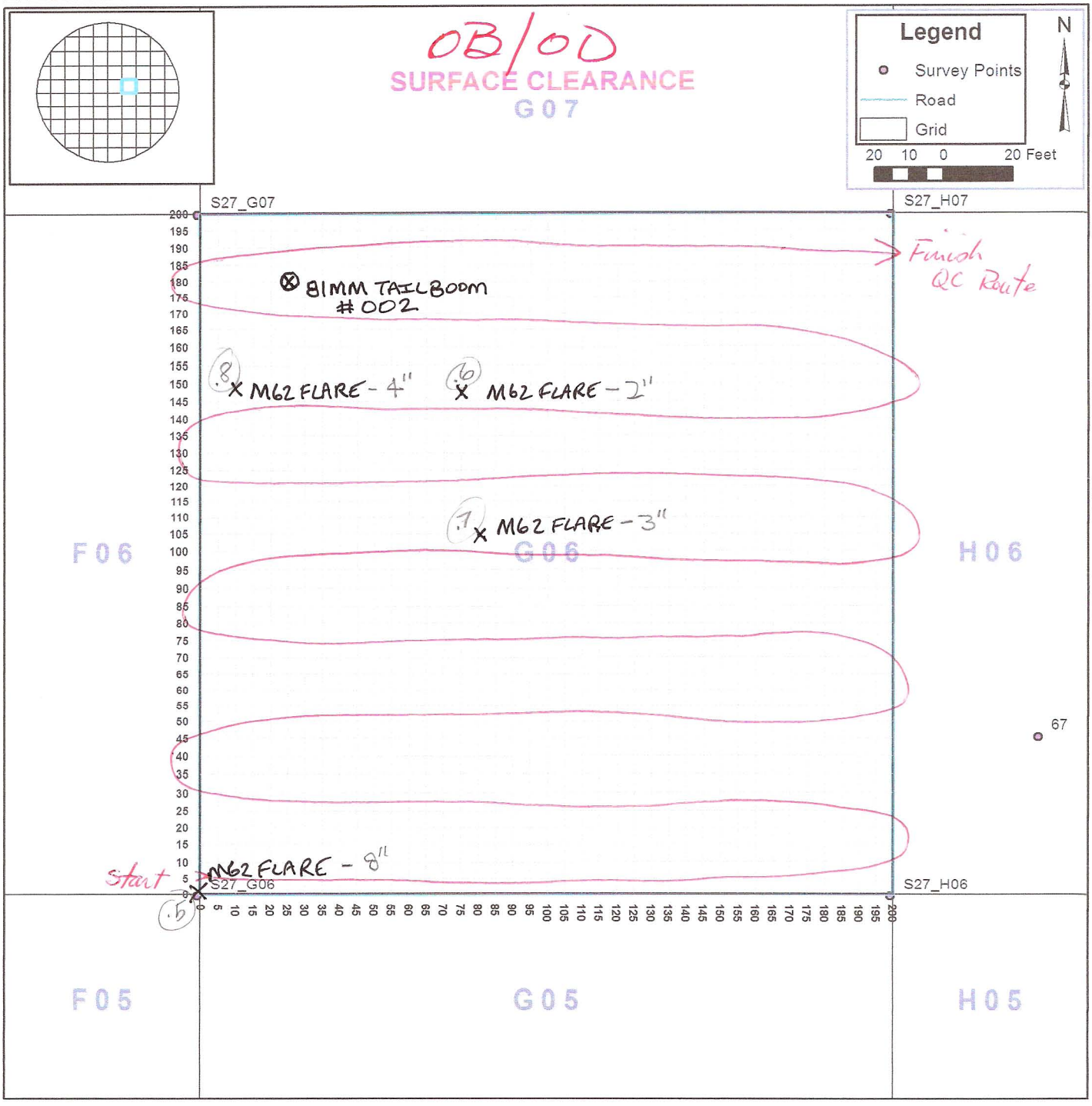
SURFACE CLEARANCE

G07

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



OB/OD

00099650

S27 C-05 Team (1) 2 3

Date Started: 10/20/2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 10/22/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: 2,325 ✓

MEC #: 31

MEC Debris: 370lbs

Scrap Metal: Ø lbs

Seed:
X: 199' | 12'
Y: 196' | 200'

	P	F	Date
QC:	X		10/23/08 ✓
QA:	X		10/29/08

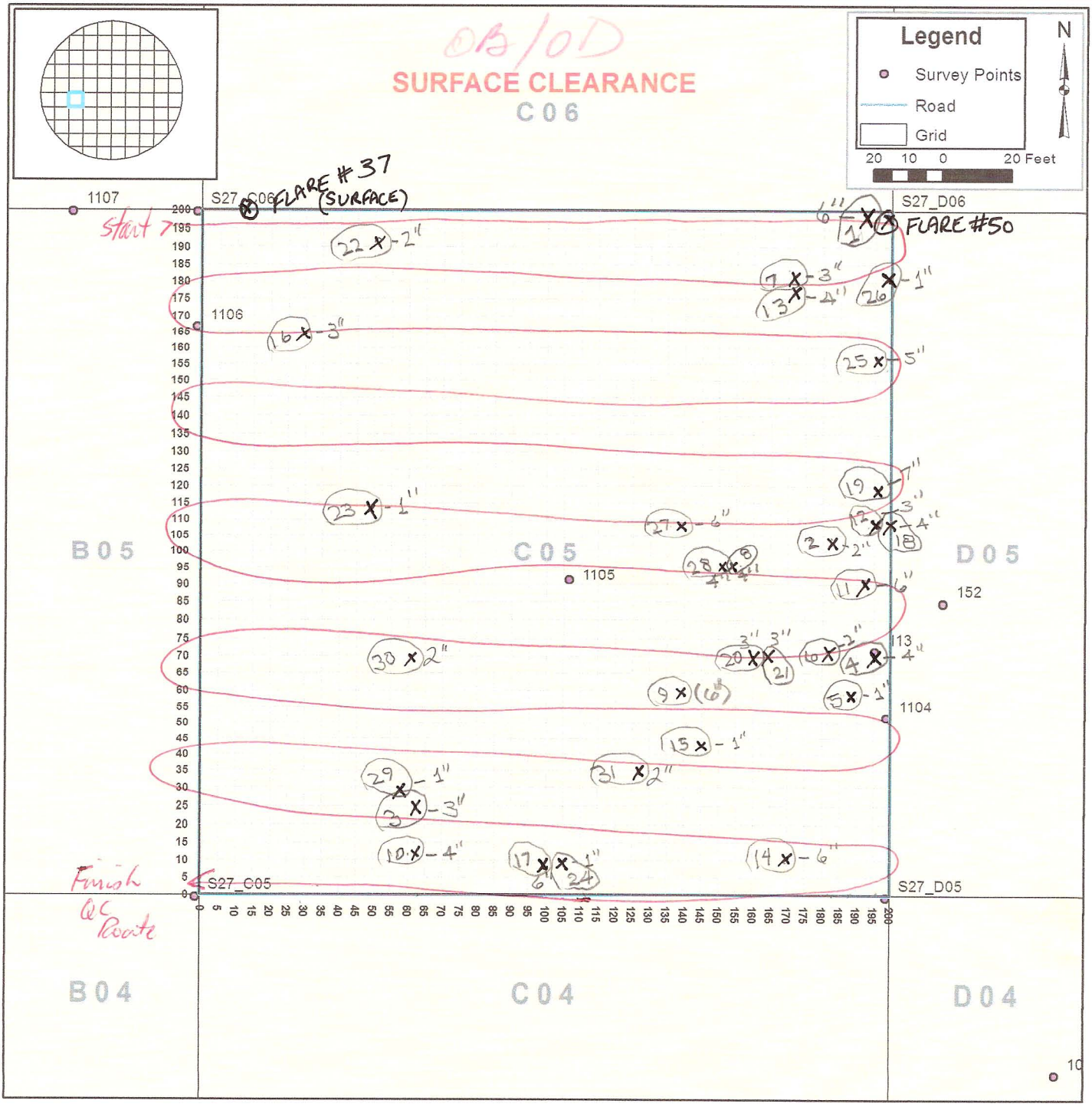
Comments: (X) denotes location of M62 flares.

Qty	Depth(in)	Nomenclature	Filler
31	1"	M62 FLARE	Illuminant
	2"		
	6"		

OB/OD

SURFACE CLEARANCE

C06



OB/OD

00099651

S27 C-06

Team (1) 2 3

Date Started: 10/14/2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 10/20/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: 6800 ✓

MEC #: 4

MEC Debris: 690 lbs

Scrap Metal: 15 lbs

Seed:
X: 196'
Y: 4'

	P	F	Date
QC:	X		10/23/08 ✓
QA:	X		10/29/08

Comments: * exposed concrete culvert during QC - shown as marked on Grid Map (below).

Qty	Depth(in)	Nomenclature	Filler
4	> 1"	M112 FLARE	Illuminant

OB/OD

SURFACE CLEARANCE

C07

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S27_C07 | S27_D07

Start

3 X M112 FLARE - 6"

UNDERGROUND CONCRETE CULVERT

2 X M112 FLARE - 1"

4 X M112 FLARE - 8"

1 X M112 FLARE - 10"

Finish QC Sweep

NAIL #65

S27_C06 | S27_D06

1107 | 1106

B06 | C06 | D06

B05 | C05 | D05

OB/OD

00099652

S27 D-05 Team 1 2 3

Date Started: 10/22/2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 10/30/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: 8,564
MEC #: 68
MEC Debris: 1,170 lbs
Scrap Metal: 15 lbs

Seed:
X: 0'
Y: 195
Z: 2"

	P	F	Date
QC :	X		10/30/08
QA :	X		10/30/08

Comments: (2) M62 flares [1']

Qty	Depth(in)	Nomenclature	Filler
3	0"	M112 FLARE	Illuminant
19	1"	M112 FLARE	Illuminant
21	2"	M112 FLARE	Illuminant
13	3"	M112 FLARE	Illuminant
10	1'	M112 FLARE	Illuminant

OB/OD

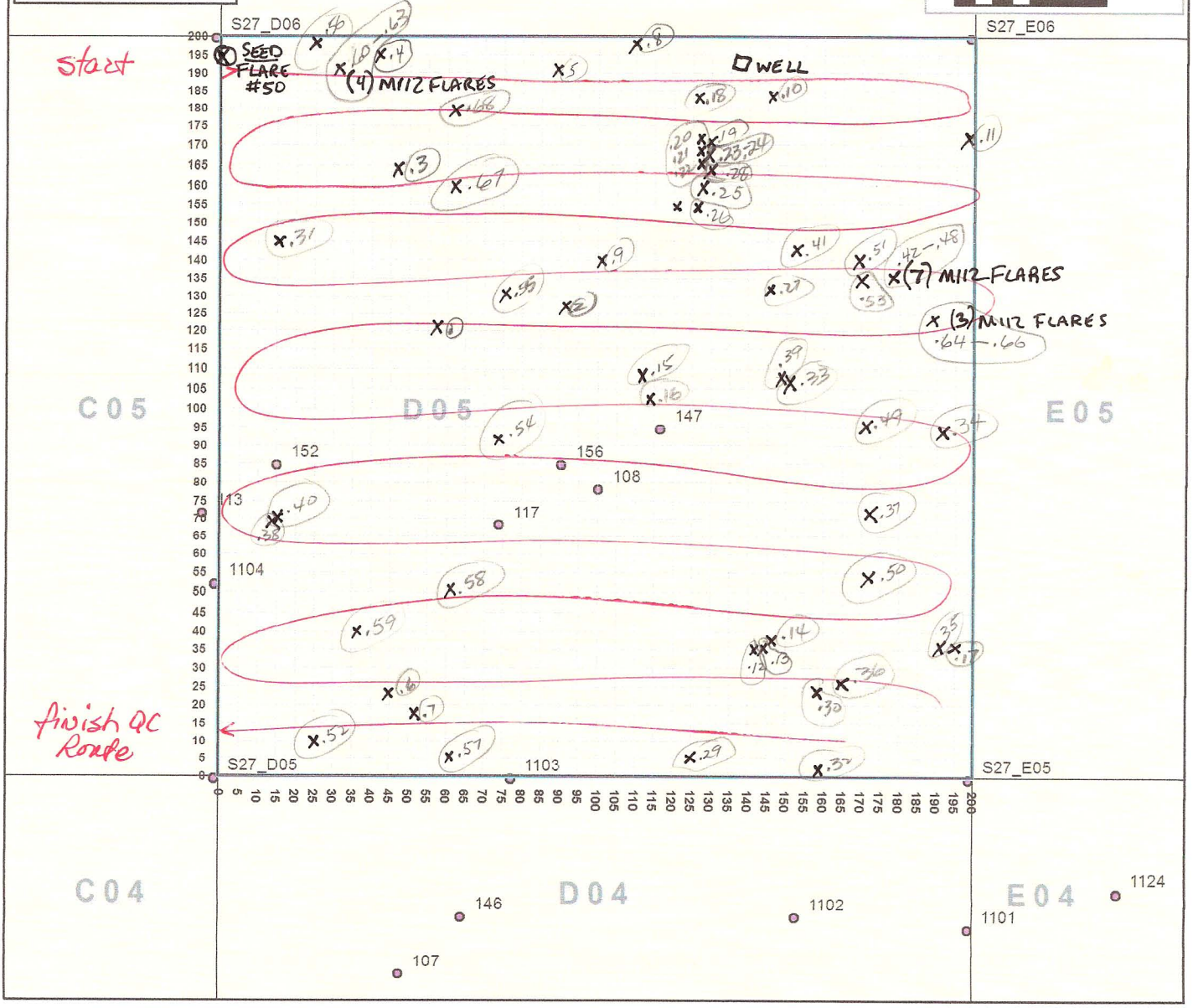
SURFACE CLEARANCE

D06

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



OB/OD

00099653

S27 F-04 Team (1) 2 3

Date Started: 10/13/2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 10/14/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: 1,862

MEC #: 20

MEC Debris: 1,080 lbs

Scrap Metal: 100 lbs

Seed:
X: 55'
Y: 43'

	P	F	Date
QC :	☒	☐	10/20/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
20	>1"	M62 FLARE	Illuminant

OB/OD

SURFACE CLEARANCE

F05

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

Start

Finish QC Touch

S27_F05 S27_G05 S27_F04 S27_G04

E04 F04 G04 E03 F03 G03

.3 X M62 FLARE 5"

.2 X M62 FLARE - 1"

.10 X M62 FLARE - 3"

.13 X M62 FLARE - 3"

.11 X M62 FLARE - 3"

.6 X M62 FLARE 4"

.18 X M62 FLARE - 6"

.17 X M62 FLARE - 4"

.4 X M62 FLARE - 2"

.5 X M62 FLARE - 10"

.7 X M62 FLARE - 2"

.9 X M62 FLARE - 1"

.14 X M62 FLARE 3"

.19 X M62 FLARE - 4"

.20 X M62 FLARE - 1"

.15 X M62 FLARE - 7"

.16 X M62 FLARE - 8"

.12 X M62 FLARE - 4"

.8 X M62 FLARE - 2"

.17 X M62 FLARE - 9"

⊗ SLAP FLARE #14

00099654

S54 G-05 Team : 1 2 (3)

Date Started: 18 AUG 08
Date Surveyed: N/A
Date Grubbed: N/A
Date Finished: 19 AUG 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

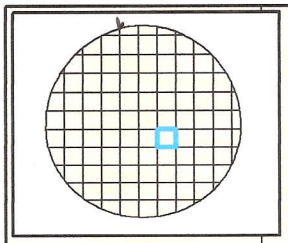
Digs: N/A
MEC #:
MEC Debris:
Scrap Metal: 80

Seed:
X: 180
Y: 190

	P	F	Date
QC :	☒	☐	8/21/08
QA :	☒	☐	8/25/08

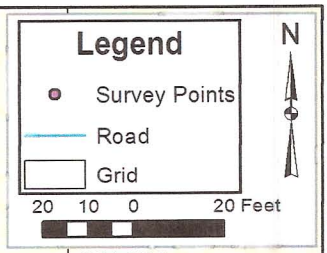
Comments:

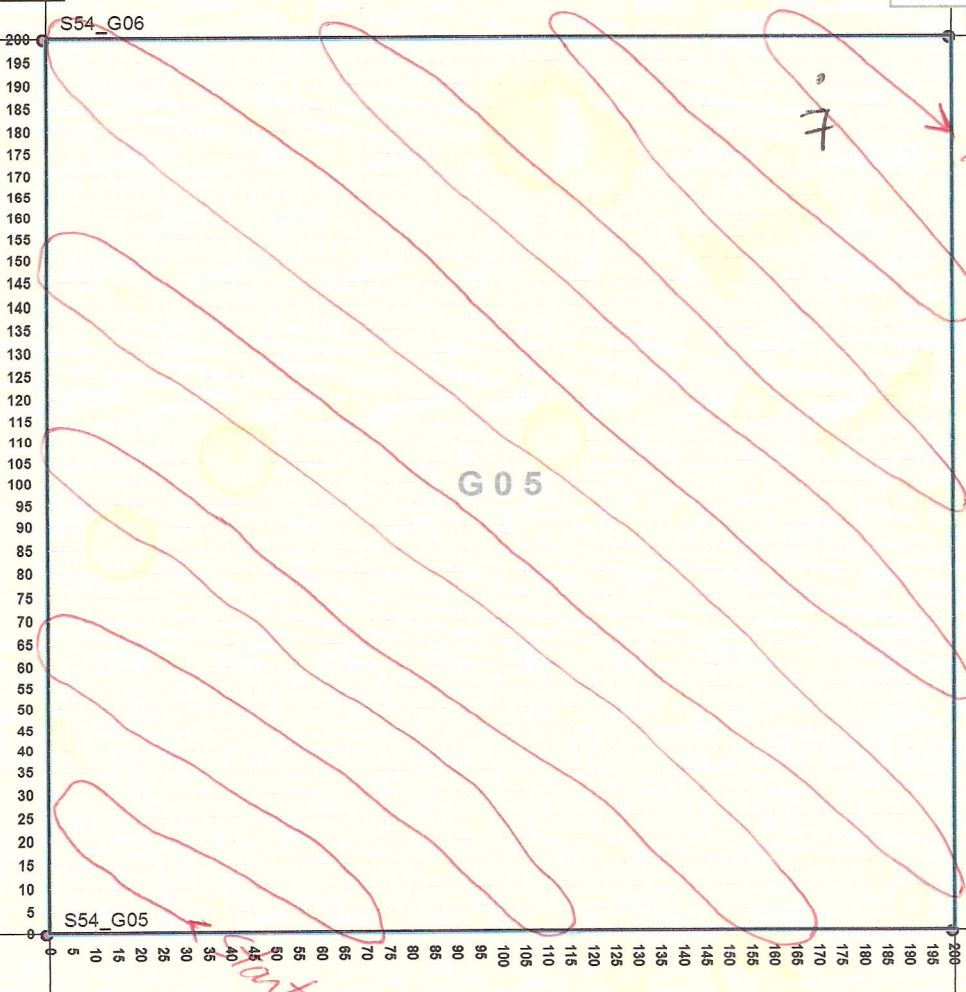
Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

G06





Red Line = QC Route

00099655

S54 G-06 Team : 1 2 (3)

Date Started: 19 AUG 08
Date Surveyed: MP
Date Gru:bbed: MP
Date Finished: 19 Aug 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☐ -Sand

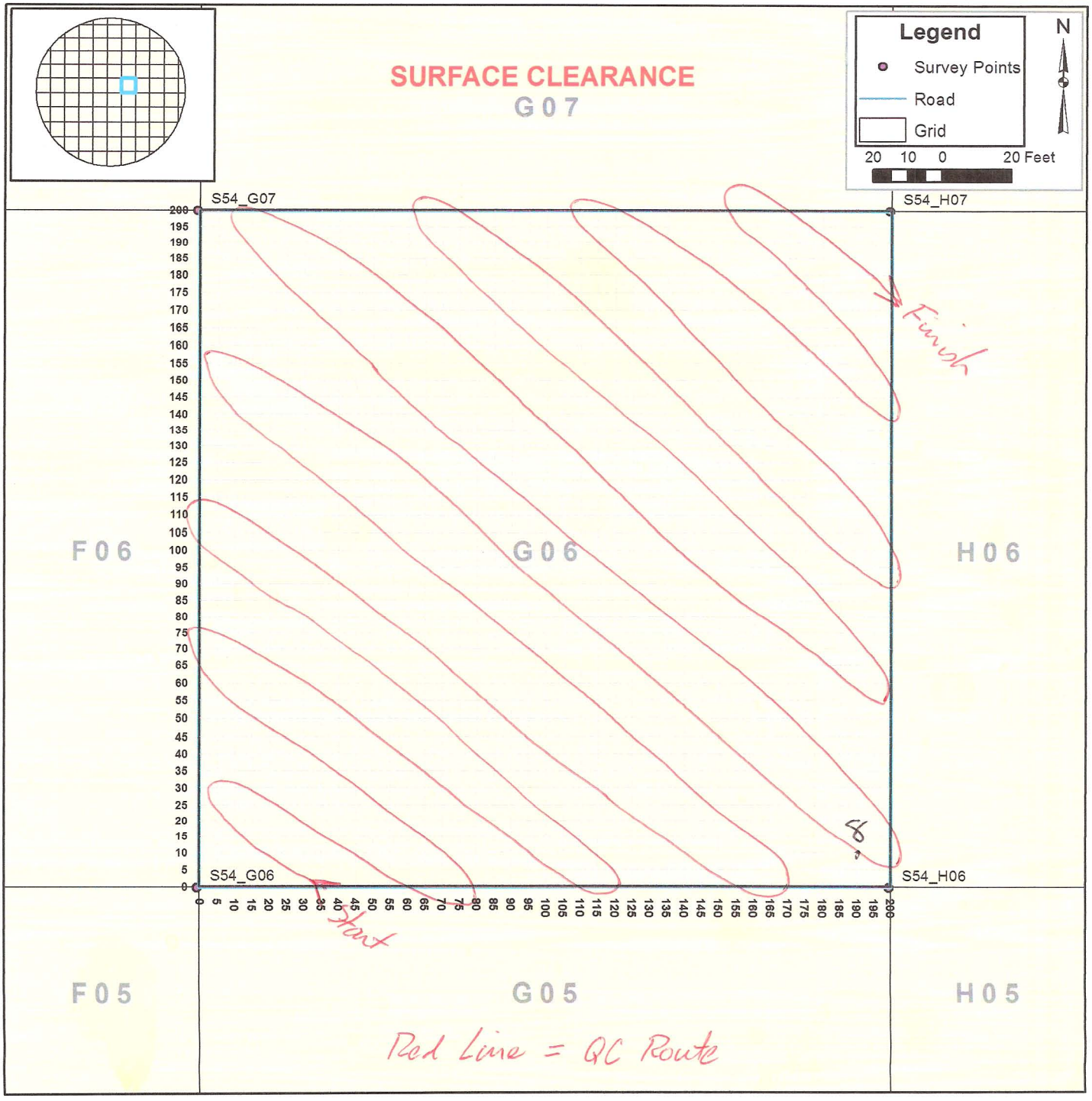
Digs: N/A
MEC #:
MEC Debris:
Scrap Metal:

Seed:
X: 180
Y: 10

	P	F	Date
QC :	X	☐	8/21/08
QA :	X	☐	8/25/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099656

S54 H-02 Team : (1) 2 3

Date Started: 8/18/08
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8/18/08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

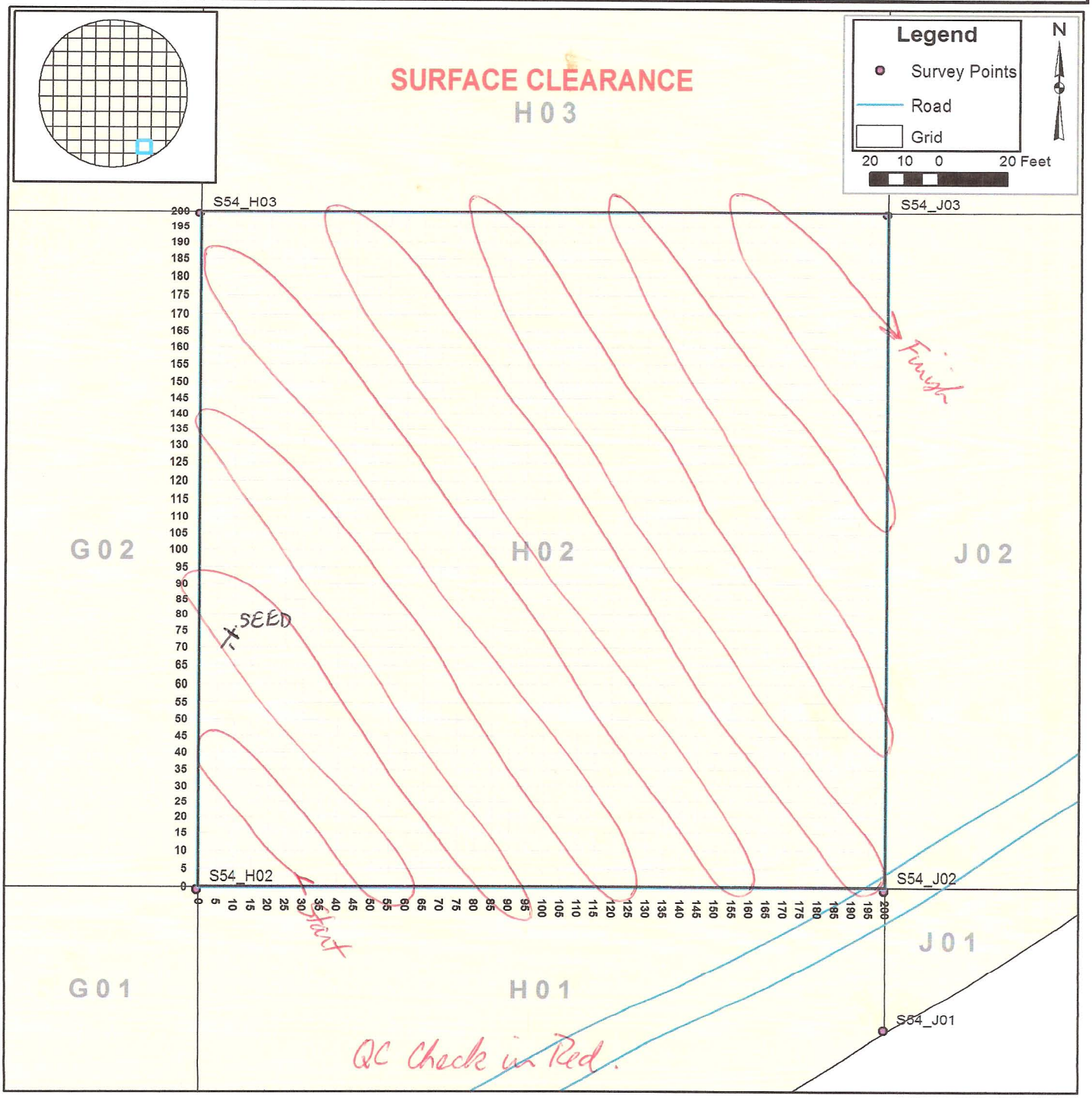
Digs: NA
MEC #: Ø
MEC Debris: 10lbs
Scrap Metal: 10lbs

Seed:
X: 9'
Y: 74'

	P	F	Date
QC :	☒	☐	8/21/08
QA :	☒	☐	8/25/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099657

S54 H-03 Team ① 2 3

Date Started: 8/19/2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8/19/2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

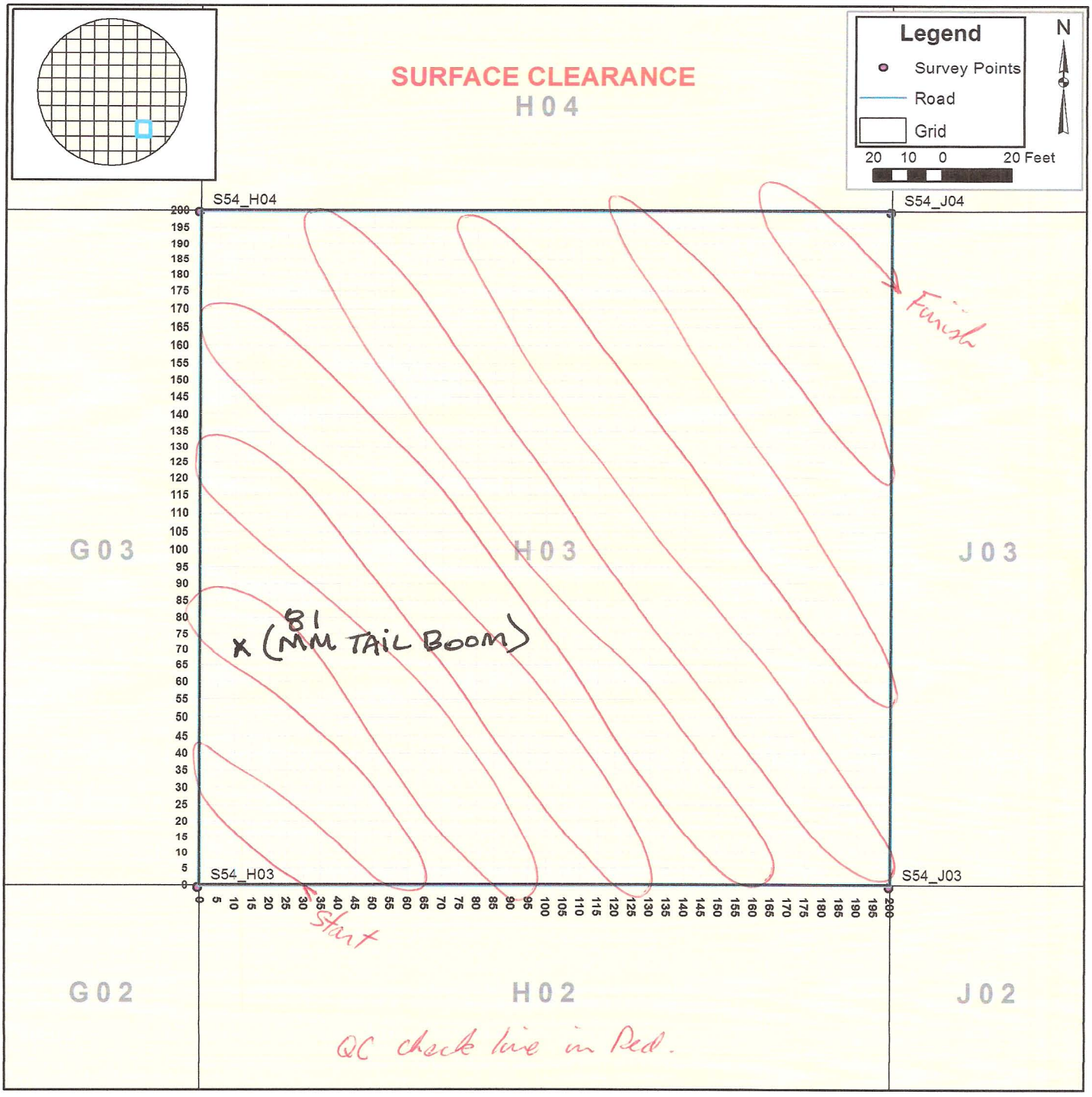
Digs: NA
MEC #: NA
MEC Debris: 60 lbs
Scrap Metal: 10 lbs

Seed:
X: 11'
Y: 71'

	P	F	Date
QC :	☒	☐	8/21/08
QA :	☒	☐	8/25/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099658

S54 H-04

Team : 1 2 3

Date Started: 8/19/2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 8/19/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 5 lbs

Scrap Metal: 10 lbs

Seed:

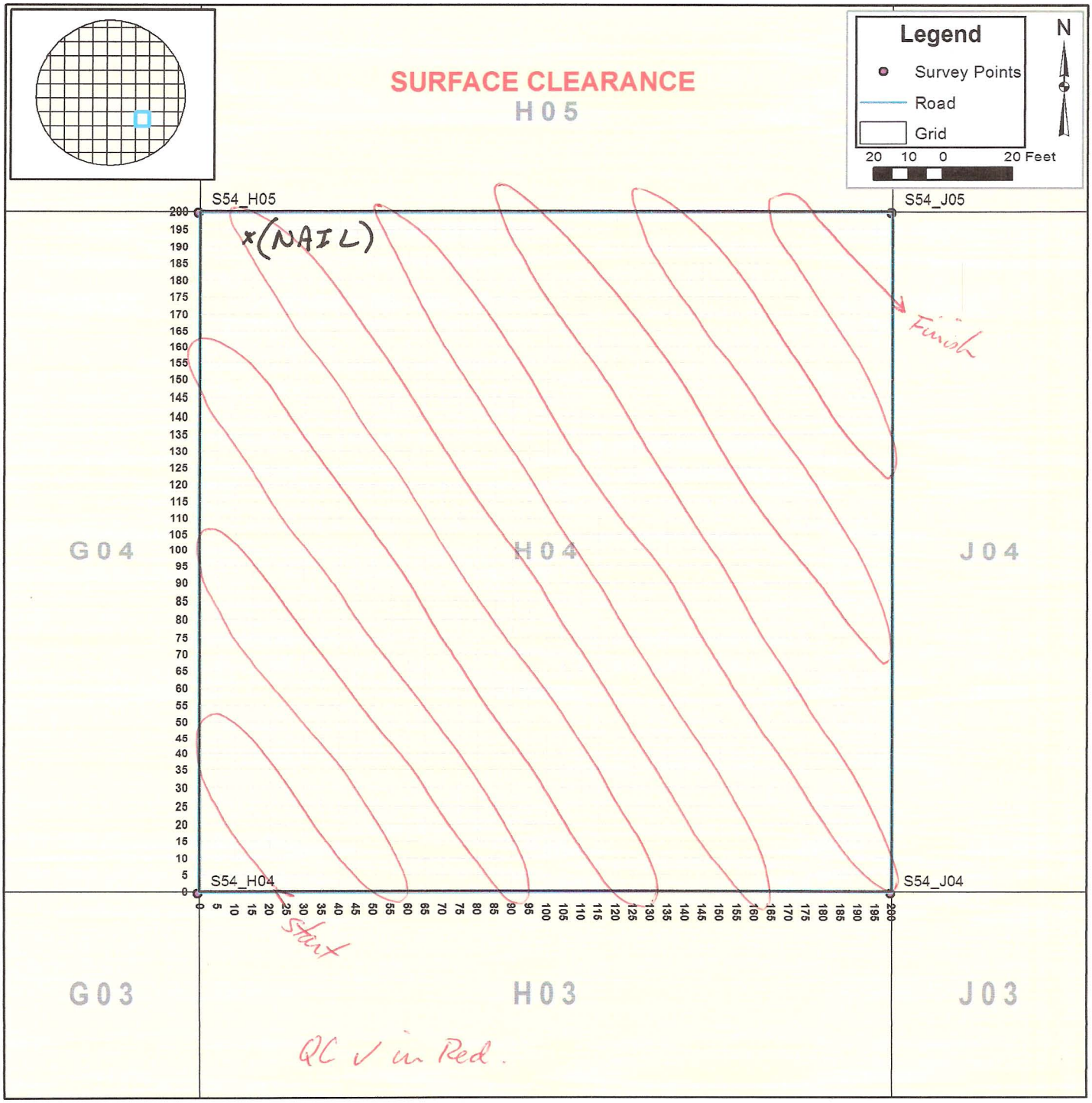
X: 14'

Y: 192'

	P	F	Date
QC :	☒	☐	8/21/08
QA :	☒	☐	8/25/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099659

S54 H-01 Team: 1 2 3

Date Started: 8/21/2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 8/21/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

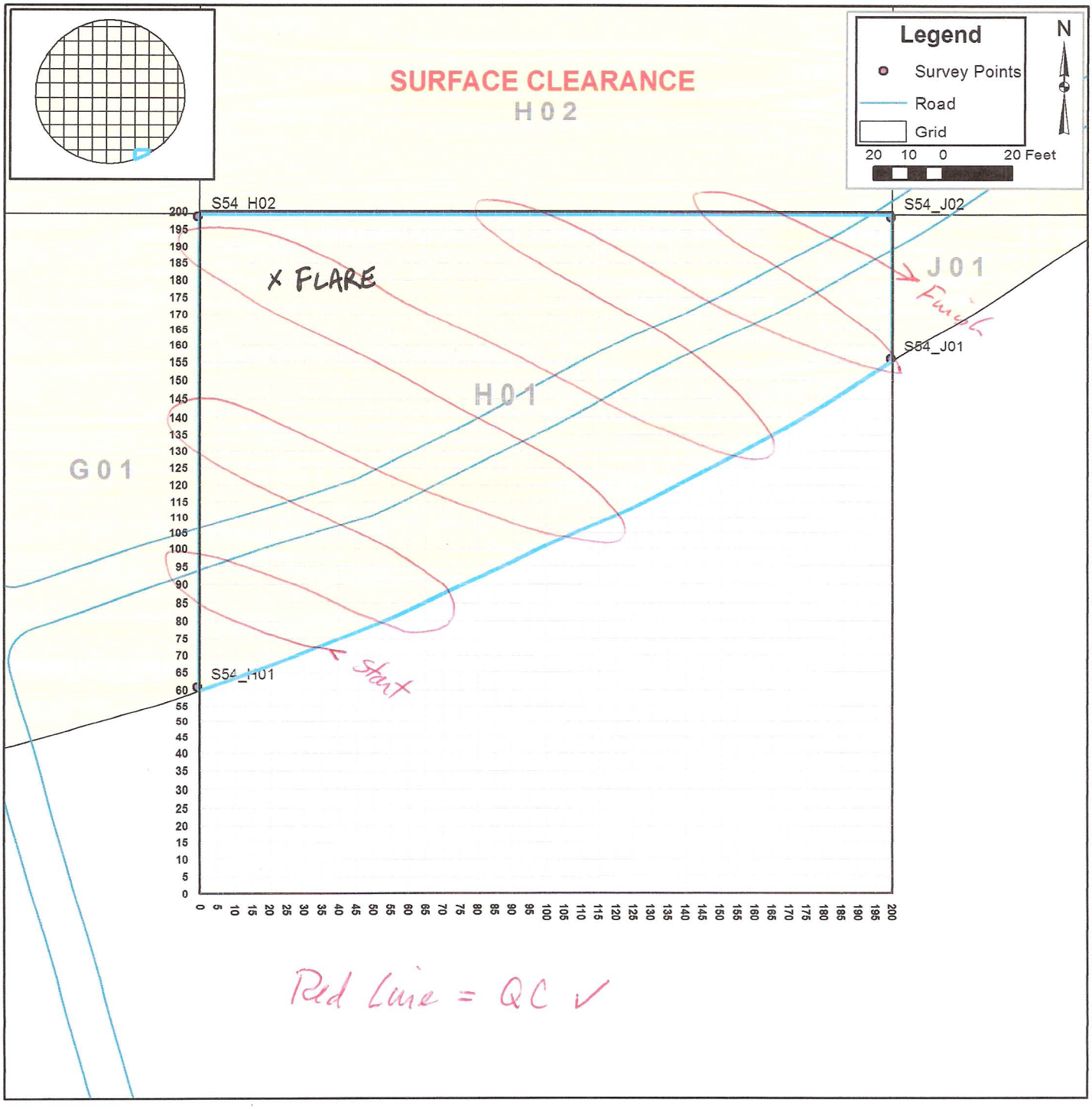
Digs: NA
MEC #: NA
MEC Debris: 216s
Scrap Metal: 216s

Seed:
X: 21'
Y: 181'

	P	F	Date
QC :	☒	☐	8/25/08
QA :	☒	☐	8/26/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099660

S54 J-01 Team (1) 2 3

Date Started: 8/21/2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8/21/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

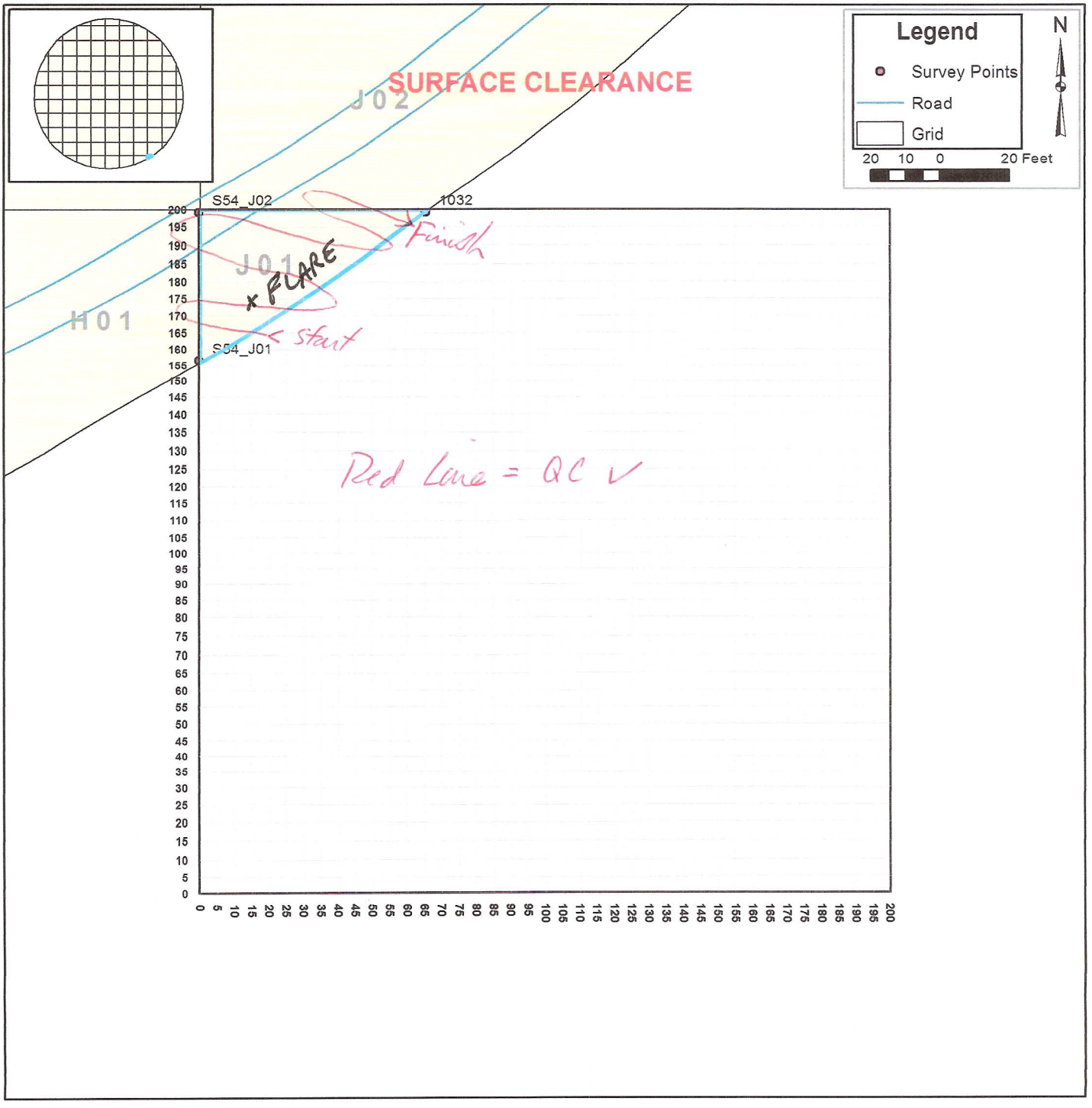
Digs: NA
MEC #: NA
MEC Debris: Slbs
Scrap Metal: Slbs

Seed:
X: 20'
Y: 179'

	P	F	Date
QC :	☒	☐	8/25/08
QA :	☑	☐	8/25/08 8/26/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099661

S54 J-02

Team: 1 2 3

Date Started: 8/21/2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 8/21/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 5 Lbs

Scrap Metal: 50 lbs

Seed:

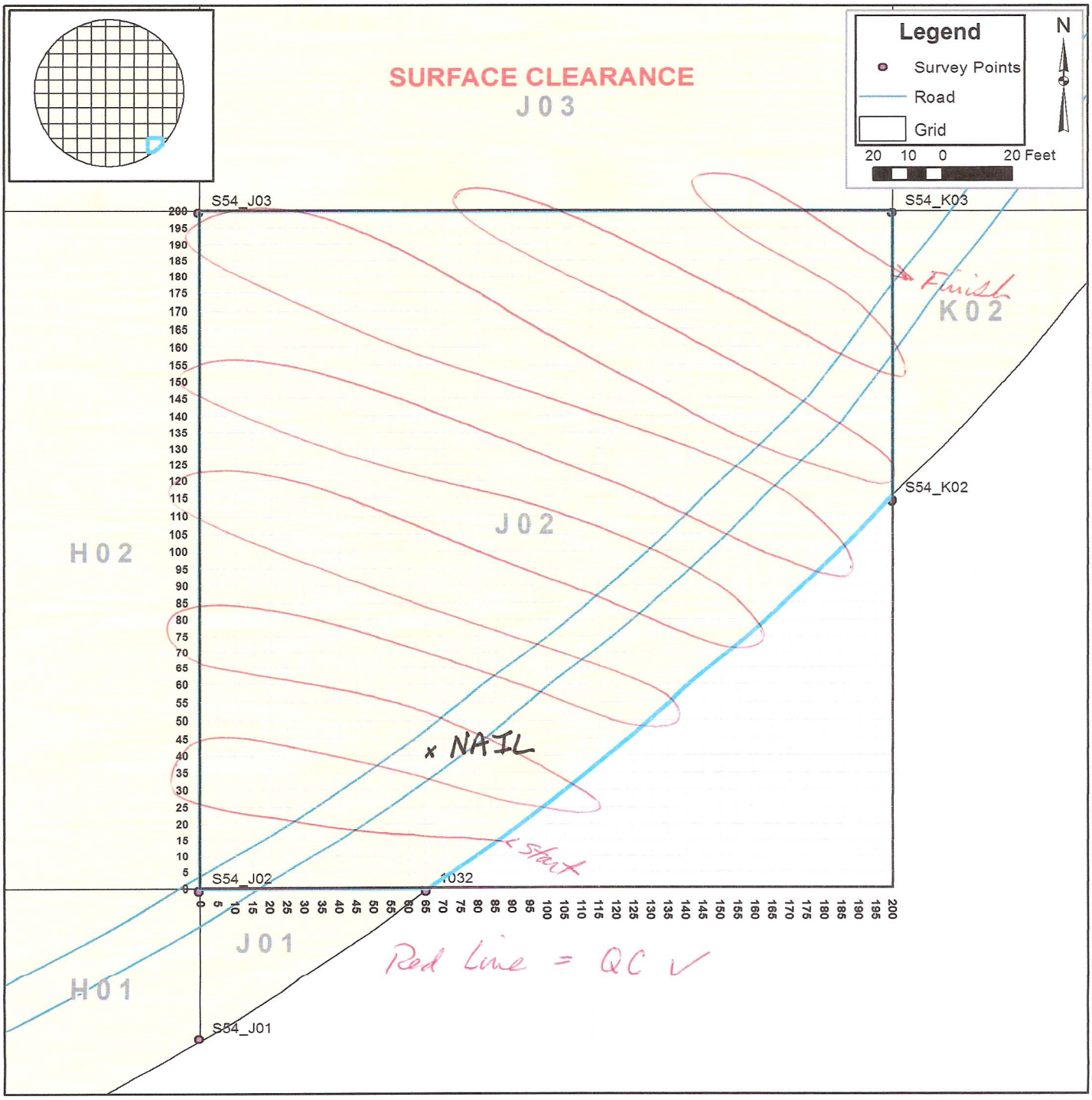
X: 66'

Y: 41'

	P	F	Date
QC :	☒	☐	8/25/08
QA :	☑	☐	8/26/08 1403

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099662

S54 J-03 Team (1) 2 3

Date Started: 8/21/2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 8/21/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

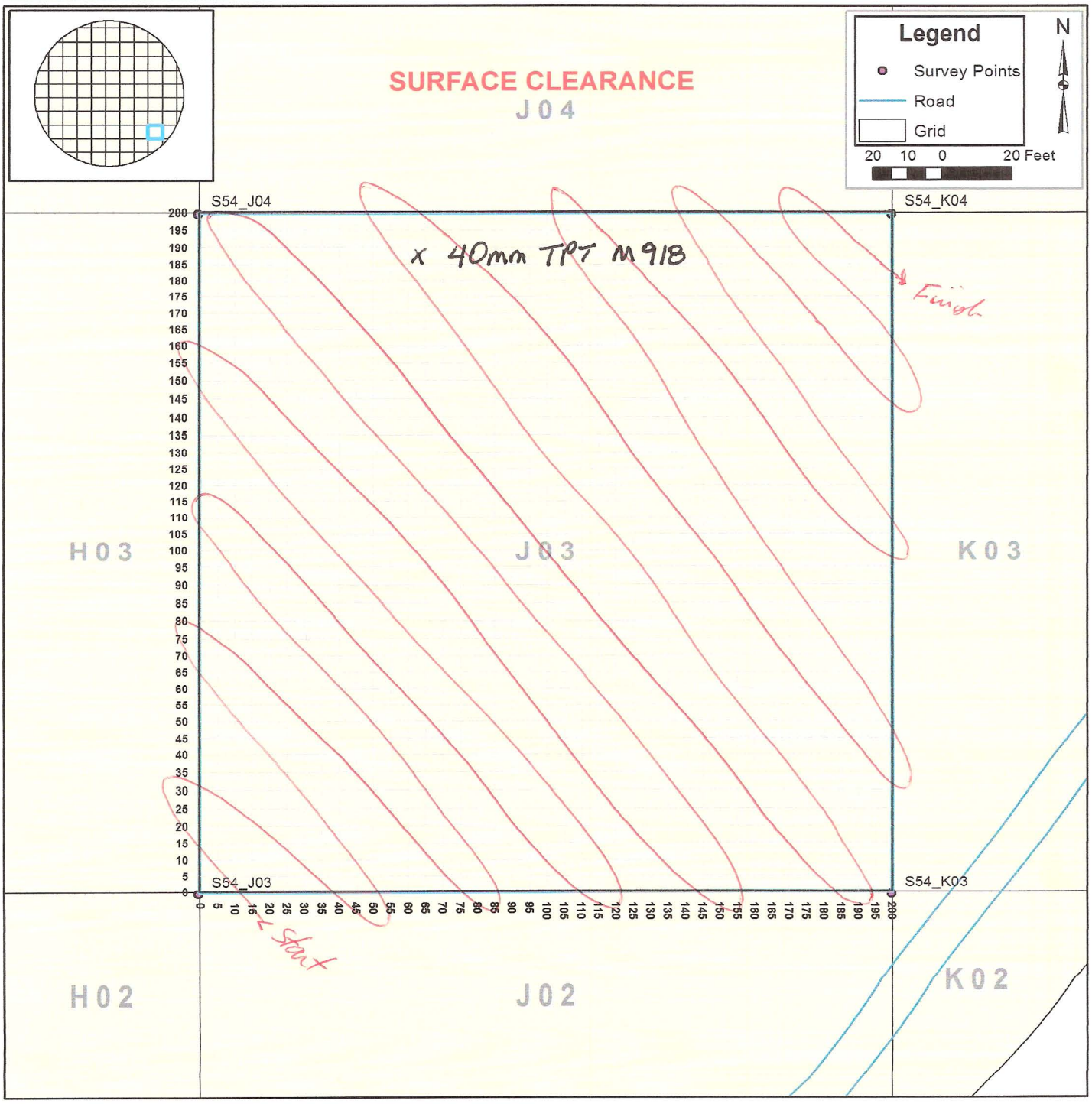
Digs: NA
MEC #: NA
MEC Debris: 5 lbs
Scrap Metal: 125 lbs

Seed:
X: 63'
Y: 188'

	P	F	Date
QC :	☒	☐	8/25/08
QA :	☒	☐	8/26/08 KOB

Comments:

Qty	Depth(in)	Nomenclature	Filler



Red Line = QC ✓

00099663

S54 J-04 Team (1) 2 3

Date Started: 8/20/2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 8/21/2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

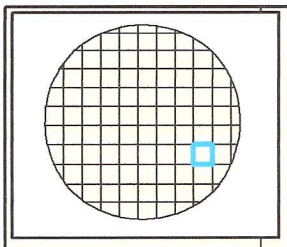
Digs: NA
MEC #: NA
MEC Debris: 10 lbs
Scrap Metal: 30 lbs

Seed:
X: 110'
Y: 52'

	P	F	Date
QC :	☒	☐	8/25/08
QA :	☒	☐	8/26/08 KM

Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

J05

Legend
Survey Points
Road
Grid
20 10 0 20 Feet
N

S54_J05 S54_K05

S54_J04 S54_K04

H04 J04 K04

H03 J03 K03

Finish

Start

× 81mm Illum

Red Line = QC ✓

00099664

S54 F-09 Team : 1 2 (3)

Date Started: 25 AUG 08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 25 AUG 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

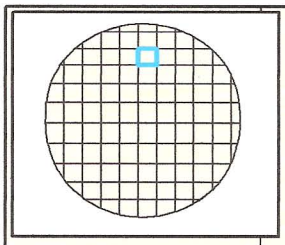
Digs: 0
MEC #: 0
MEC Debris: 60
Scrap Metal: 150

Seed:
X: 50
Y: 122

	P	F	Date
QC :	☒	☐	8/26/08
QA :	☑	☐	8/26/08 KAT

Comments:

Qty	Depth(in)	Nomenclature	Filler



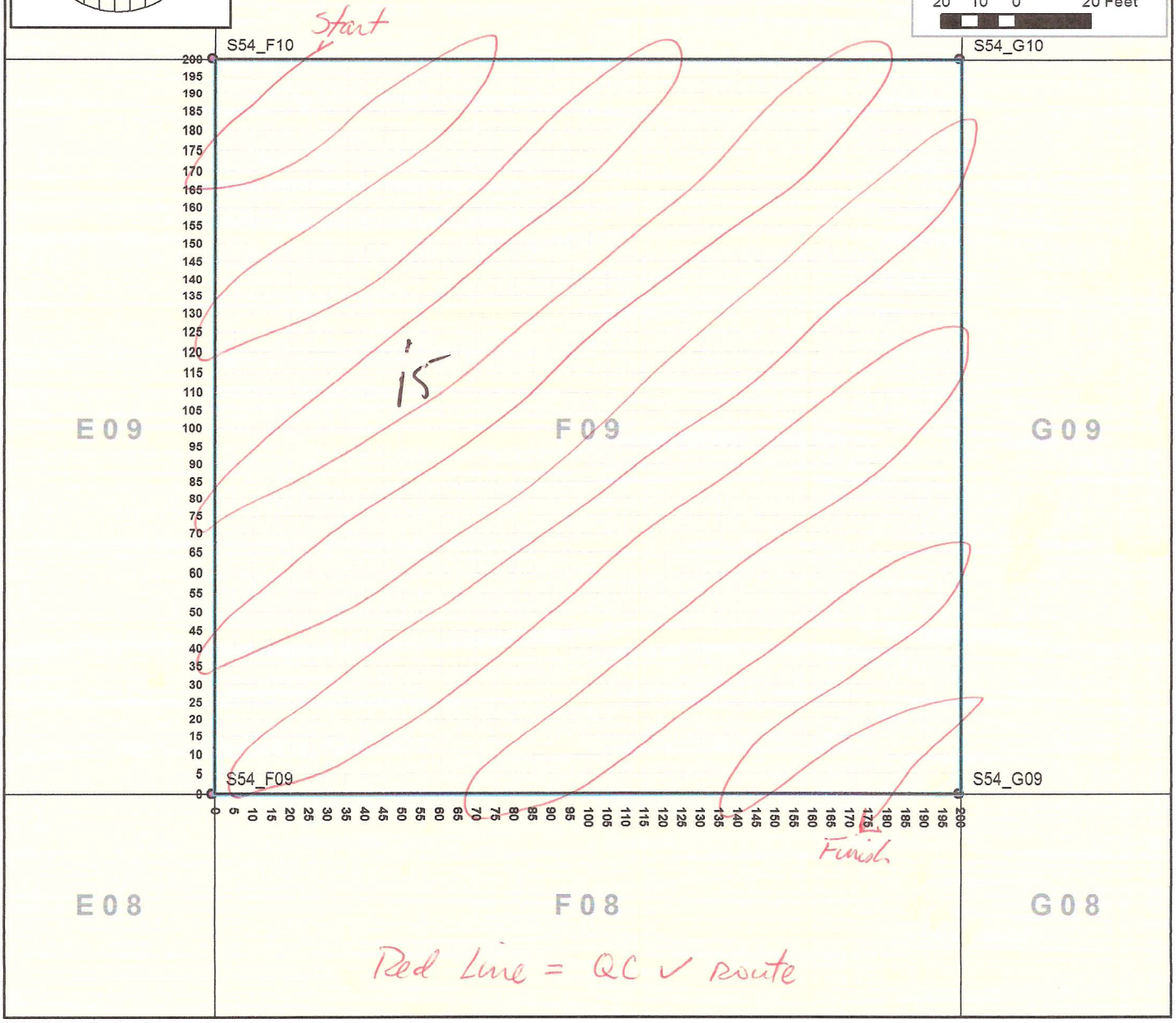
SURFACE CLEARANCE

F 10

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



Red Line = QC ✓ Route

00099665

S54 F-10

Team : 1 2 (3)

Date Started: 25 AUG 08

Date Surveyed: N/A

Date Gru:bbed:

Date Finished: 25 AUG 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☐ -Sand

Digs: 0

MEC #: 0

MEC Debris: 40

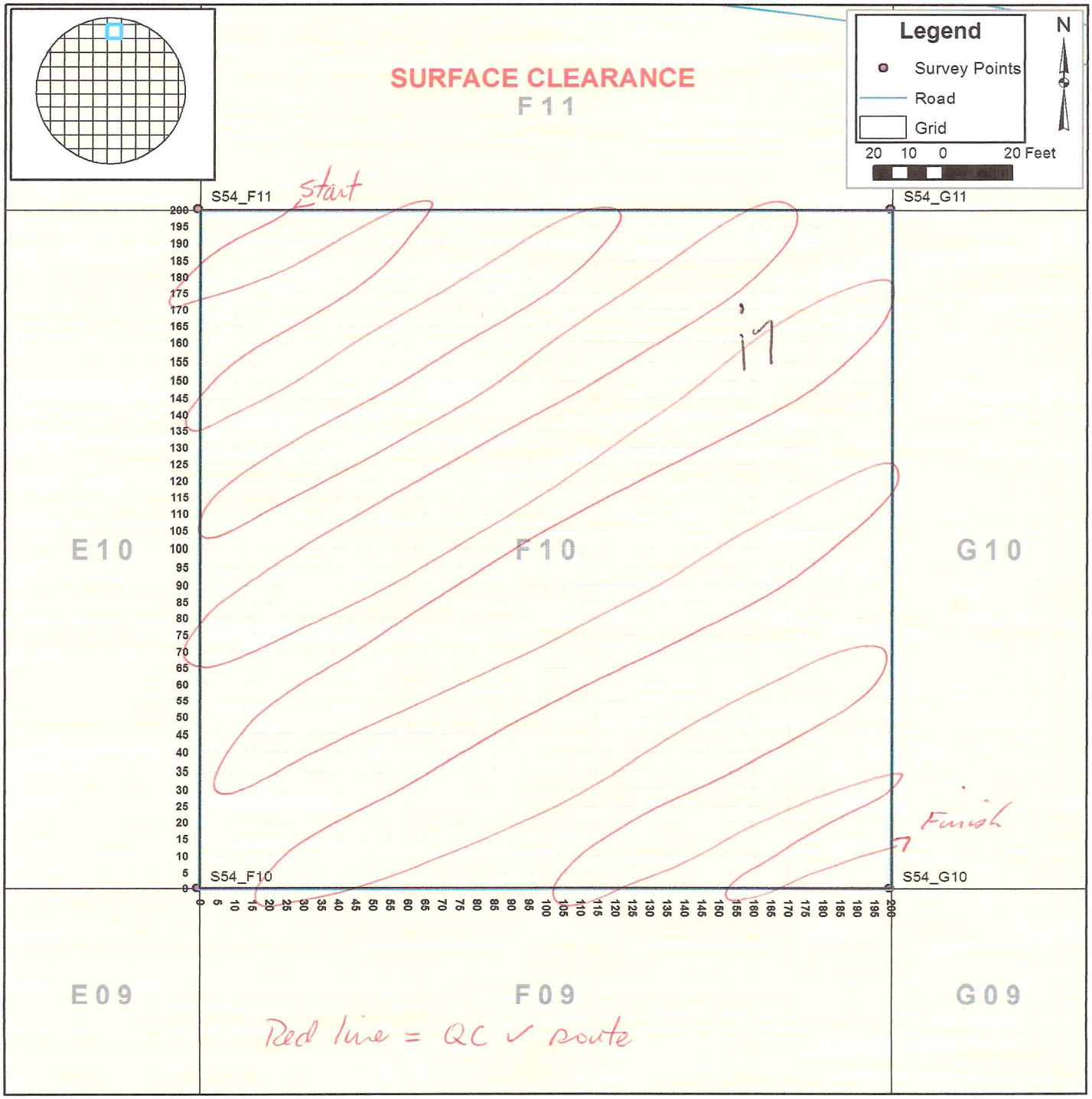
Scrap Metal: 60

Seed:
X: 170
Y: 170

	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	8/26/08 EDB

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099666

S54 F-11 Team : 1 2 3

Date Started: 25 Aug 08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 25 Aug 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☐ -Sand

Digs: 0
MEC #: 0
MEC Debris: 0
Scrap Metal: 60

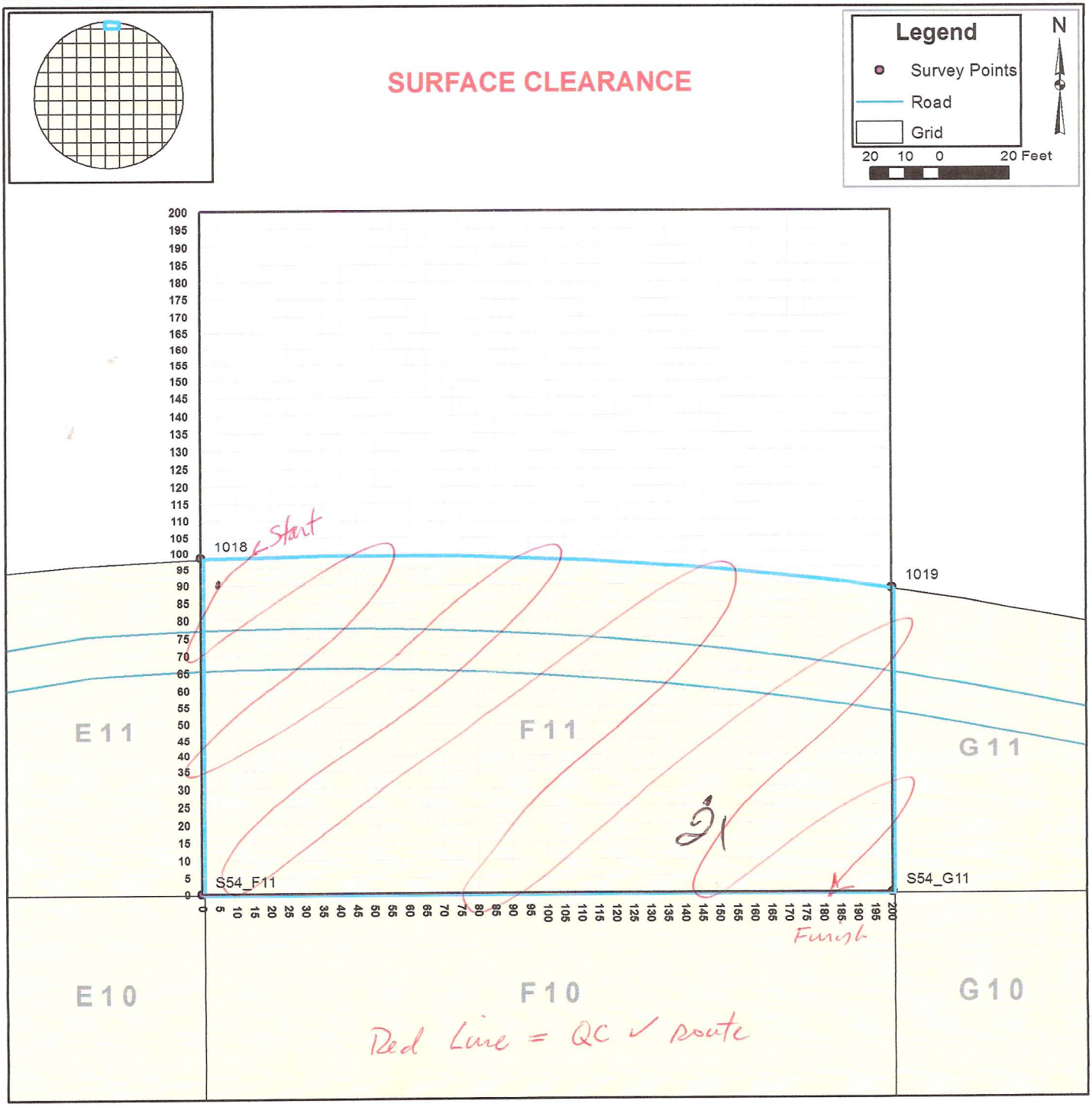
Seed:
X: 149
Y: 30

	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	8/26/08 KMB

Comments:

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE



00099667

S54 G-10 Team : 1 2 (3)

Date Started: 25Aug08
Date Surveyed: N/A
Date Grubbed:
Date Finished: 25Aug08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ ~~-Sand~~

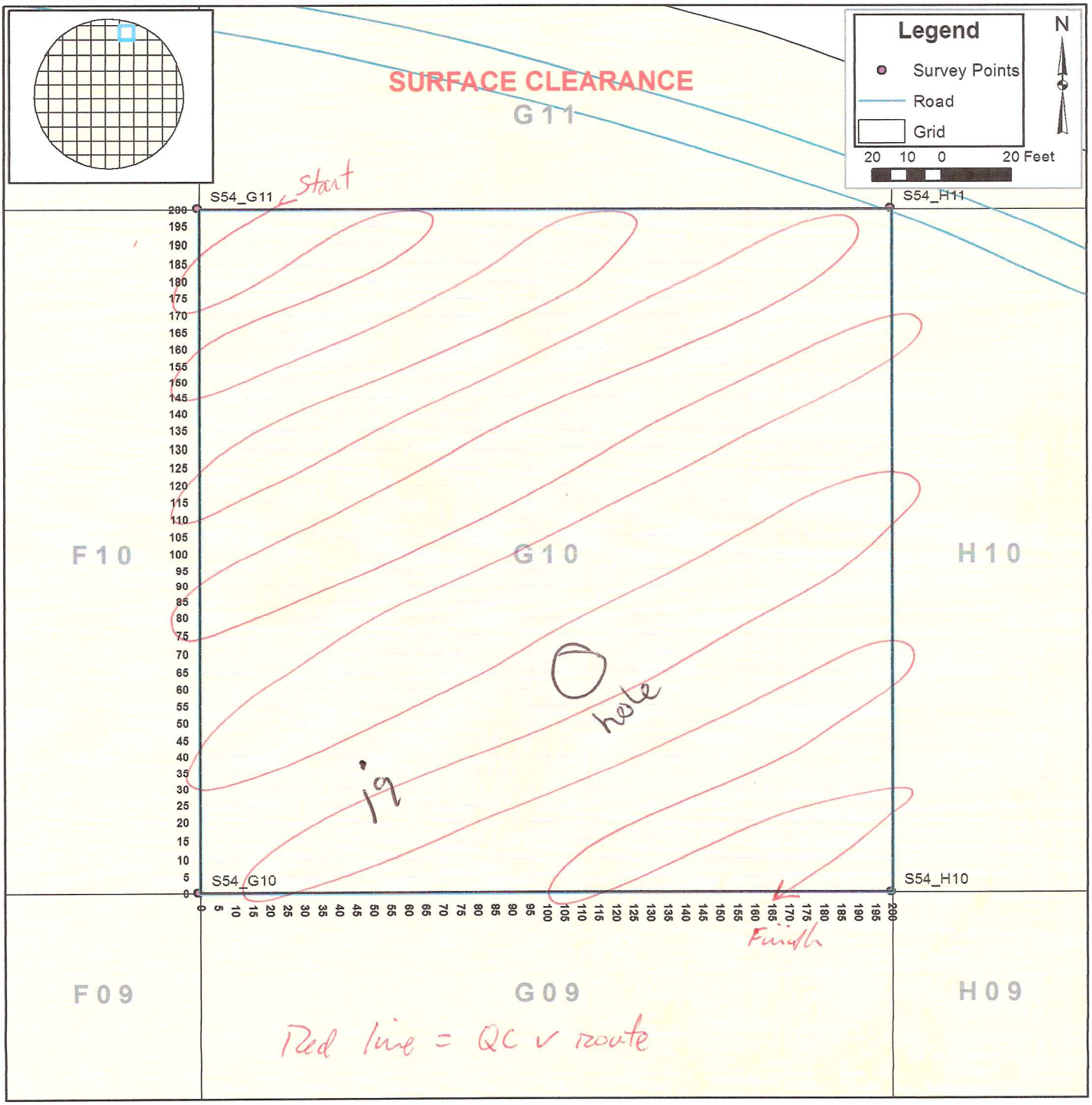
Digs: 0
MEC #: 0
MEC Debris: 15
Scrap Metal: 0

Seed:
X: 42
Y: 410

	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	8/26/08 KMB

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099668

S54 G-11 Team :1 2 3

Date Started: 25AUG08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 25AUG08

Soil:
☐-Clay
☐-Limestone
☐-Loam
☑-Sand

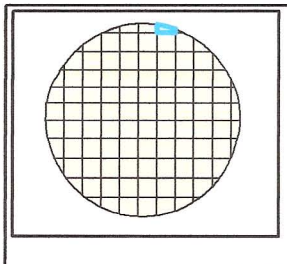
Digs: 6
MEC #: 2
MEC Debris: 5
Scrap Metal: 50

Seed:
X: 15
Y: 80

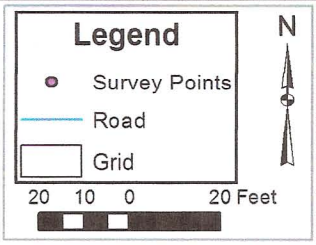
	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	8/26/08 MTB

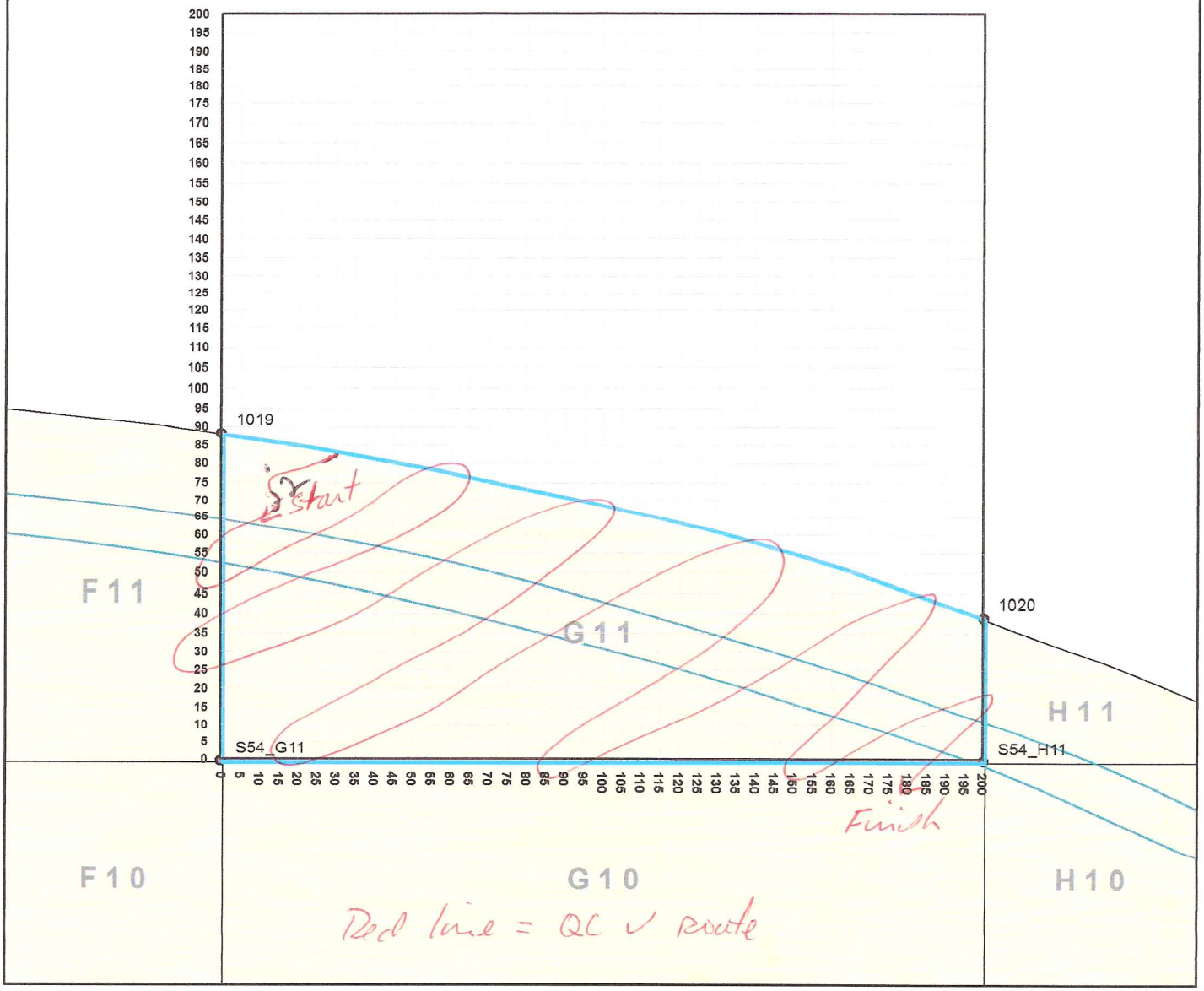
Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE





00099669

S54 G-07 Team :1 2 (3)

Date Started: 19 AUG 08
Date Surveyed: N/A
Date Gru:bbed: N/A
Date Finished: 21 AUG 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☐ -Sand

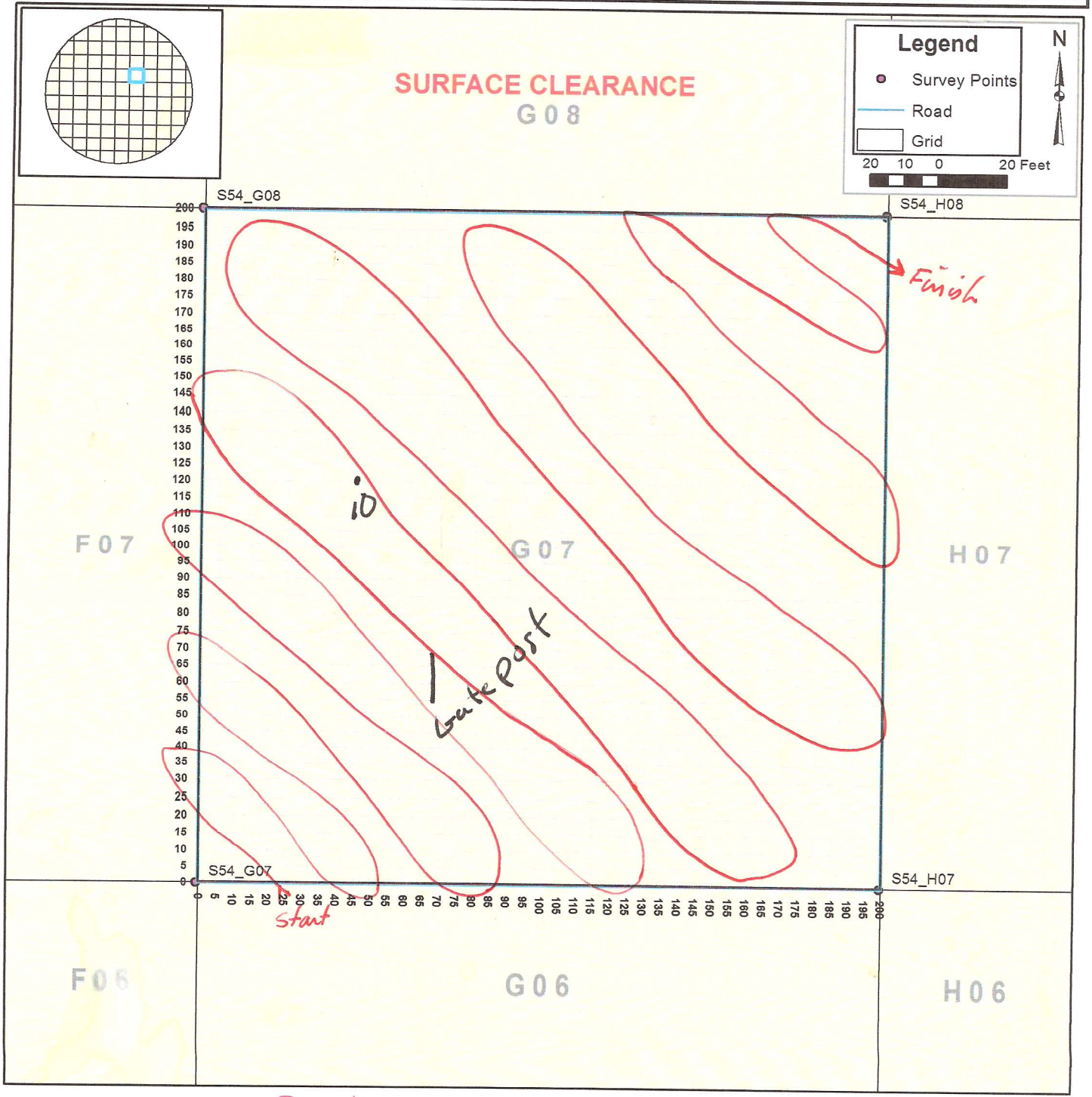
Digs: N/A
MEC #: 0
MEC Debris: 75
Scrap Metal: 10

Seed:
X: 45
Y: 120

	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	8/27/08 EOR

Comments: QC comments - this grid (along w/ G-08) is in an area with lots of small anomalies just below ground cover.

Qty	Depth(in)	Nomenclature	Filler



Red line = QC ✓ route

00099670

S54 K-05 Team: 1 2 3

Date Started: 8/25/2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 8/25/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 10 lbs

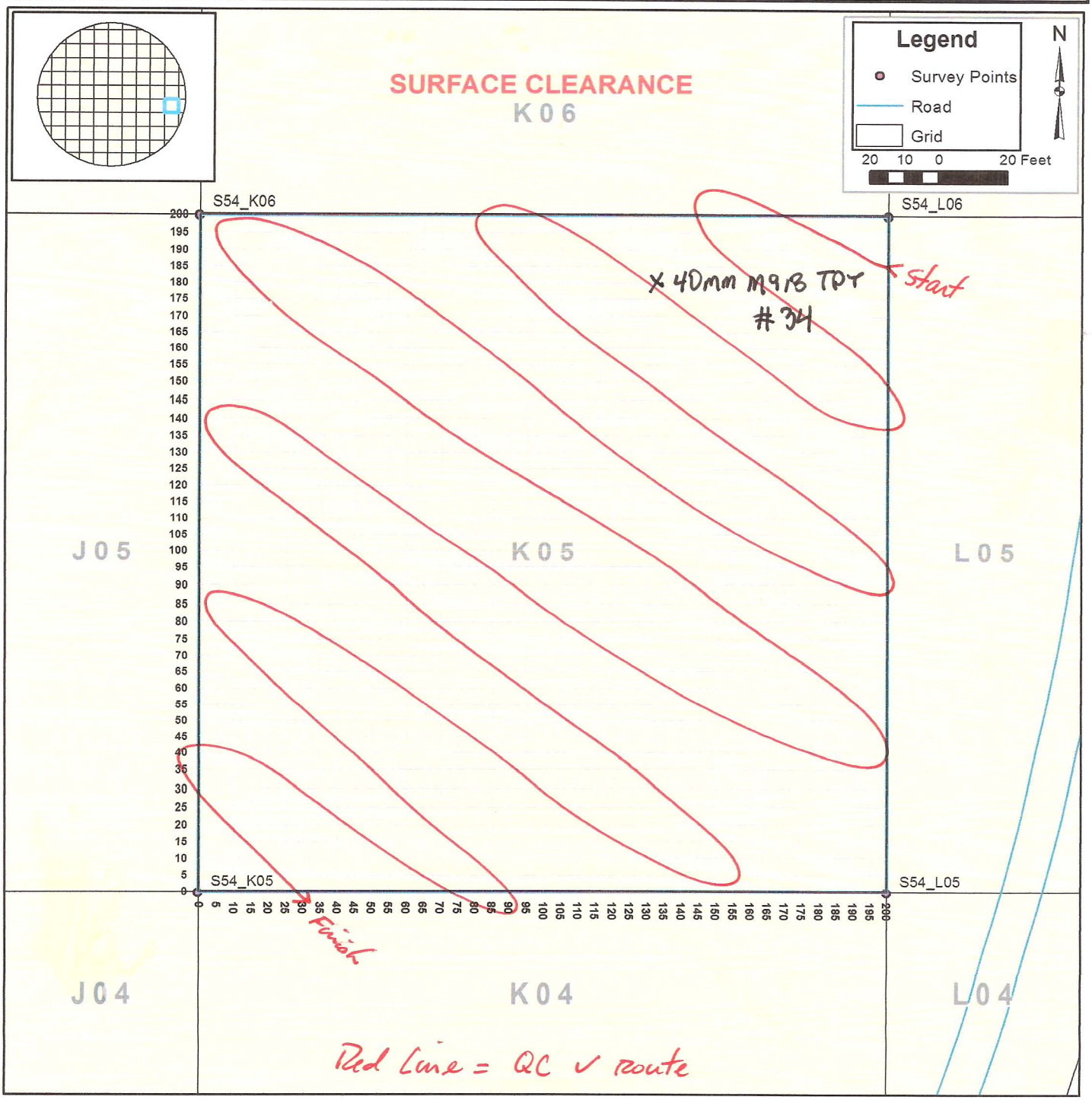
Scrap Metal: 30 lbs

Seed:
X: 133'
Y: 130'

	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	8/27/08 EMP

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099671

S54 K-06 Team (1) 2 3

Date Started: 8/25/2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8/25/2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

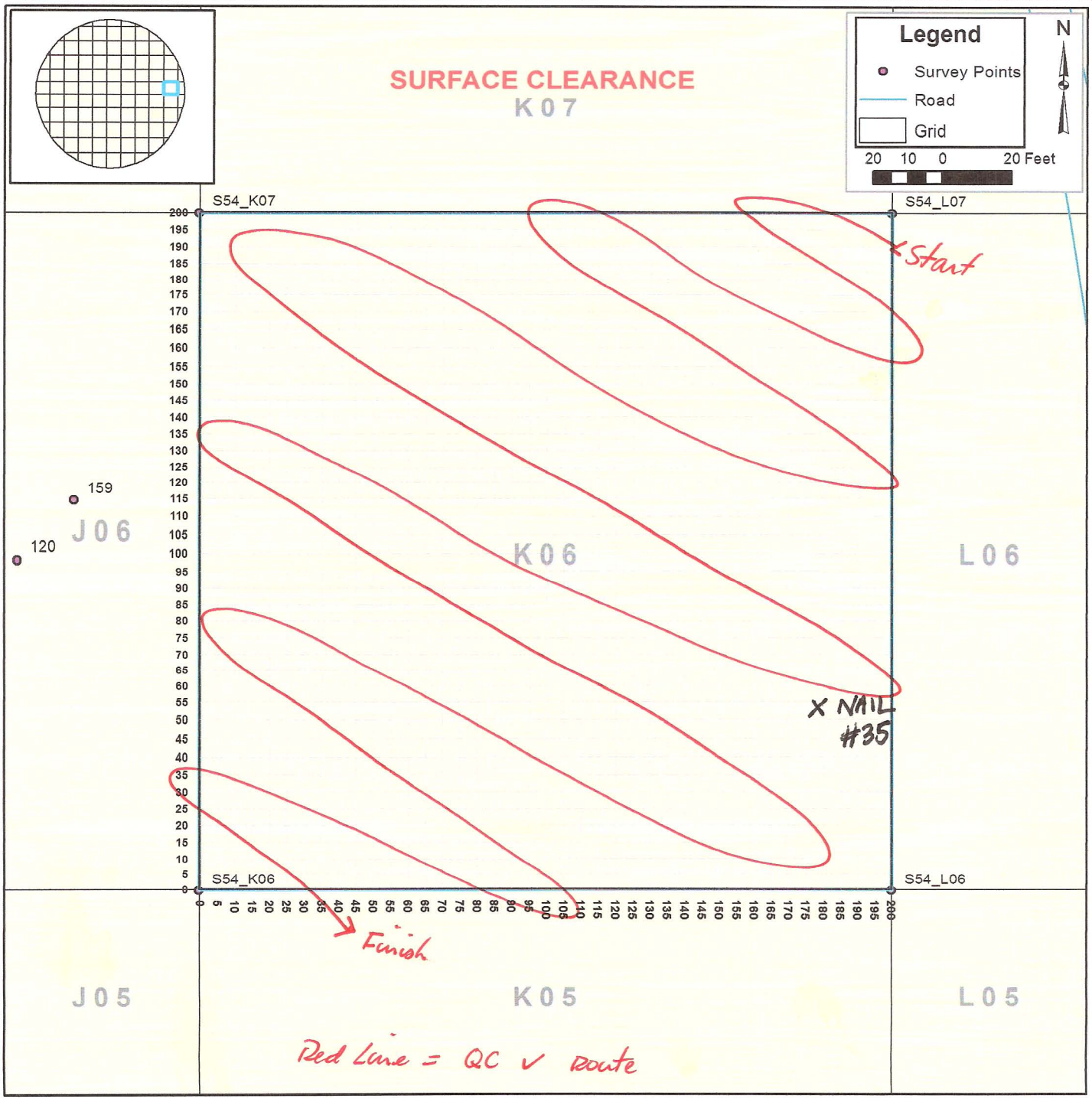
Digs: NA
MEC #: NA
MEC Debris: 50 lbs
Scrap Metal: 100 lbs

Seed:
X: 178'
Y: 53'

	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	8/27/08 KM

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099672

S54 K-07 Team : 1 2 3

Date Started: 8/25/2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 8/25/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 25 lbs

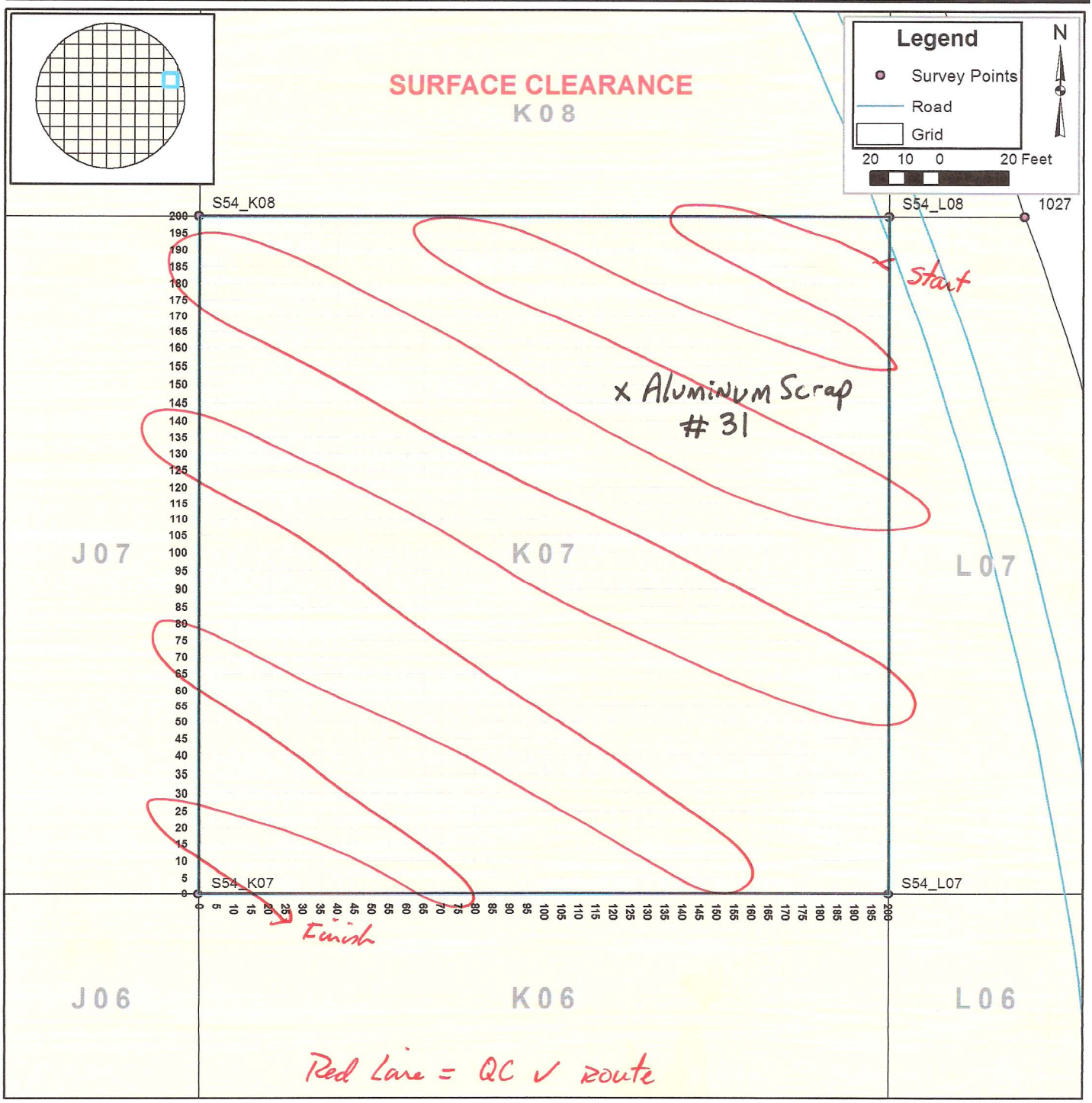
Scrap Metal: 10 lbs

Seed:
X: 121'
Y: 147'

	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	8/27/08 KJB

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099673

S54 K-08 Team (1) 2 3

Date Started: 8/25/2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8/25/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

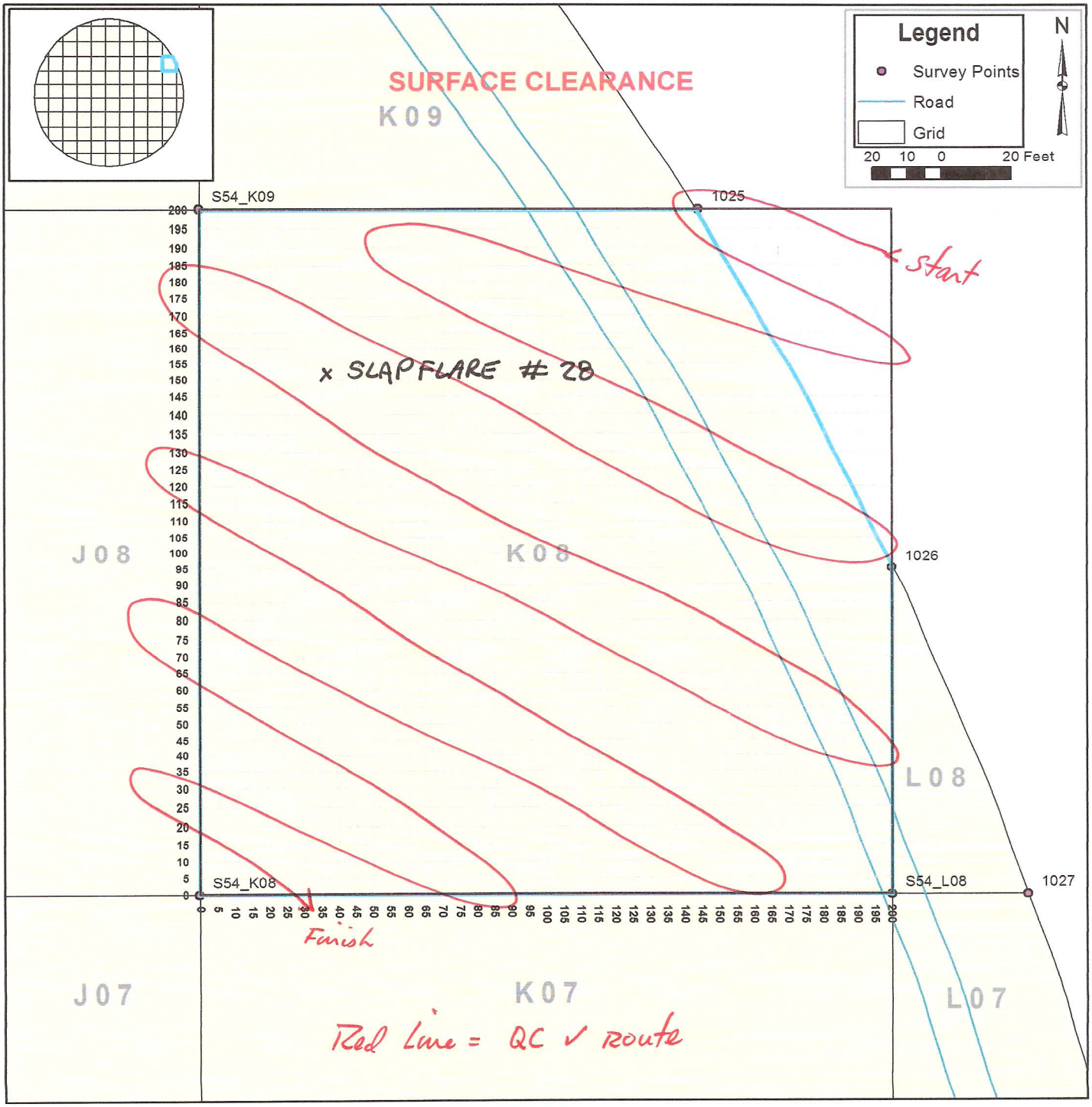
Digs: NA
MEC #: NA
MEC Debris: 35 lbs
Scrap Metal: 125 lbs

Seed:
X: 37'
Y: 152'

	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	8/27/08 KMB

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099674

S54 K-09 Team (1) 2 3

Date Started: 8/25/2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 8/25/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA
MEC #: NA
MEC Debris: 5 lbs
Scrap Metal: 25 lbs

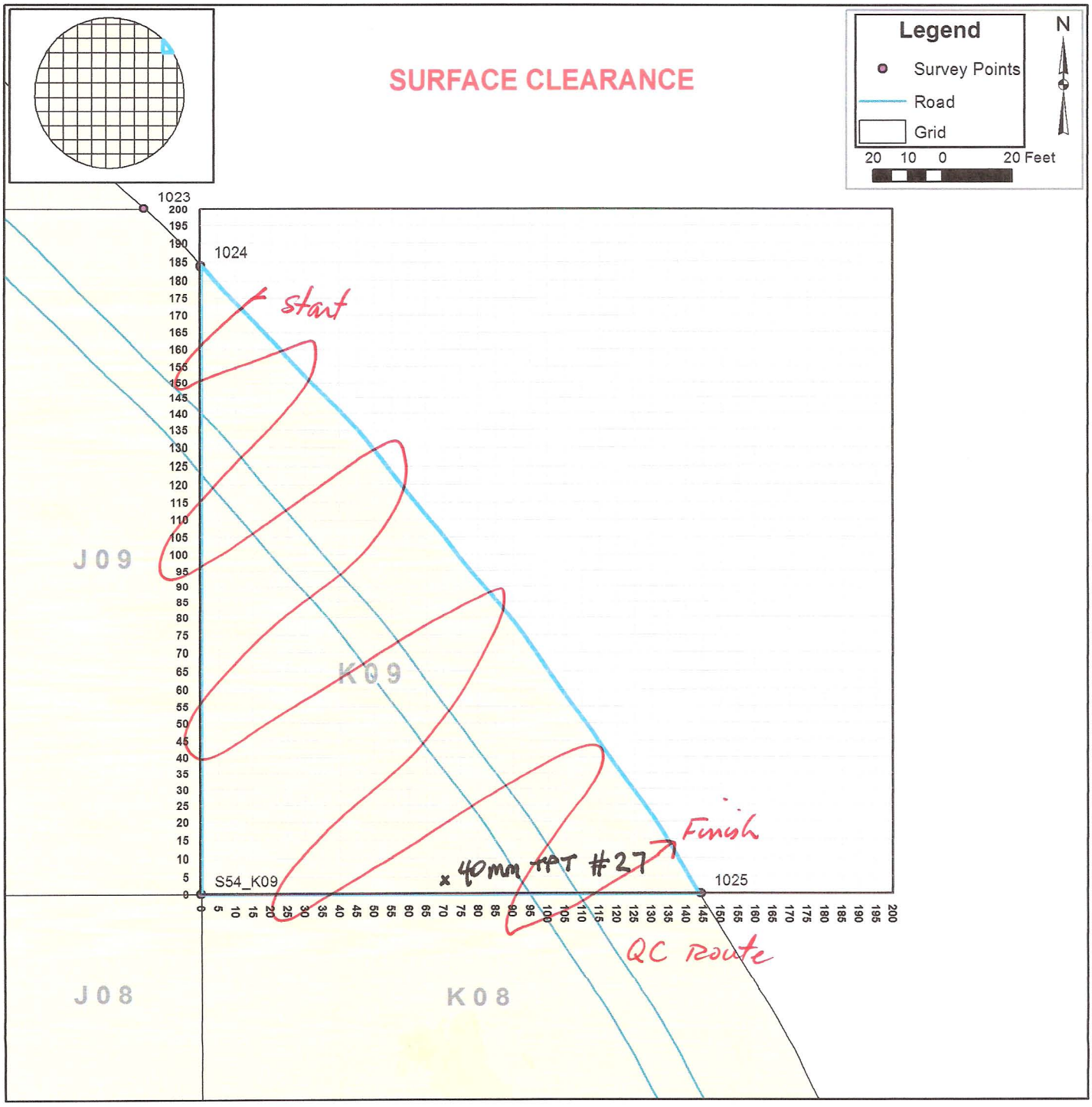
Seed:
X: 71'
Y: 4'

	P	F	Date
QC:	☒	☐	8/26/08
QA:	☒	☐	8/27/08 KMB

Comments:

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE



00099675

S54 L-05 Team (1) 2 3

Date Started: 8/25/2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 8/25/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

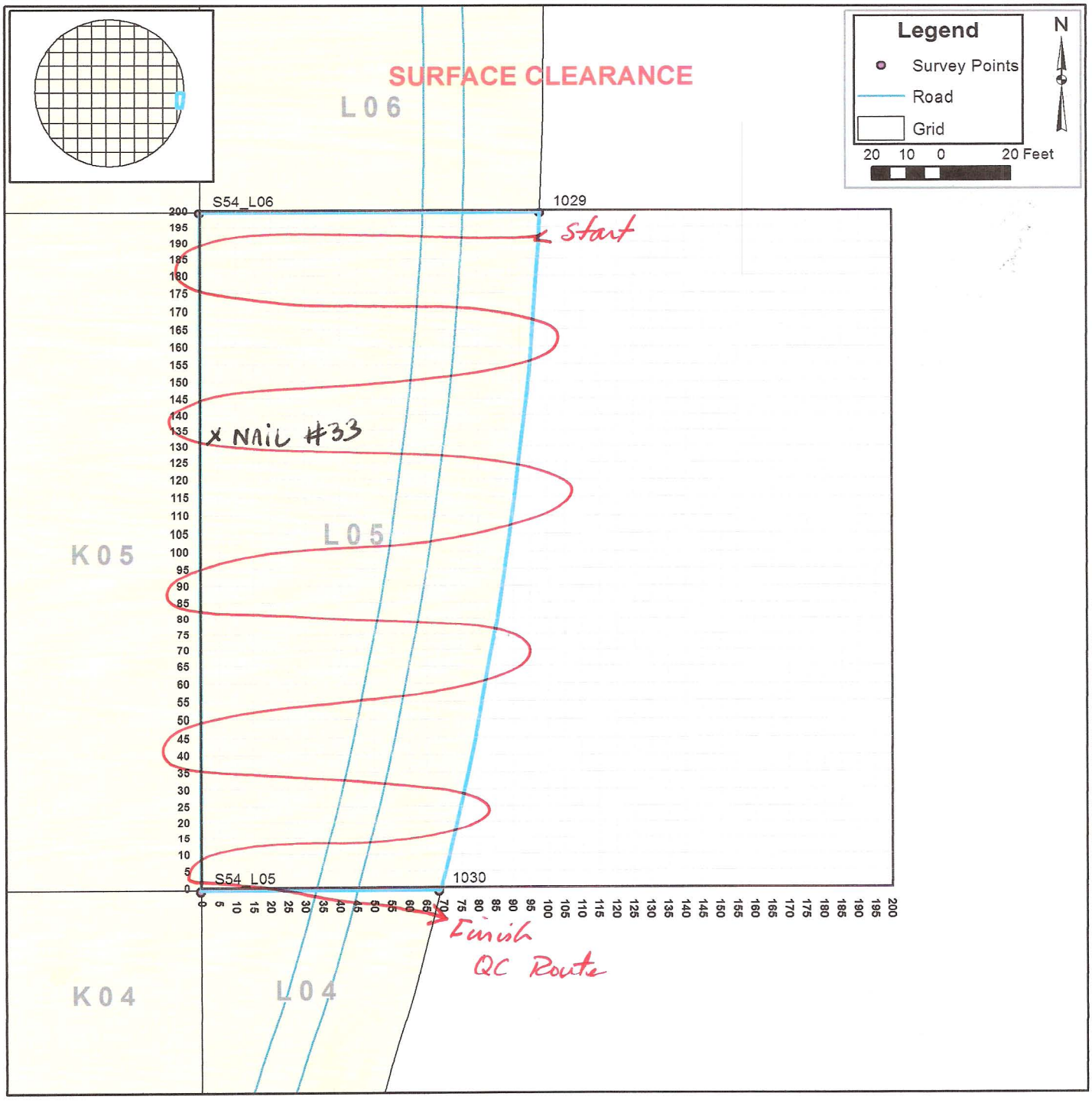
Digs: NA
MEC #: NA
MEC Debris: 5lbs
Scrap Metal: 80lbs

Seed:
X: 4'
Y: 134'

	P	F	Date
QC:	☒	☐	8/26/08
QA:	☒	☐	8/27/08 KWB

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099676

S54 L-06

Team (1) 2 3

Date Started: 8/25/2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 8/25/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

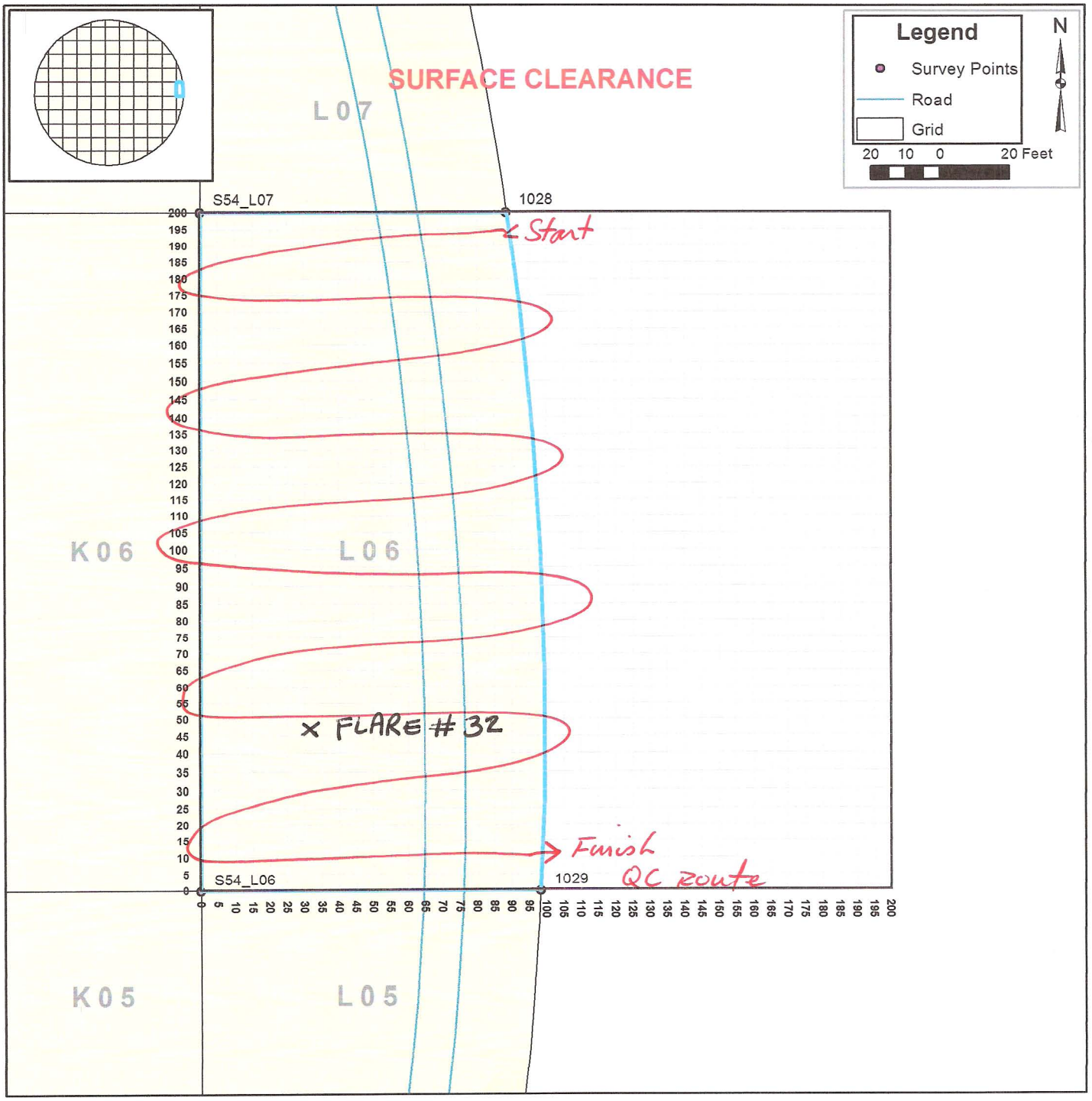
Digs: NA
MEC #: NA
MEC Debris: 25 lbs
Scrap Metal: 35 lbs

Seed:
X: 32'
Y: 46'

	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	8/27/08 KOMS

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099677

S54 L-07 Team (1) 2 3

Date Started: 8/25/2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8/25/2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

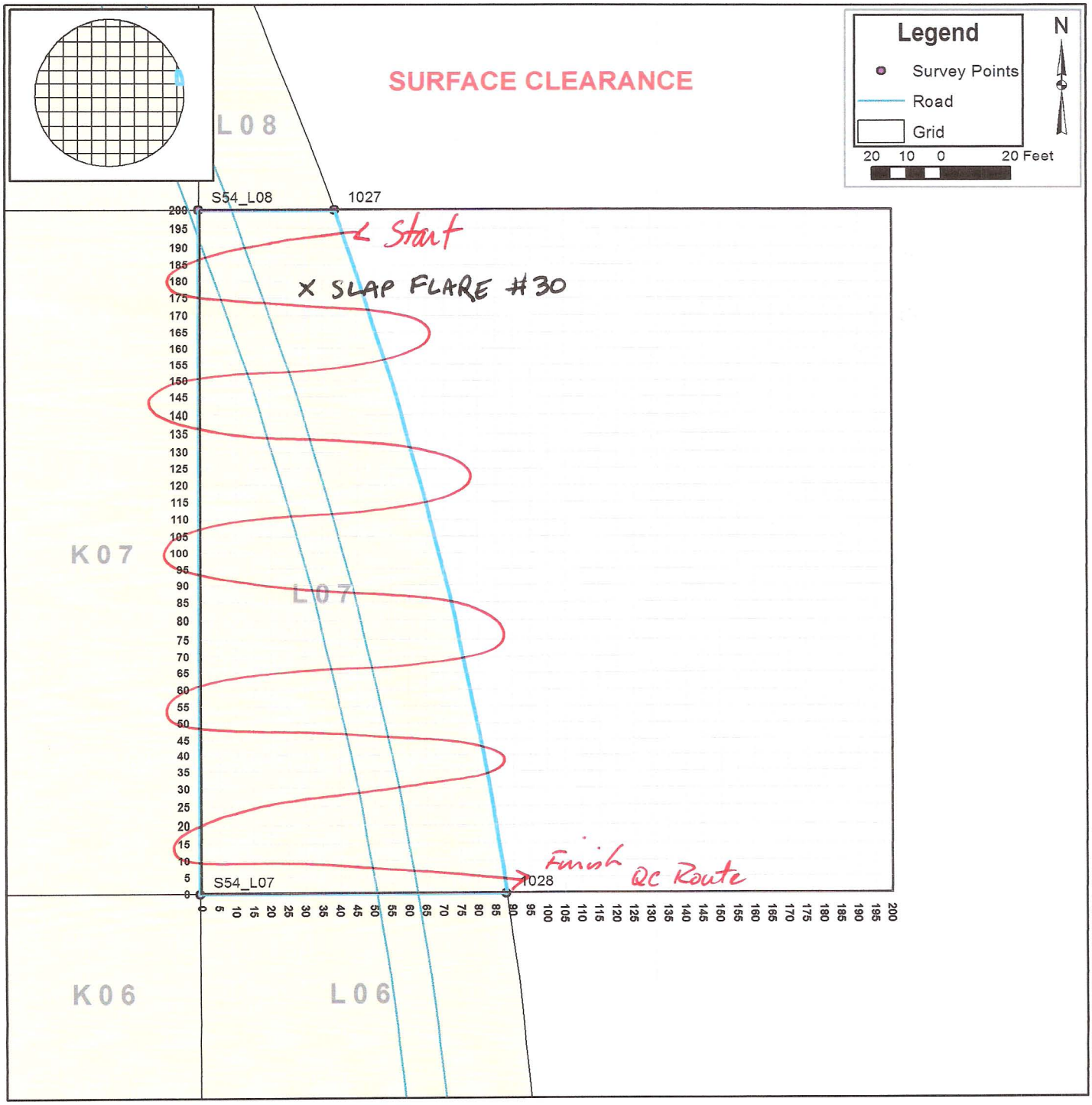
Digs: NA
MEC #: NA
MEC Debris: 5 lbs
Scrap Metal: 5 lbs

Seed:
X: 30'
Y: 177'

	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	8/27/08 KMB

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099678

S54 L-08 Team (1) 2 3

Date Started: 8/25/2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8/25/2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

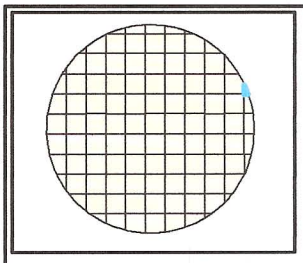
Digs: NA
MEC #: NA
MEC Debris: 5 lbs
Scrap Metal: 5 lbs

Seed:
X: 32'
Y: 4'

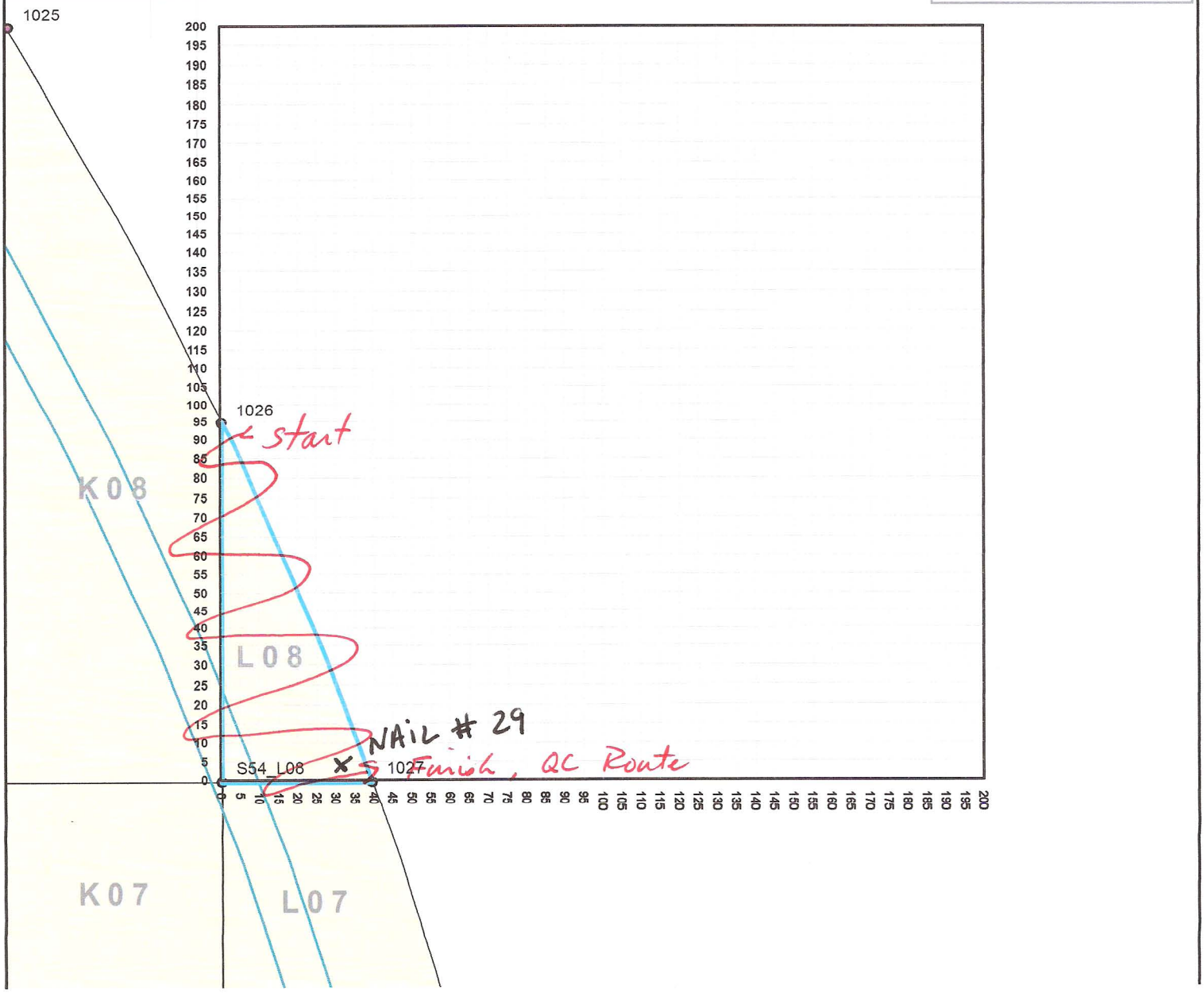
	P	F	Date
QC :	☒	☐	8/26/08
QA :	☒	☐	9/27/08 KMB

Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE



00099679

S54 E-09

Team : 1 2 (3)

Date Started: 26 AUG 08

Date Surveyed: N/A

Date Gru:bbed:

Date Finished: 26 AUG 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N/A

MEC #: 0

MEC Debris: 60

Scrap Metal: 0

Seed:

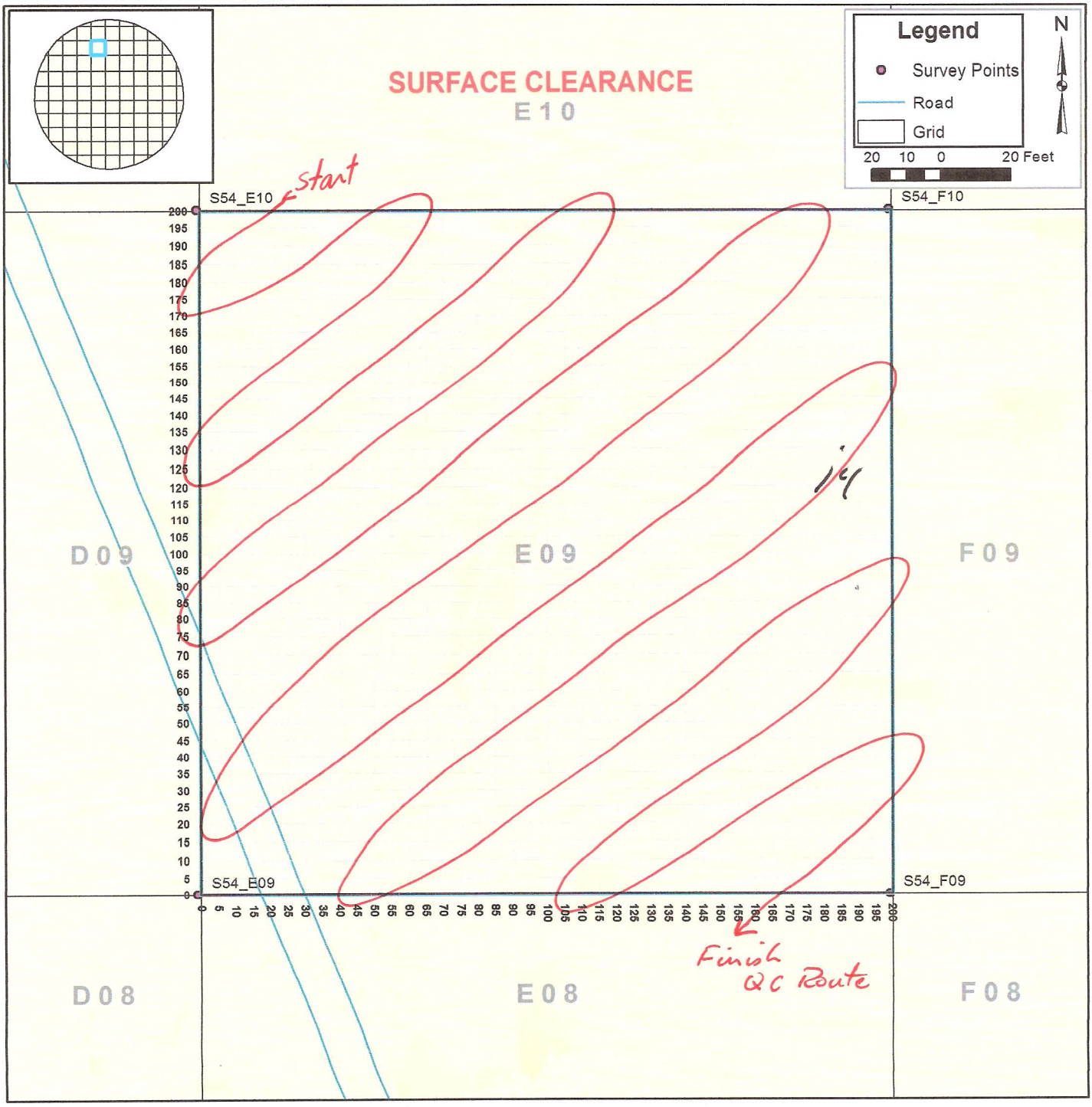
X: 190

Y: 160

	P	F	Date
QC :	☒	☐	8/27/08
QA :	☐	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099680

S54 E-10

Team : 1 2 (3)

Date Started: 26 Aug 08

Date Surveyed: N/A

Date Gru:bbed:

Date Finished: 26 Aug 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ ~~-Sand~~

Digs: N/A

MEC #: 0

MEC Debris: 40

Scrap Metal: 0

Seed:

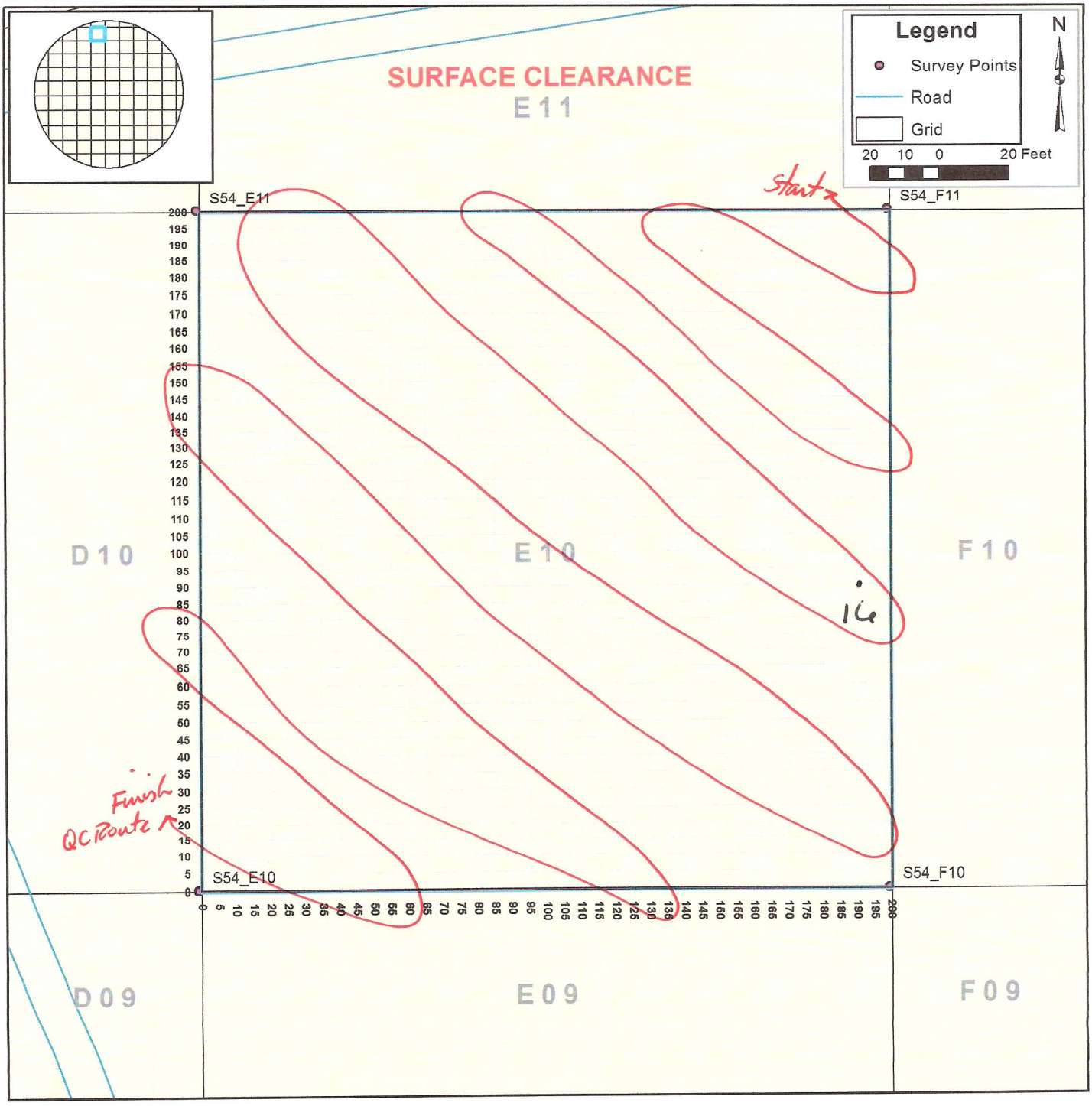
X: 190

Y: 90

	P	F	Date
QC :	☒	☐	8/27/08
QA :	☒	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099681

S54 E-11

Team : 1 2 (3)

Date Started: 26 Aug 08

Date Surveyed: N/A

Date Grubbed: _____

Date Finished: 26 Aug 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N/A

MEC #: 0

MEC Debris: 35

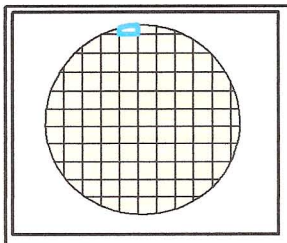
Scrap Metal: 20

Seed:
X: 20
Y: 1

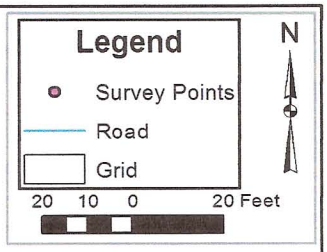
	P	F	Date
QC :	☒	☐	8/27/08
QA :	☒	☐	8/28/08

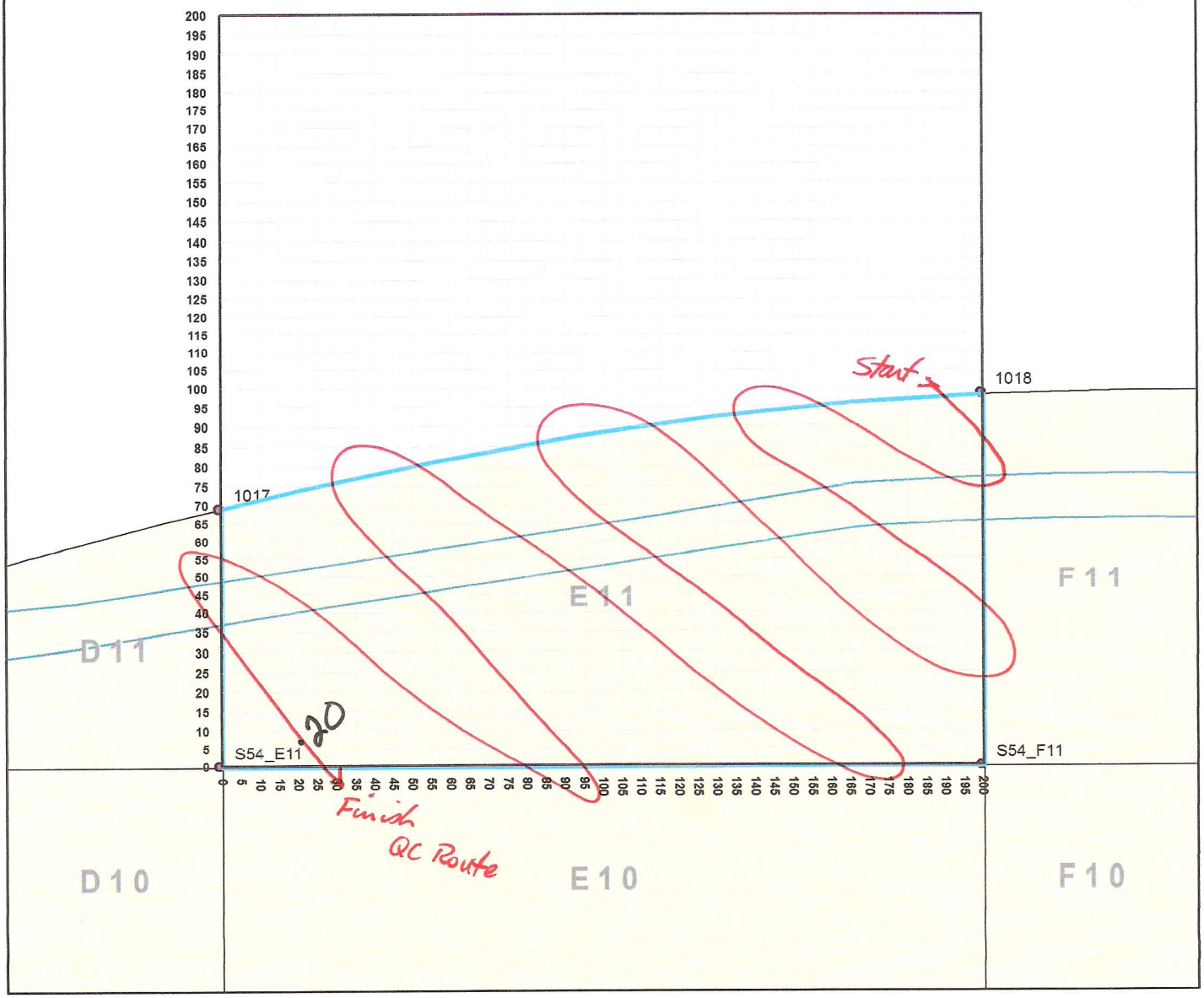
Comments: _____

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE





00099682

S54 J-05 Team: 1 2 3

Date Started: 8-26-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: _____

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

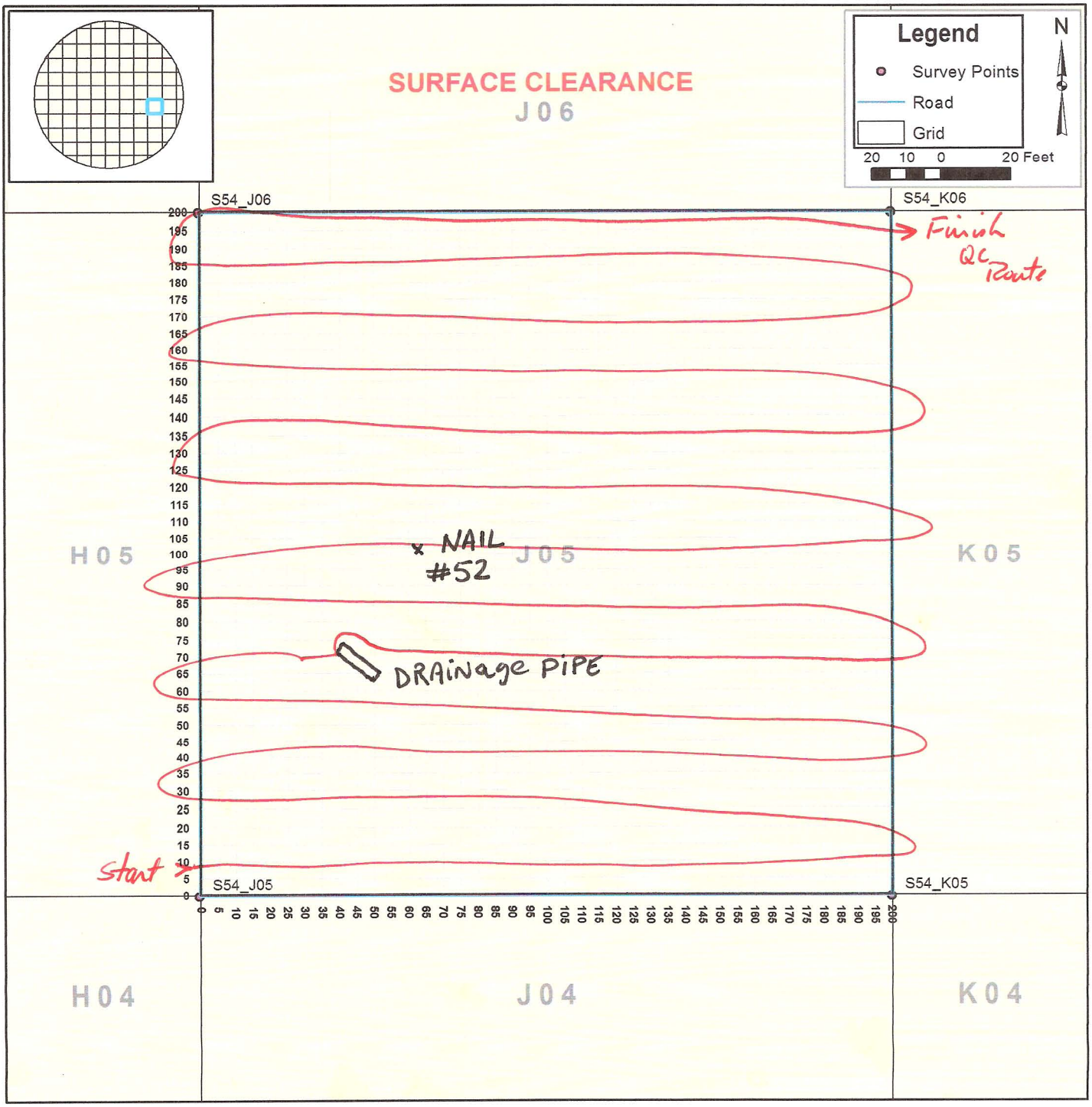
Digs: NA
MEC #: NA
MEC Debris: 35 lbs
Scrap Metal: 500 lbs

Seed:
X: 63'
Y: 101'

	P	F	Date
QC:	☒	☐	8/27/08
QA:	☒	☐	8/28/08

Comments: _____

Qty	Depth(in)	Nomenclature	Filler



00099683

S54 J-06 Team (1) 2 3

Date Started: 8-26-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 8-26-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

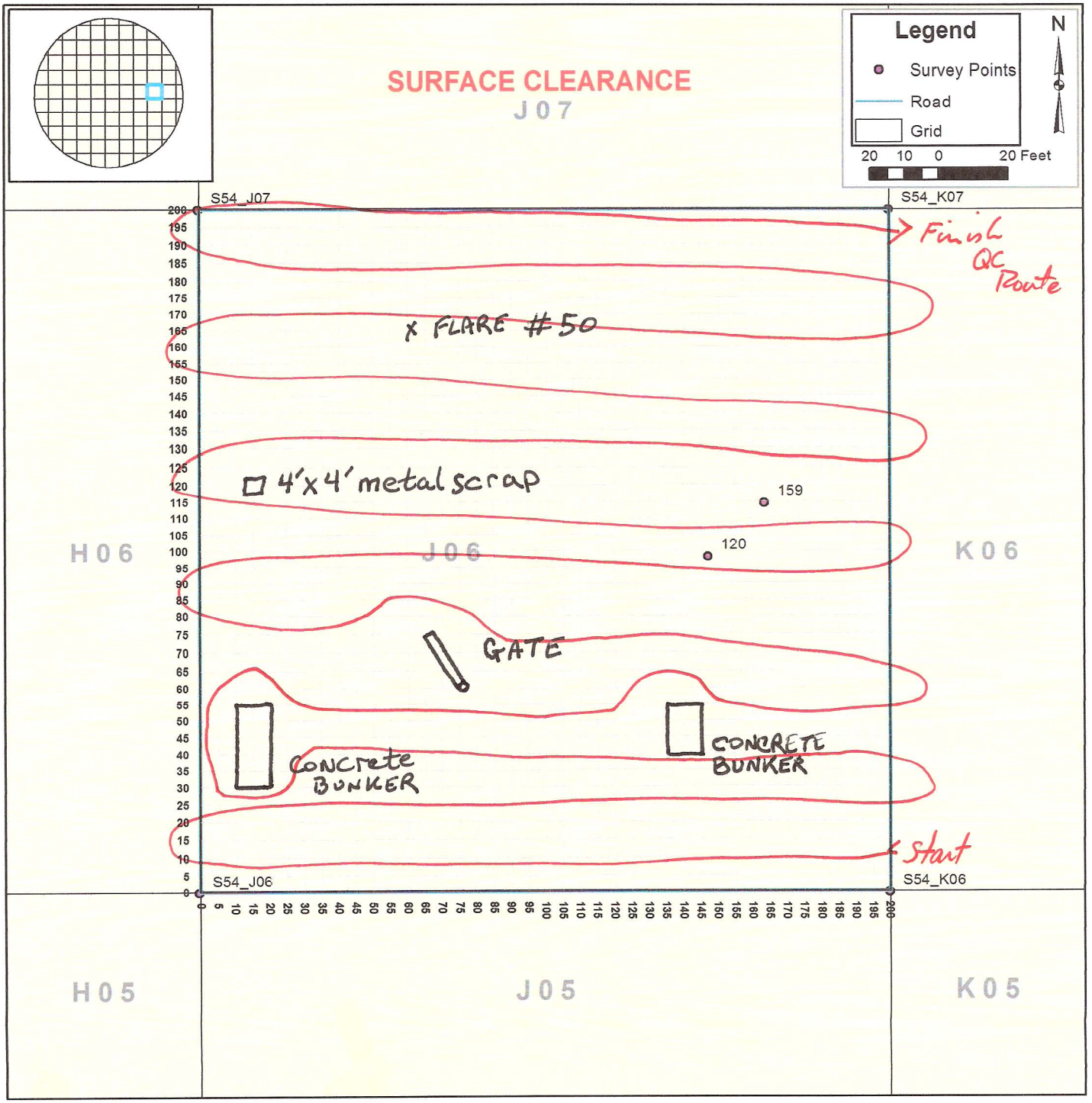
Digs: NA
MEC #: NA
MEC Debris: 30 lbs
Scrap Metal: 400 lbs

Seed:
X: 62'
Y: 165'

	P	F	Date
QC:	☒	☐	8/27/08
QA:	☒	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099684

S54 J-07

Team : (1) 2 3

Date Started: 8-26-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 8-26-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

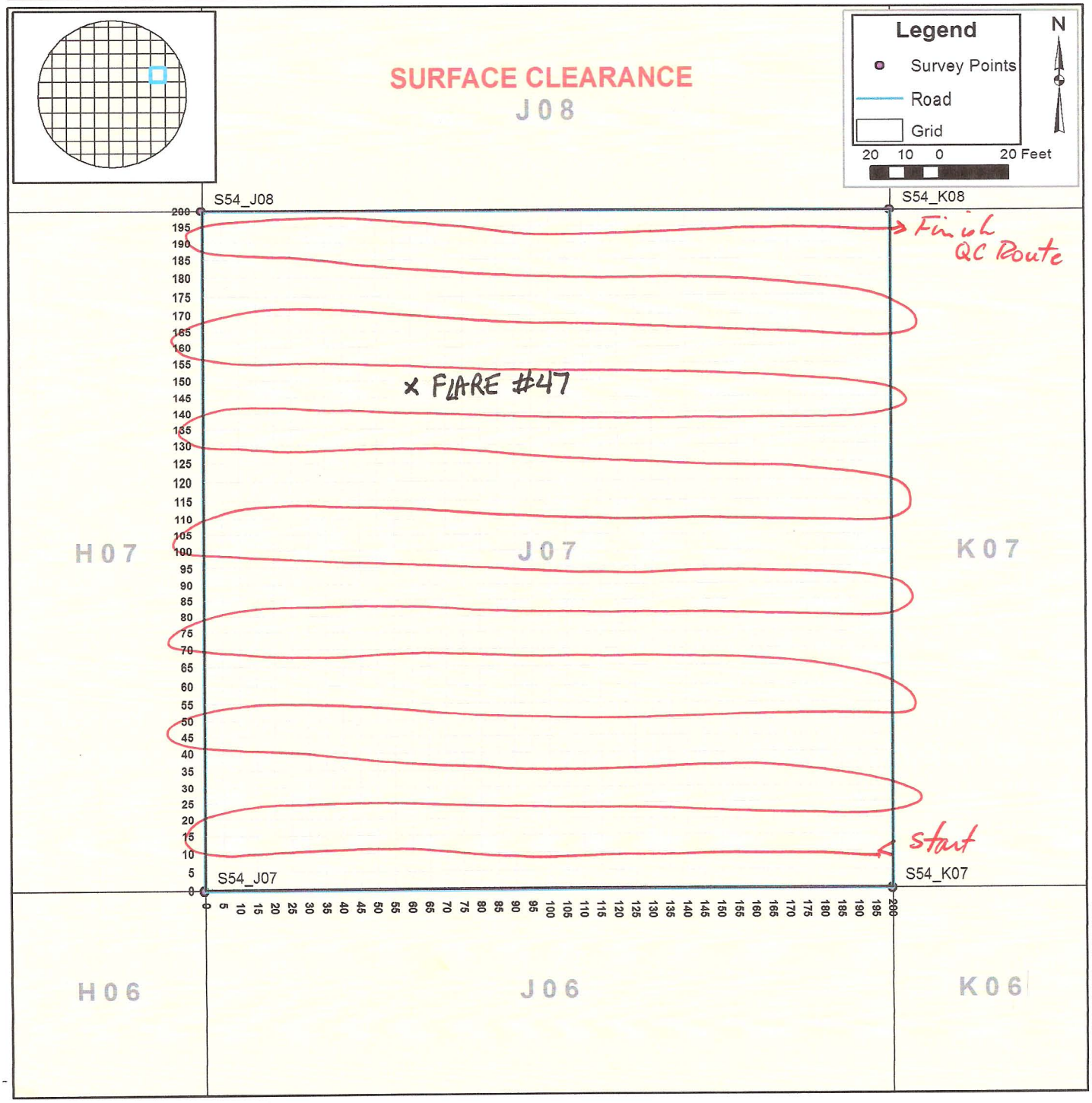
Digs: NA
MEC #: NA
MEC Debris: 50 lbs
Scrap Metal: 200 lbs

Seed:
X: 60'
Y: 148'

	P	F	Date
QC :	☒	☐	8/27/08
QA :	☒	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099685

S54 K-02 Team (1) 2 3

Date Started: 8-26-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8-26-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

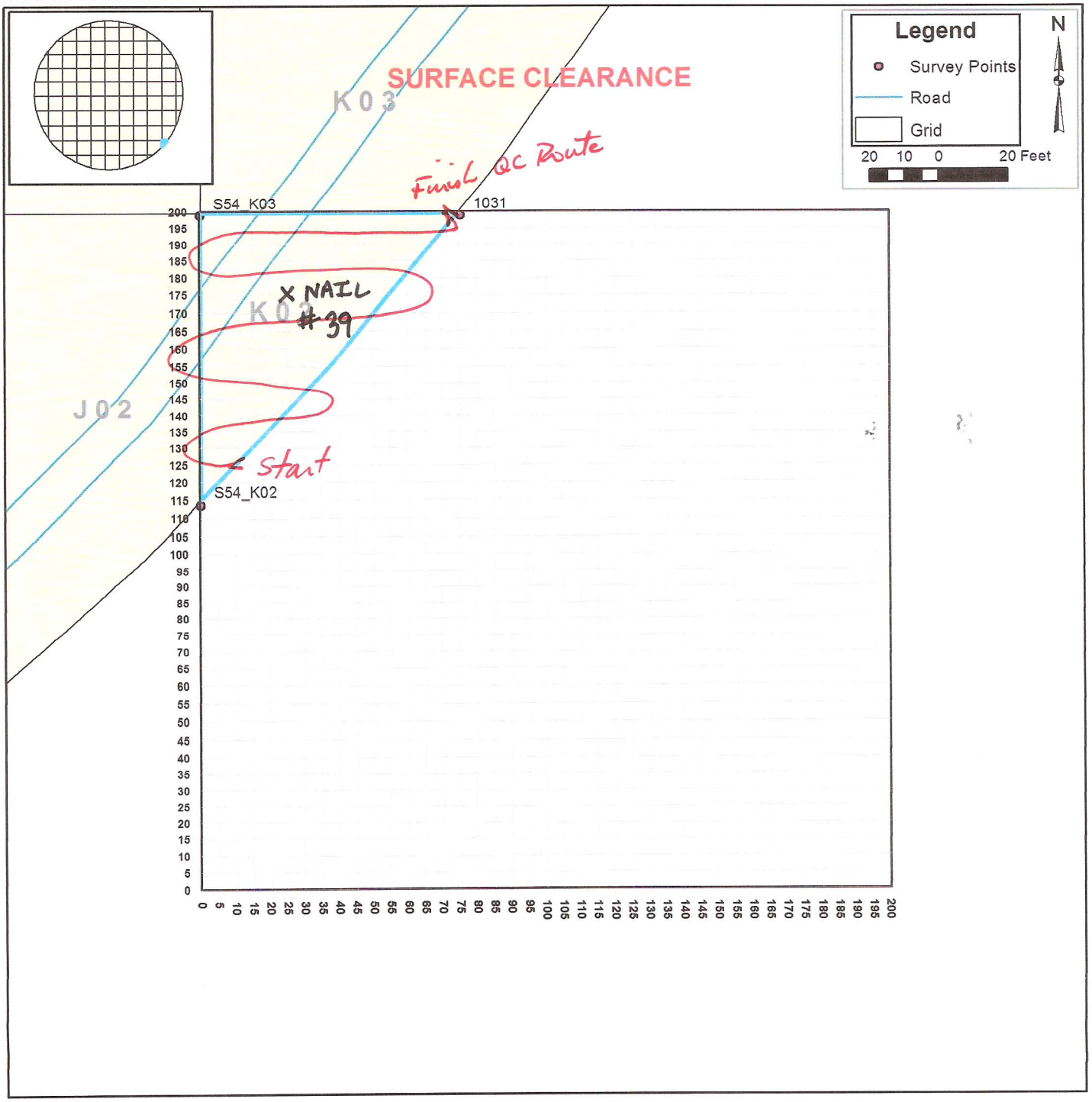
Digs: NA
MEC #: NA
MEC Debris: 5lbs
Scrap Metal: 21bs

Seed:
X: 27'
Y: 176'

	P	F	Date
QC :	☒	☐	8/27/08
QA :	☒	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099686

S54 K-03 Team: 1 2 3

Date Started: 8-26-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 8-26-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

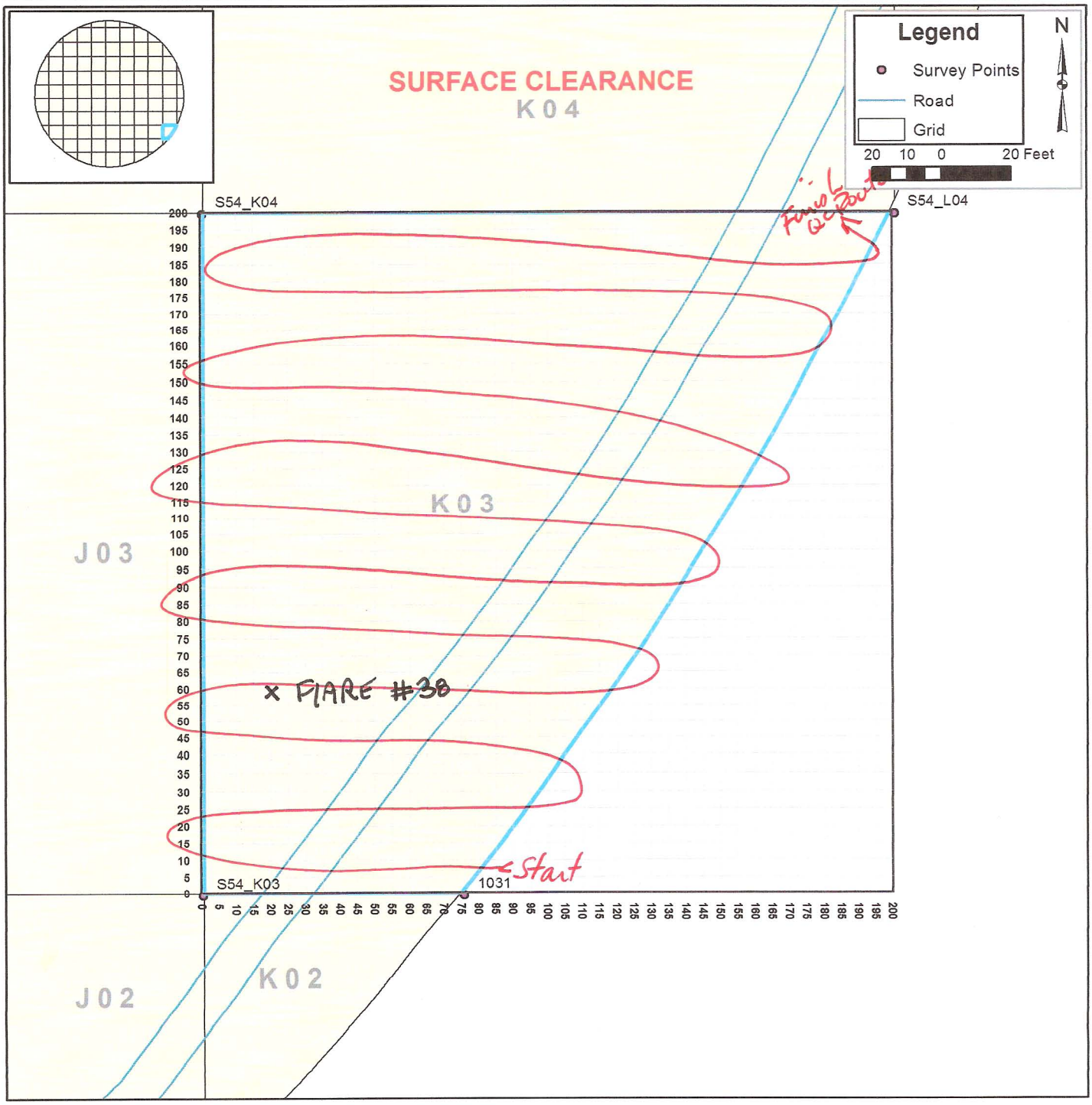
Digs: NA
MEC #: NA
MEC Debris: 5lbs
Scrap Metal: 5lbs

Seed:
X: 20'
Y: 59'

	P	F	Date
QC:	☒	☐	8/27/08
QA:	☒	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099687

S54 K-04 Team: 1 2 3

Date Started: 8-26-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8-26-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

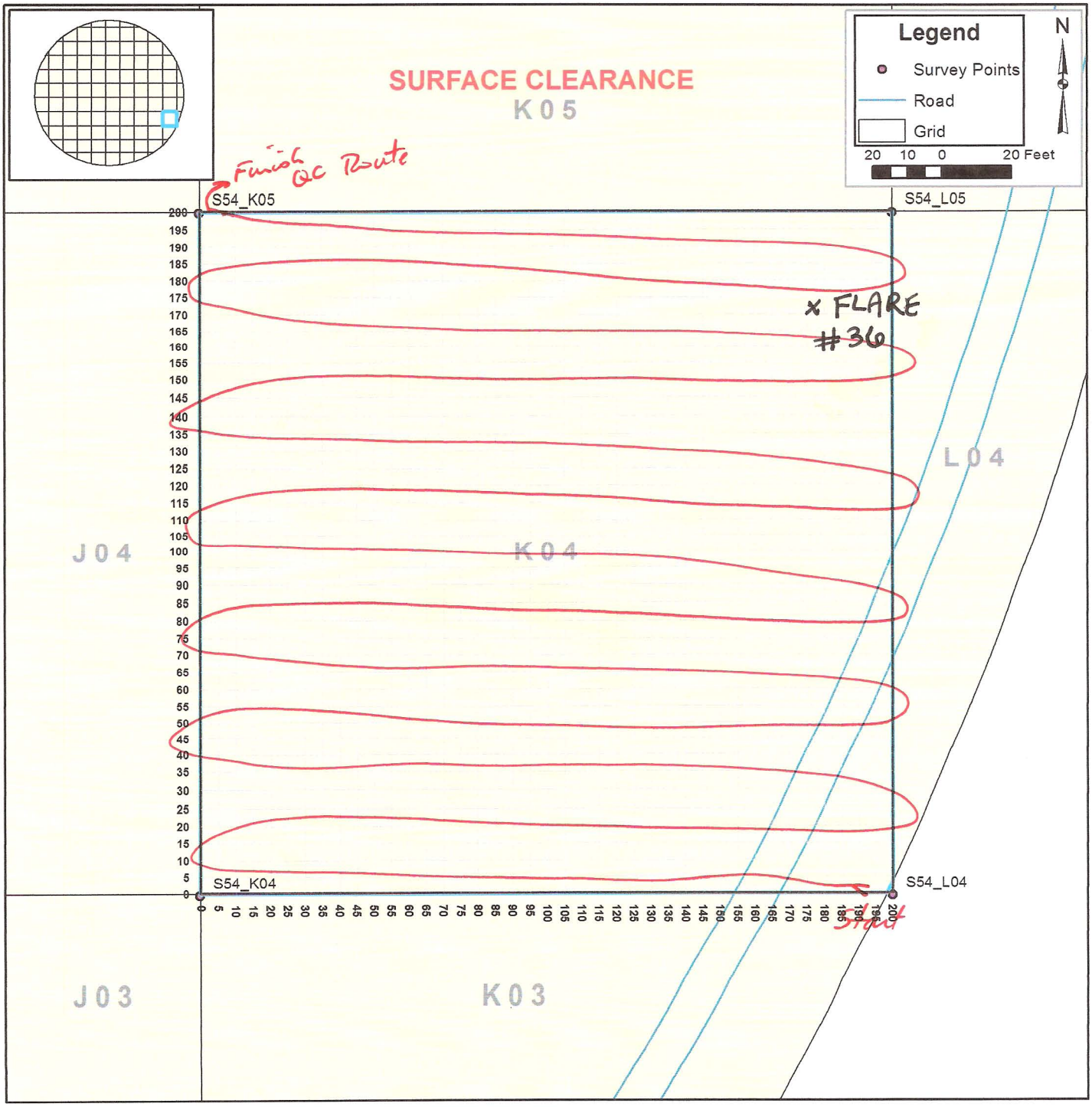
Digs: NA
MEC #: NA
MEC Debris: 5lbs
Scrap Metal: 10lbs

Seed:
X: 176'
Y: 172'

	P	F	Date
QC:	X	☐	8/27/08
QA:	X	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099688

S54 L-04 Team: 1 2 3

Date Started: 8-26-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8-26-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

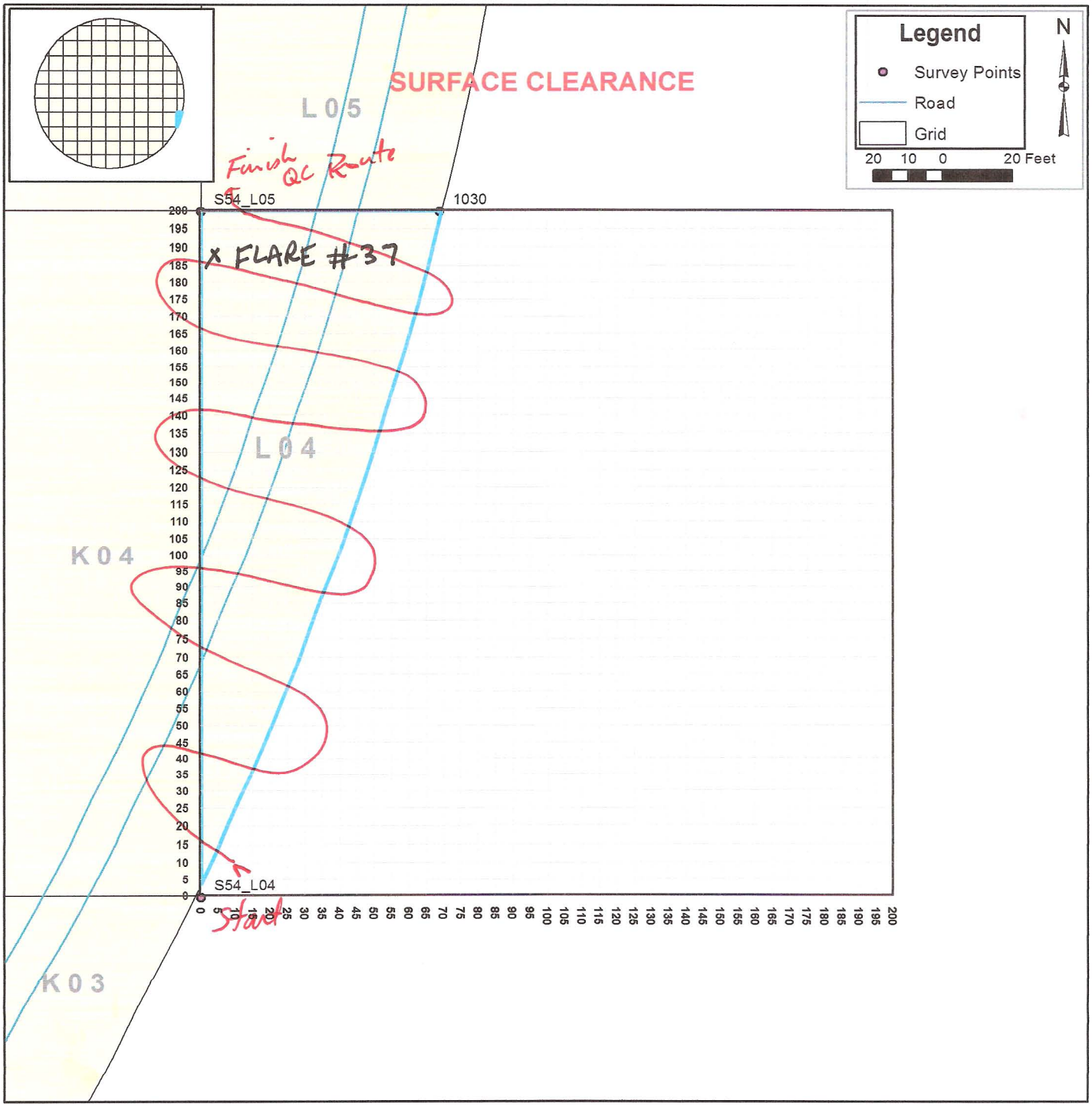
Digs: NA
MEC #: NA
MEC Debris: 2lbs
Scrap Metal: 2lbs

Seed:
X: 4'
Y: 188'

	P	F	Date
QC :	☒	☐	8/27/08
QA :	☒	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099689

S54 E-08

Team : 1 2 (3)

Date Started: 27AUG08

Date Surveyed: N/A

Date Gru:bbed:

Date Finished: 27AUG08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N/A

MEC #: N/A

MEC Debris: 46

Scrap Metal: 30

Seed:

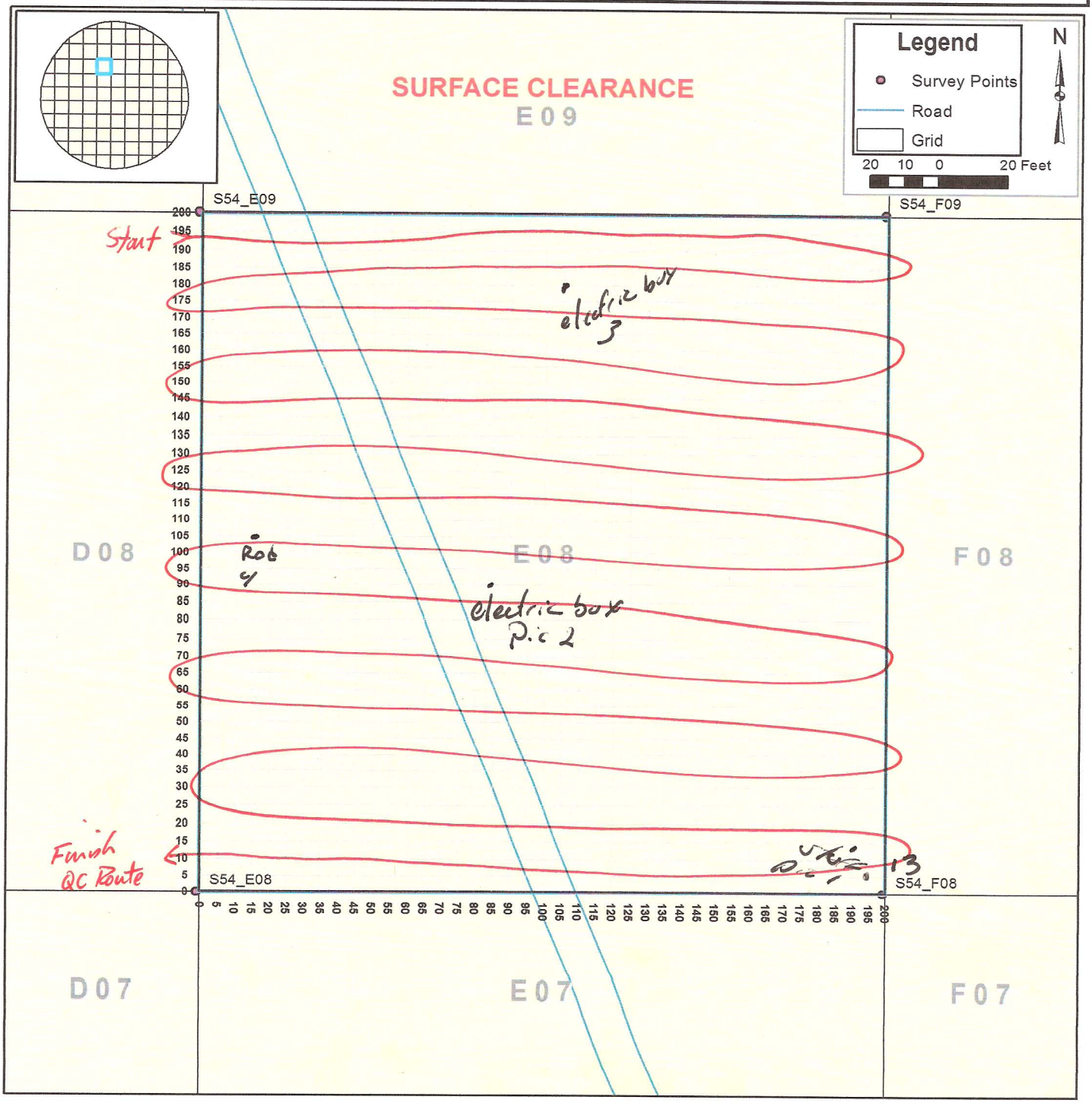
X: 195

Y: 5

	P	F	Date
QC :	☒	☐	8/28/08
QA :	☑	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099690

S54 H-09

Team (1) 2 3

Date Started: 8-27-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8-27-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

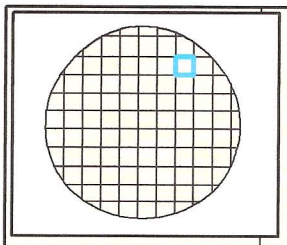
Digs: NA
MEC #: NA
MEC Debris: 45 lbs
Scrap Metal: 20 lbs

Seed:
X: 156'
Y: 21'

	P	F	Date
QC :	☒	☐	8/28/08
QA :	☒	☐	8/28/08

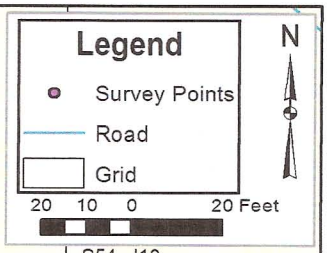
Comments:

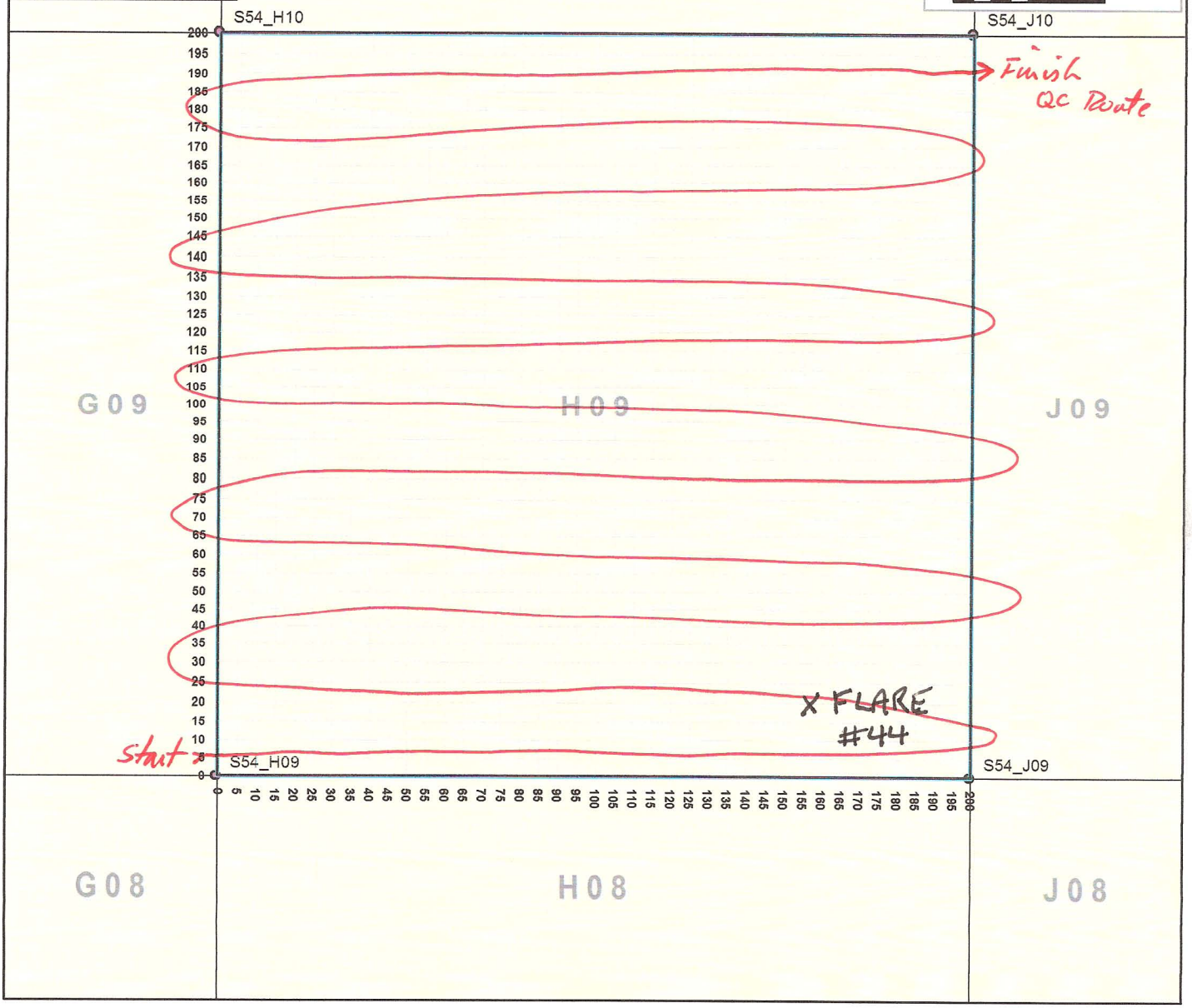
Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

H10





00099691

S54 H-10 Team (1) 2 3

Date Started: 8-27-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8-28-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

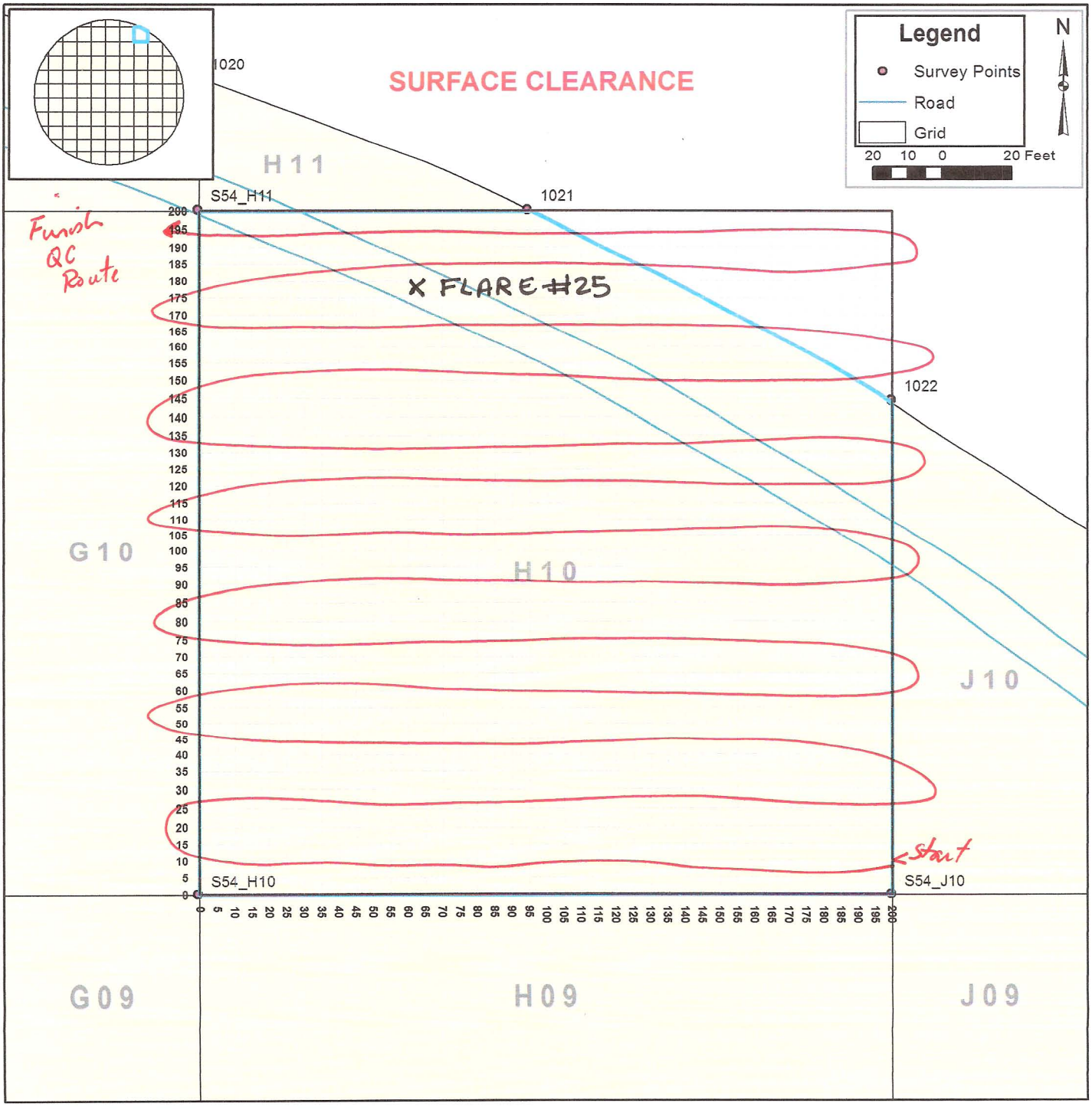
Digs: NA
MEC #: NA
MEC Debris: 20 lbs
Scrap Metal: 40 lbs

Seed:
X: 62'
Y: 179'

	P	F	Date
QC :	☒	☐	8/28/08
QA :	☒	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099692

S54 H-11 Team : 1 2 3

Date Started: 8-27-2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 8-27-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 0 lbs

Scrap Metal: 40 lbs

Seed:

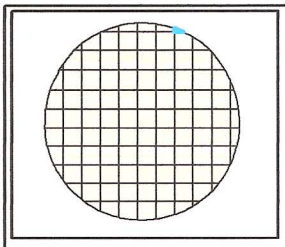
X: 21'

Y: 19'

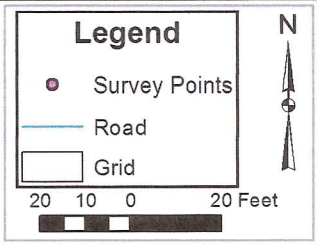
	P	F	Date
QC :	☒	☐	8/28/08
QA :	☒	☐	8/28/08

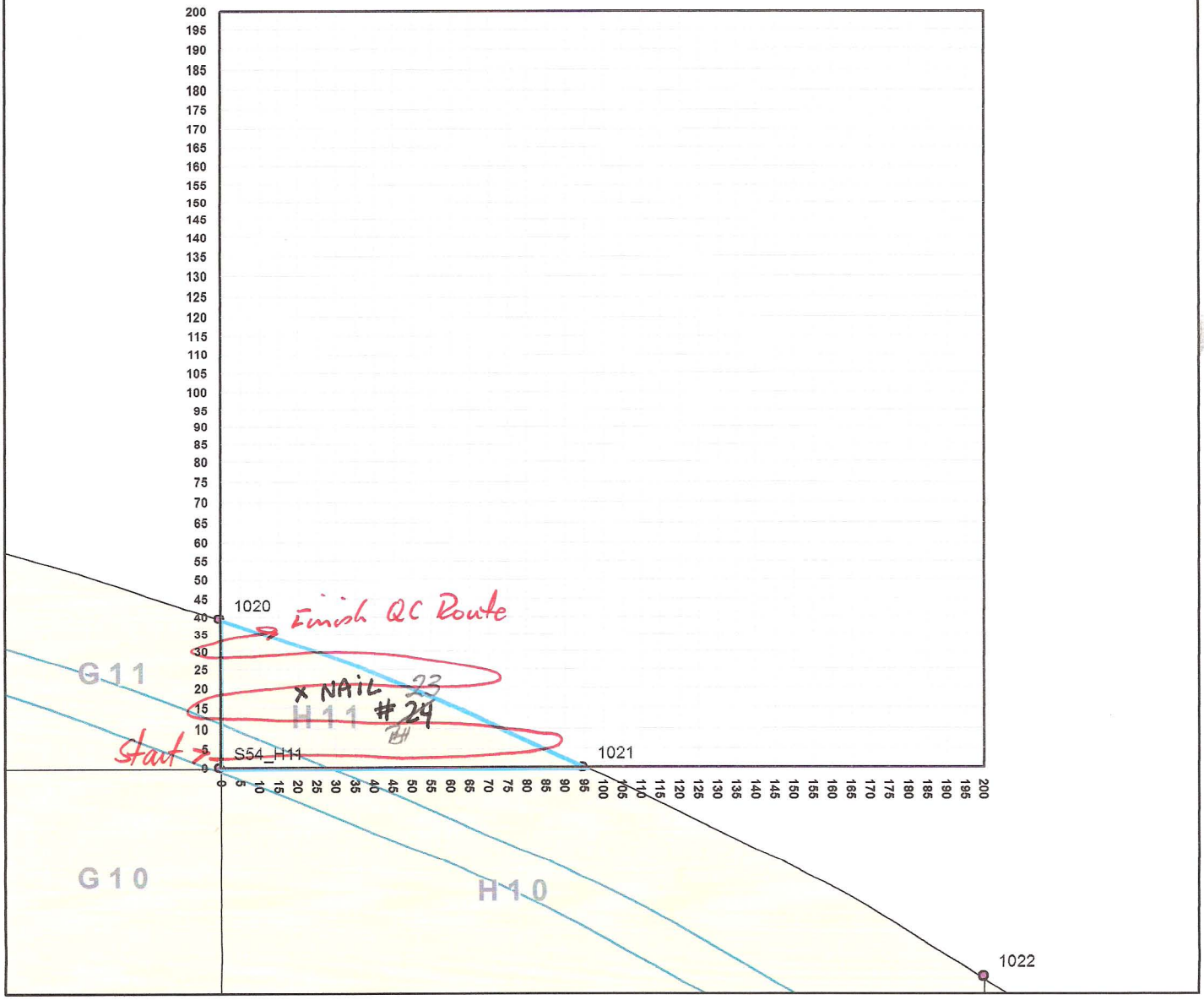
Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE





00099693

S54 J-08 Team (1) 2 3

Date Started: 8-27-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 8-27-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

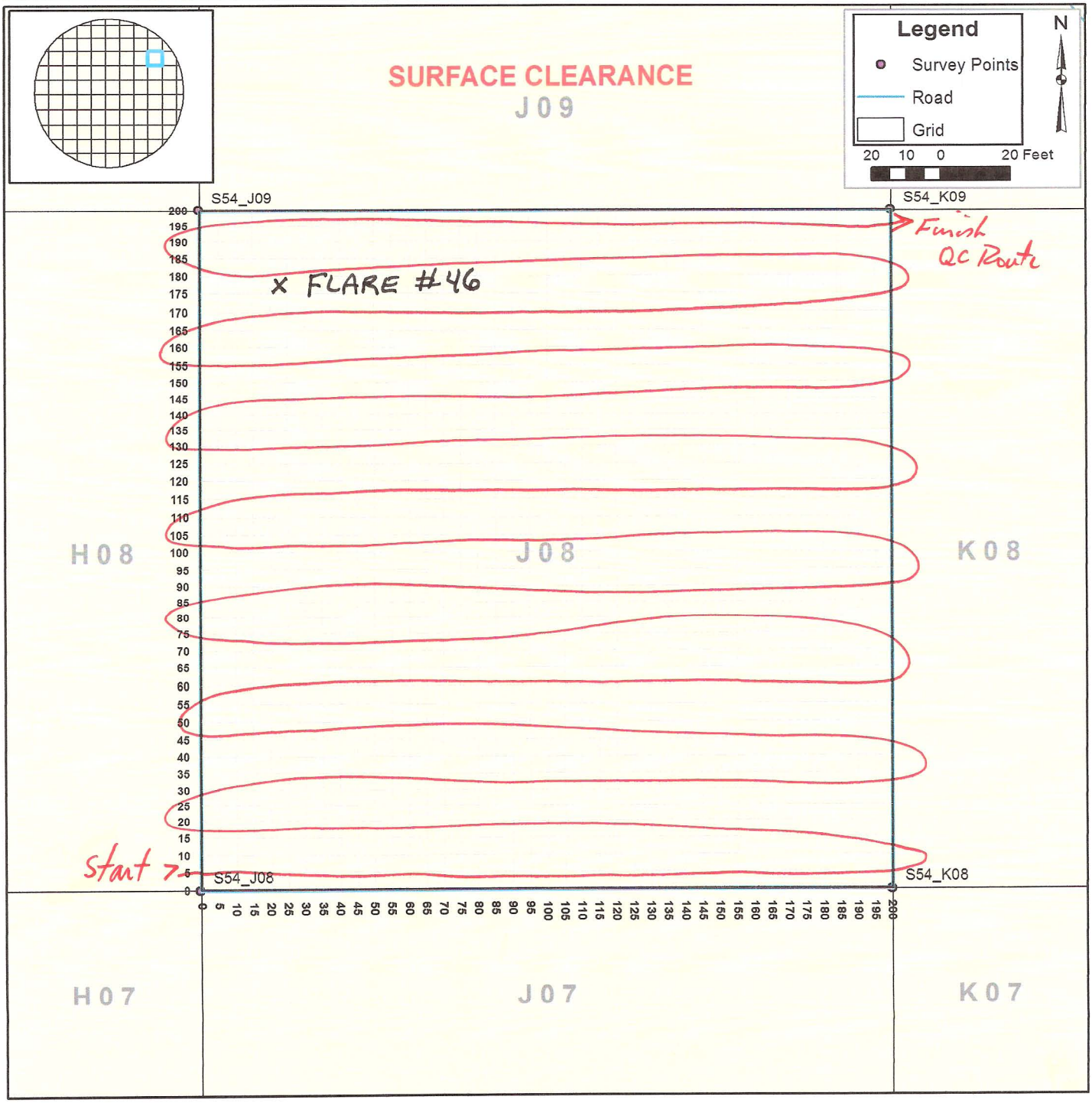
Digs: NA
MEC #: NA
MEC Debris: 50 lbs
Scrap Metal: 20 lbs

Seed:
X: 23'
Y: 177'

	P	F	Date
QC :	☒	☐	8/28/08
QA :	☒	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099694

S54 J-09 Team: 1 2 3

Date Started: 8-27-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8-27-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

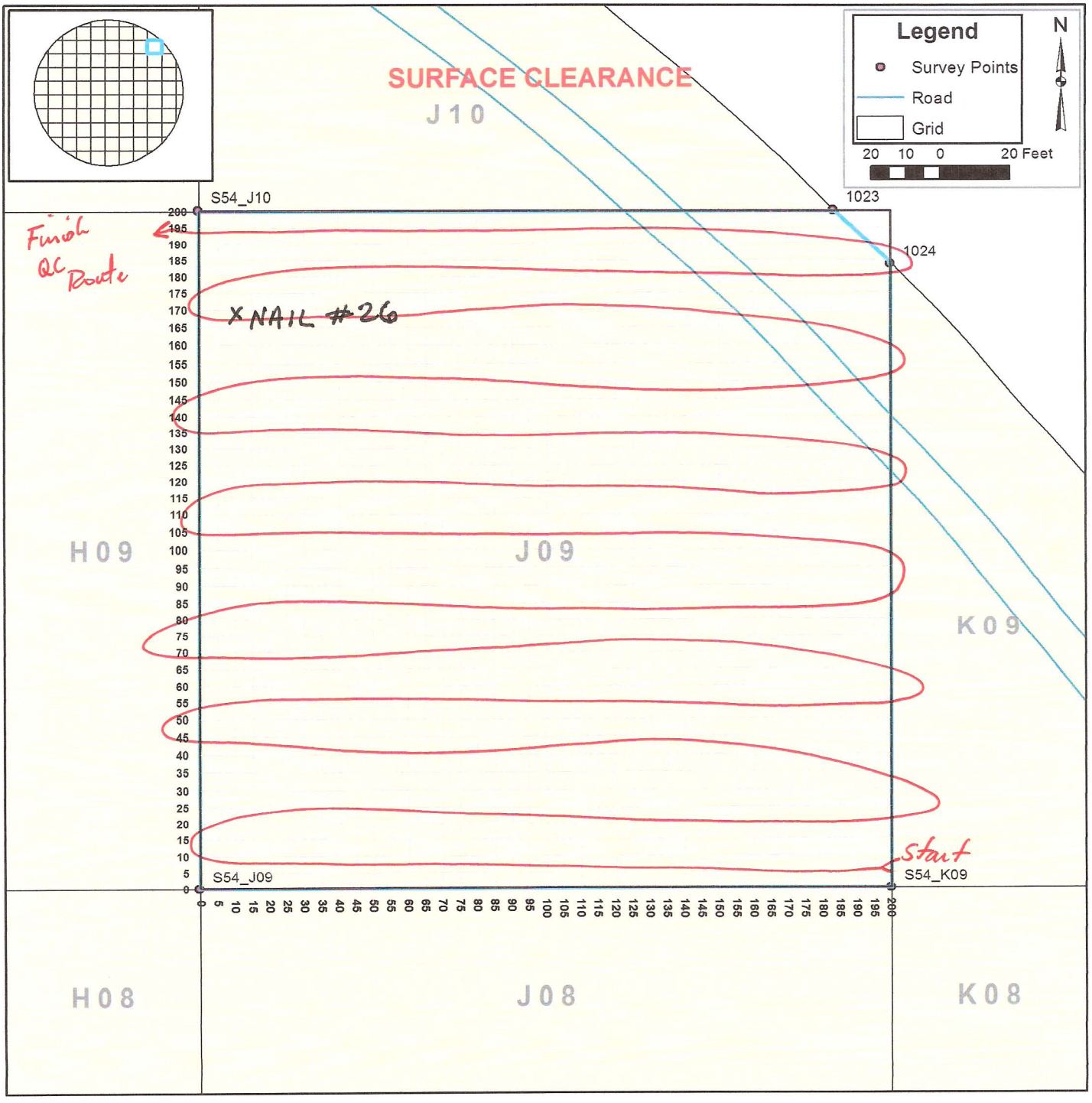
Digs: NA
MEC #: NA
MEC Debris: 35 lbs
Scrap Metal: 20 lbs

Seed:
X: 10'
Y: 169'

	P	F	Date
QC:	X	☐	8/28/08
QA:	X	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099695

S54 J-10

Team : (1) 2 3

Date Started: 8-27-2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 8-27-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 216s

Scrap Metal: 216s

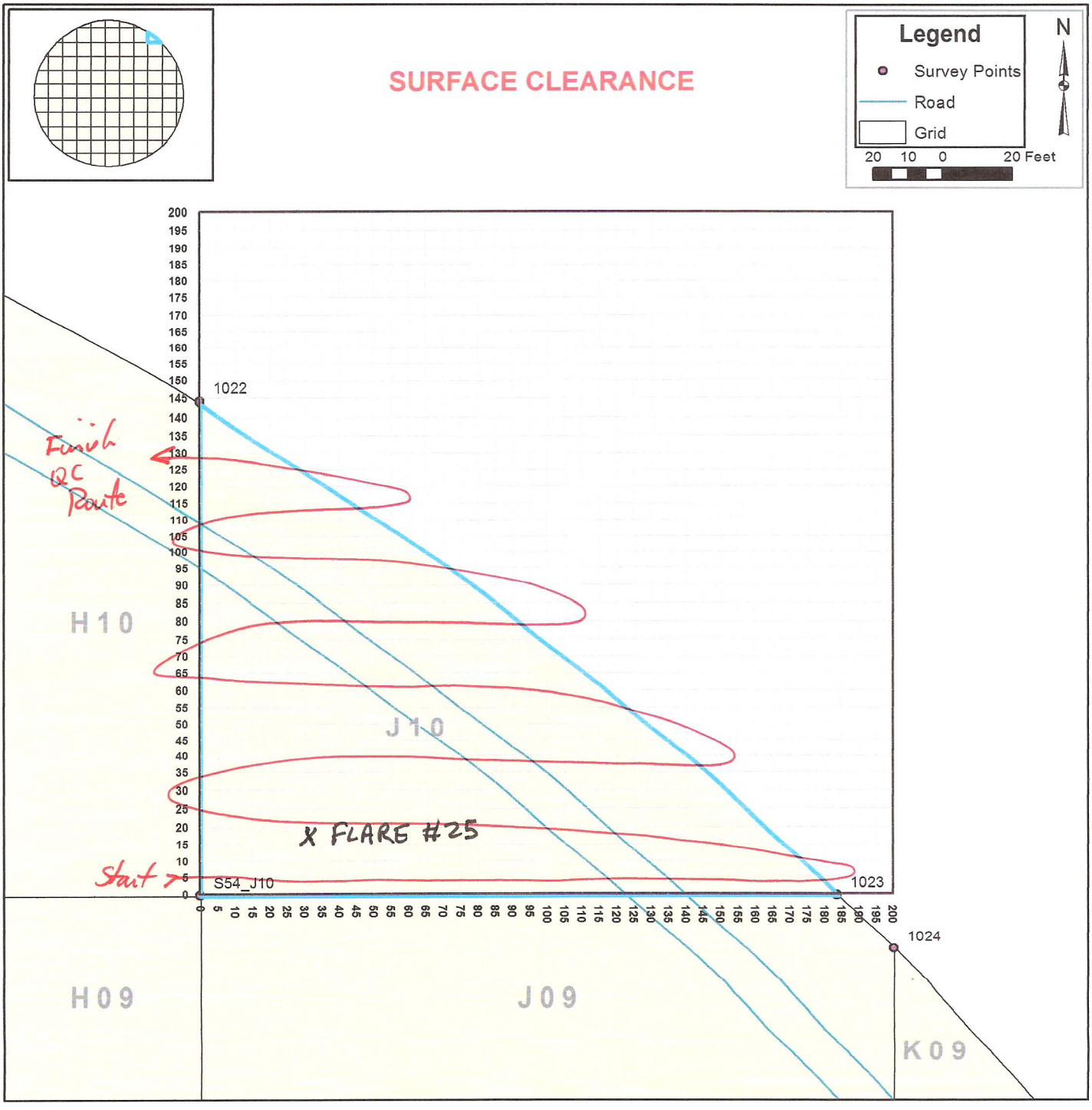
Seed:
X: 31'
Y: 18'

	P	F	Date
QC :	☒	☐	8/28/08
QA :	☒	☐	8/28/08

Comments:

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE



00099696

S54 H-08 Team: (1) 2 3

Date Started: 8-28-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 8-28-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

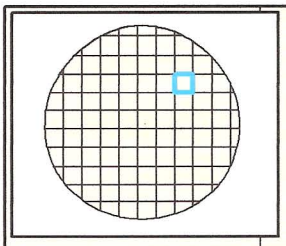
Digs: NA
MEC #: NA
MEC Debris: 450lbs
Scrap Metal: 50lbs

Seed:
X: 181'
Y: 175'

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



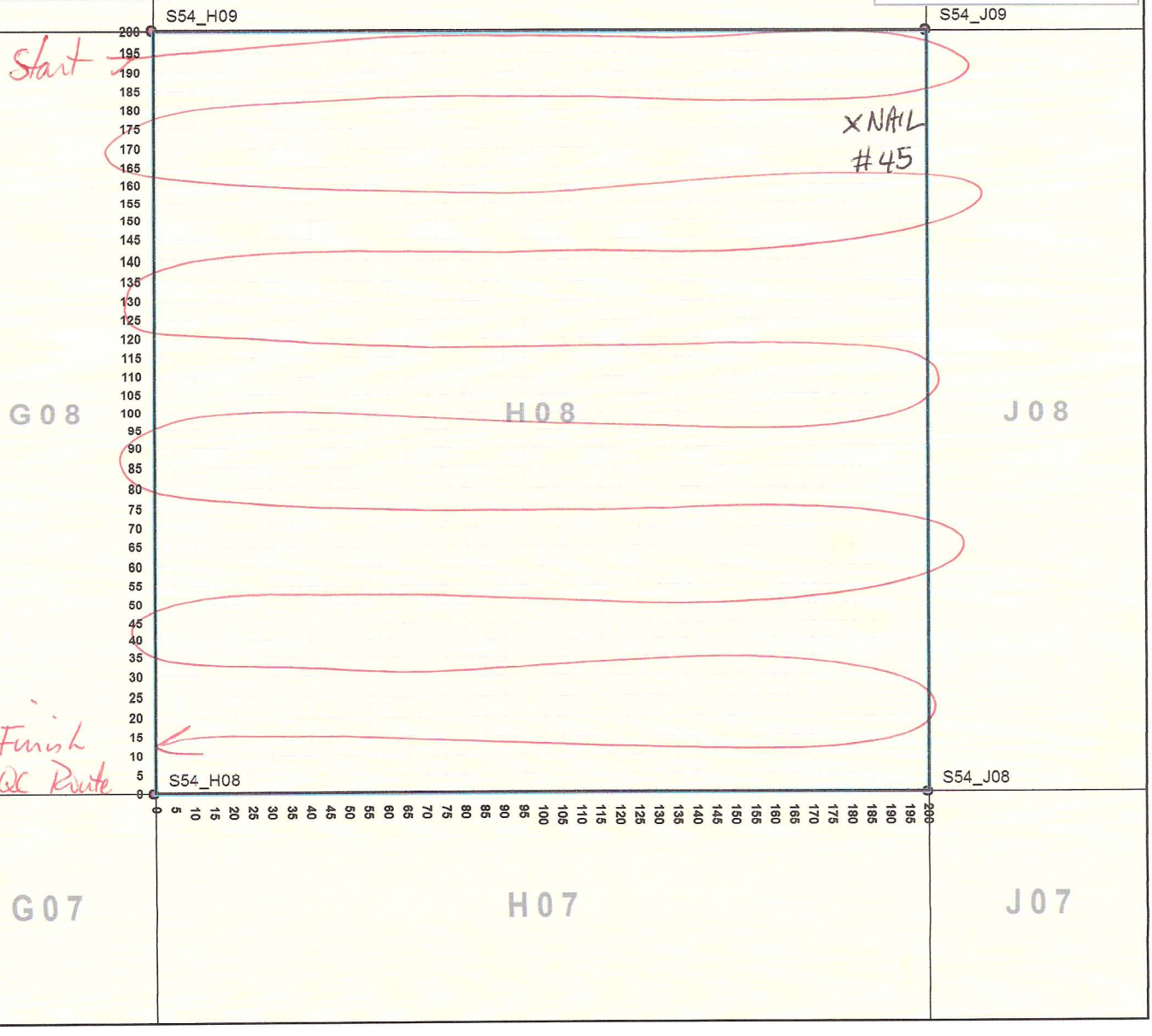
SURFACE CLEARANCE

H09

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099697

S54 H-07 Team (1) 2 3

Date Started: 8-28-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-3-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

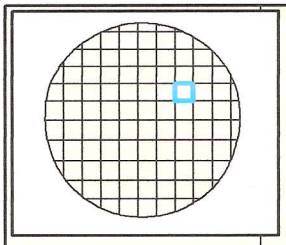
Digs: NA
MEC #: NA
MEC Debris: 330 lbs
Scrap Metal: 115 lbs

Seed:
X: 118'
Y: 147'

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler

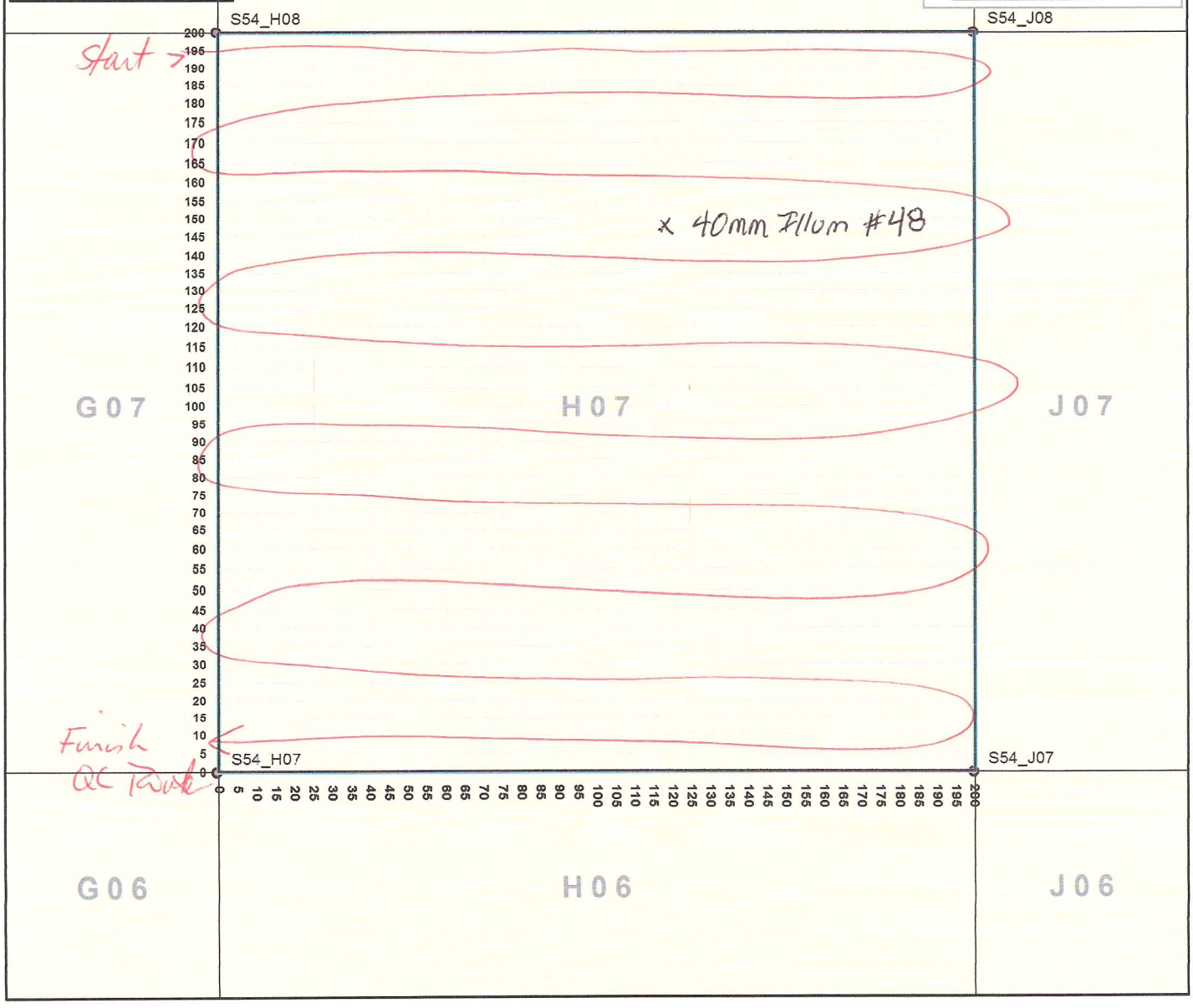


SURFACE CLEARANCE
H08

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099698

S54 E-01 Team :1 2 (3) Soil:

Date Started: 28 Aug 08 ☐-Clay

Date Surveyed: N/A ☐-Limestone

Date Gru:bbed: ☐-Loam

Date Finished: 28 AUG 08 ☐ Sand

Digs: N/A

MEC #: N/A

MEC Debris: 1

Scrap Metal: 0

Seed:

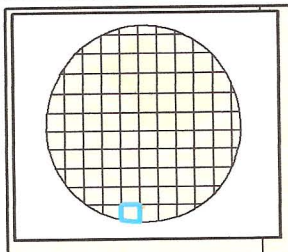
X: 190

Y: 165

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	9/4/08

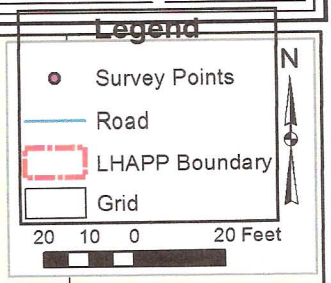
Comments:

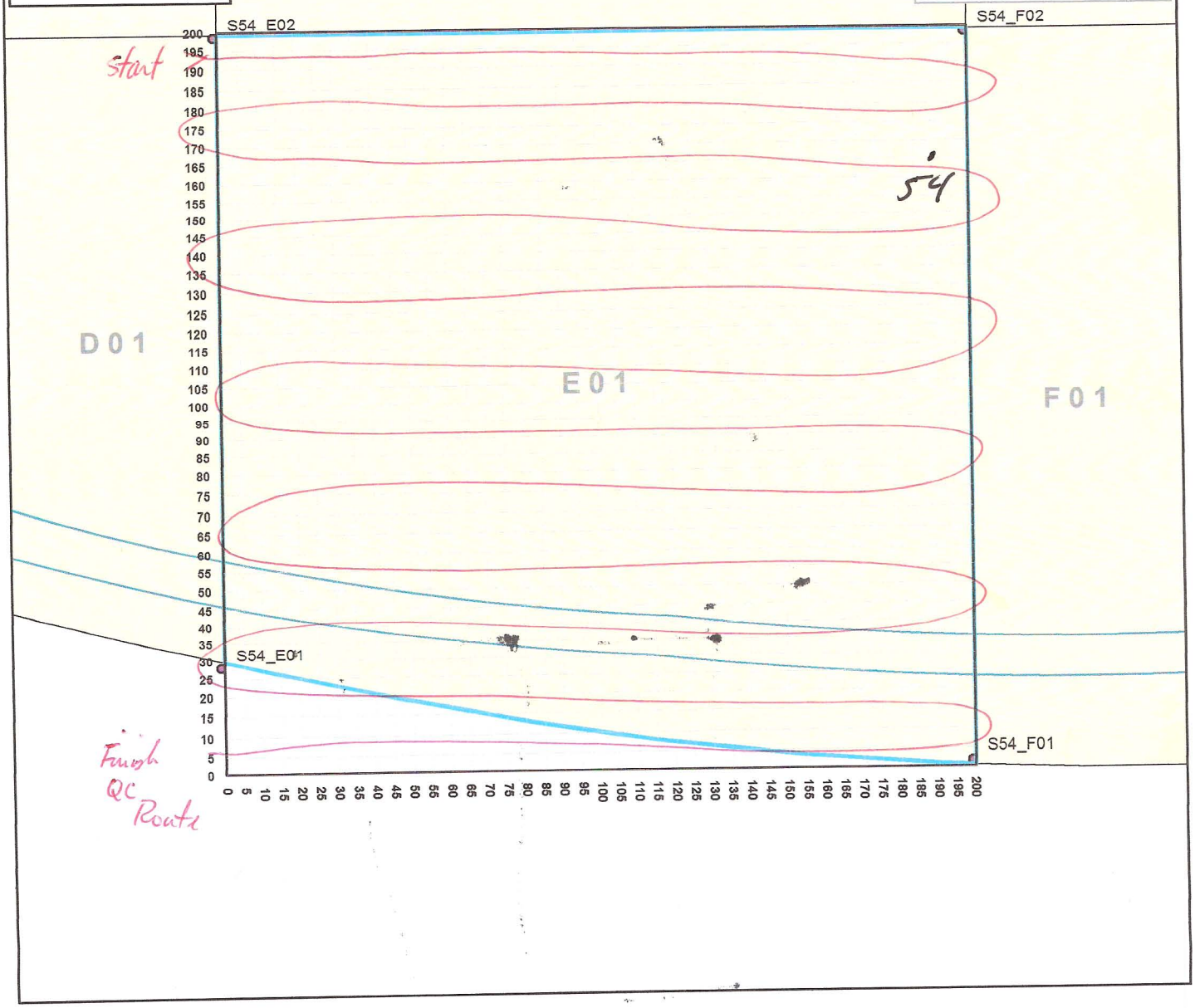
Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

E 0 2





00099699

S54 E-02

Team : 1 2 (3)

Date Started: 28AUG08

Date Surveyed: N/A

Date Gru:bbed: _____

Date Finished: 28AUG08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N/A

MEC #: 0

MEC Debris: 15

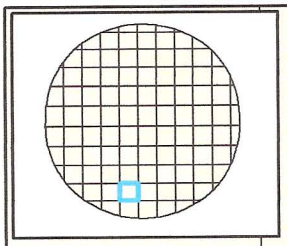
Scrap Metal: 0

Seed:
X: 90
Y: 20

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

Comments: _____

Qty	Depth(in)	Nomenclature	Filler



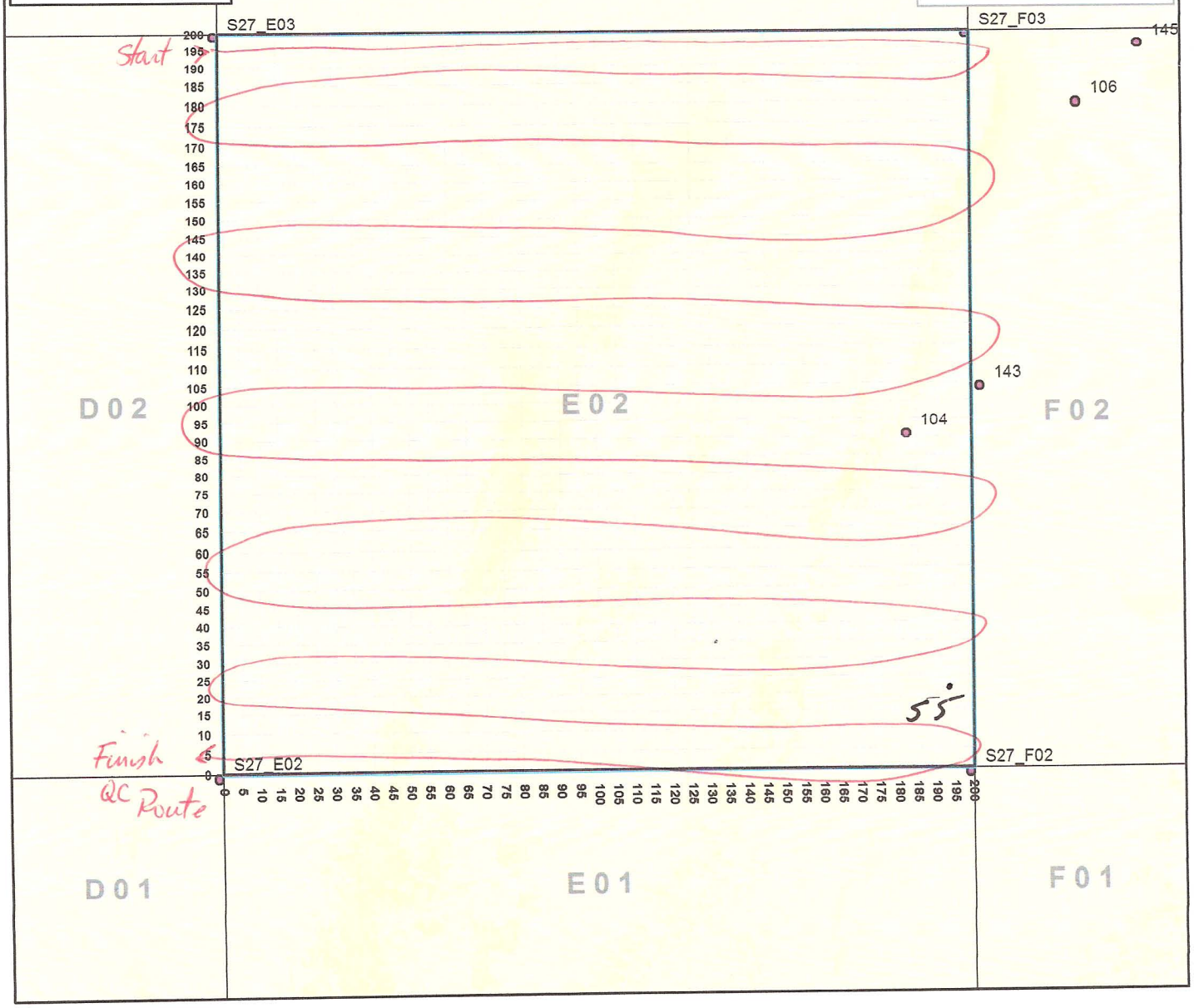
SURFACE CLEARANCE

E 0 3

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099700

S54 E-03 Team : 1 2 (3)

Date Started: 28 AUG 08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 28 AUG 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ ~~-Sand~~

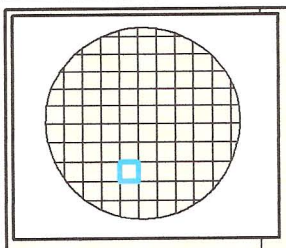
Digs: W/A
MEC #: 8
MEC Debris: 10
Scrap Metal: 0

Seed:
X: 170
Y: 125

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



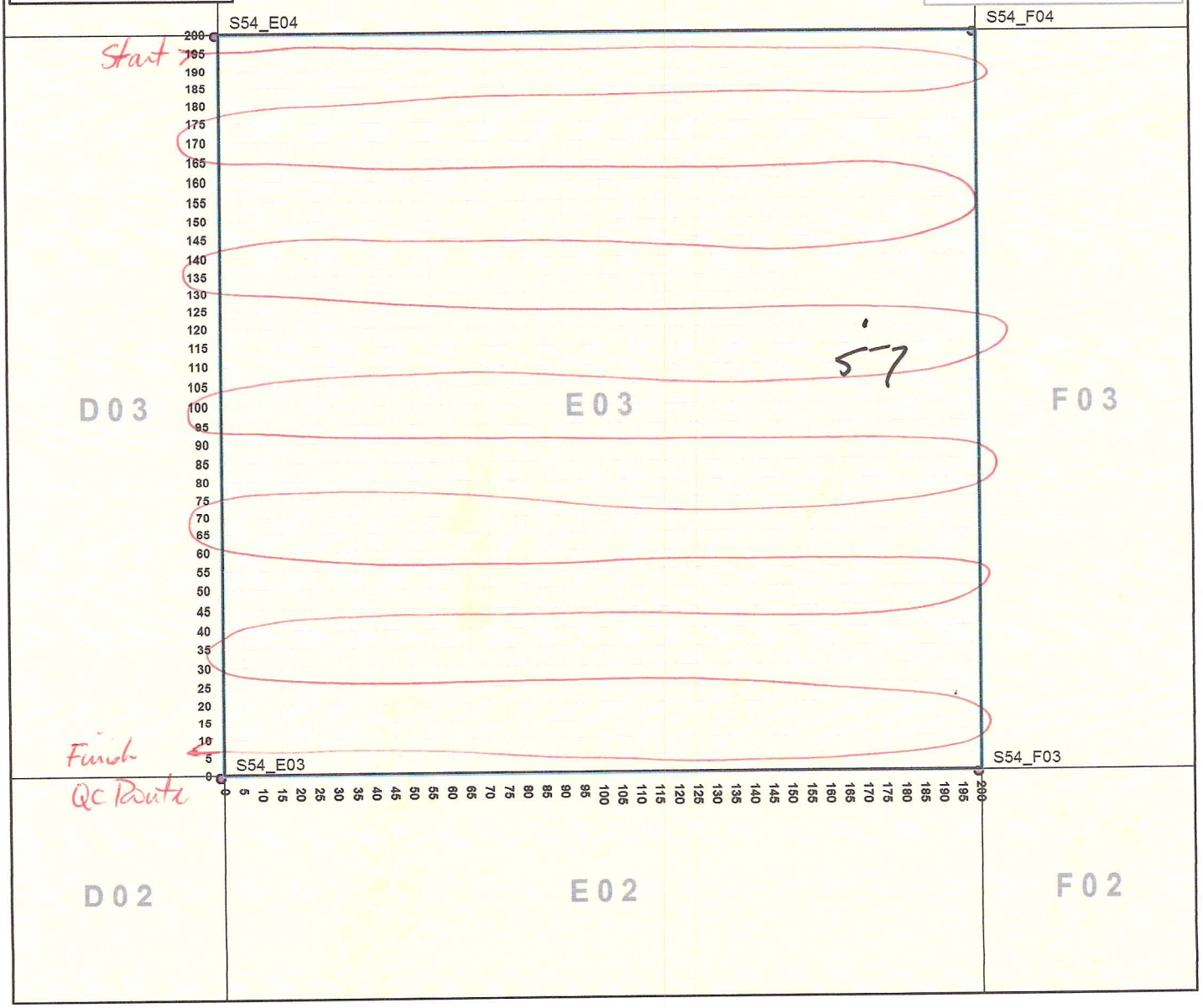
SURFACE CLEARANCE

E 0 4

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099701

S54 E-04 Team : 1 2 (3)

Date Started: 28 Aug 08
Date Surveyed: N/A
Date Grubbed: _____
Date Finished: 28 Aug 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

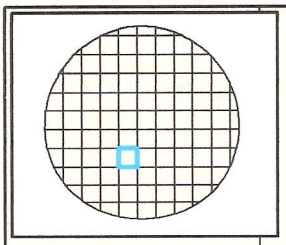
Digs: N/A
MEC #: 0
MEC Debris: 15
Scrap Metal: 0

Seed:
X: 185
Y: 65

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

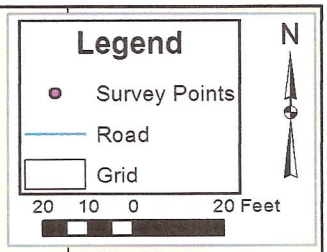
Comments: _____

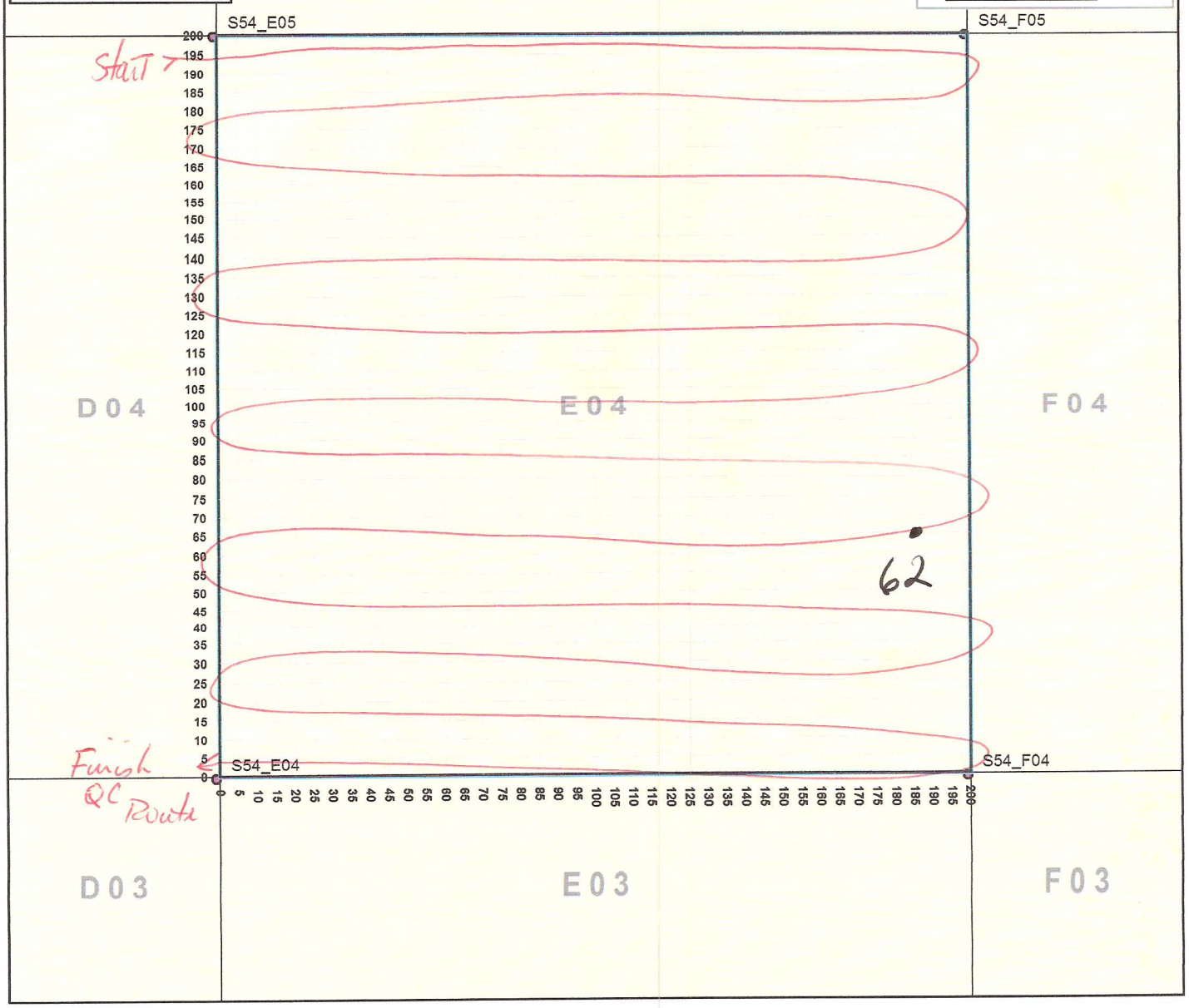
Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

E 0 5





00099702

S54 F-01

Team : 1 2 3

Date Started: 3Sep08

Date Surveyed: N/A

Date Grubbed: 3Sep08

Date Finished: 3Sep08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N/A

MEC #: N/A

MEC Debris: 0

Scrap Metal: 0

Seed:

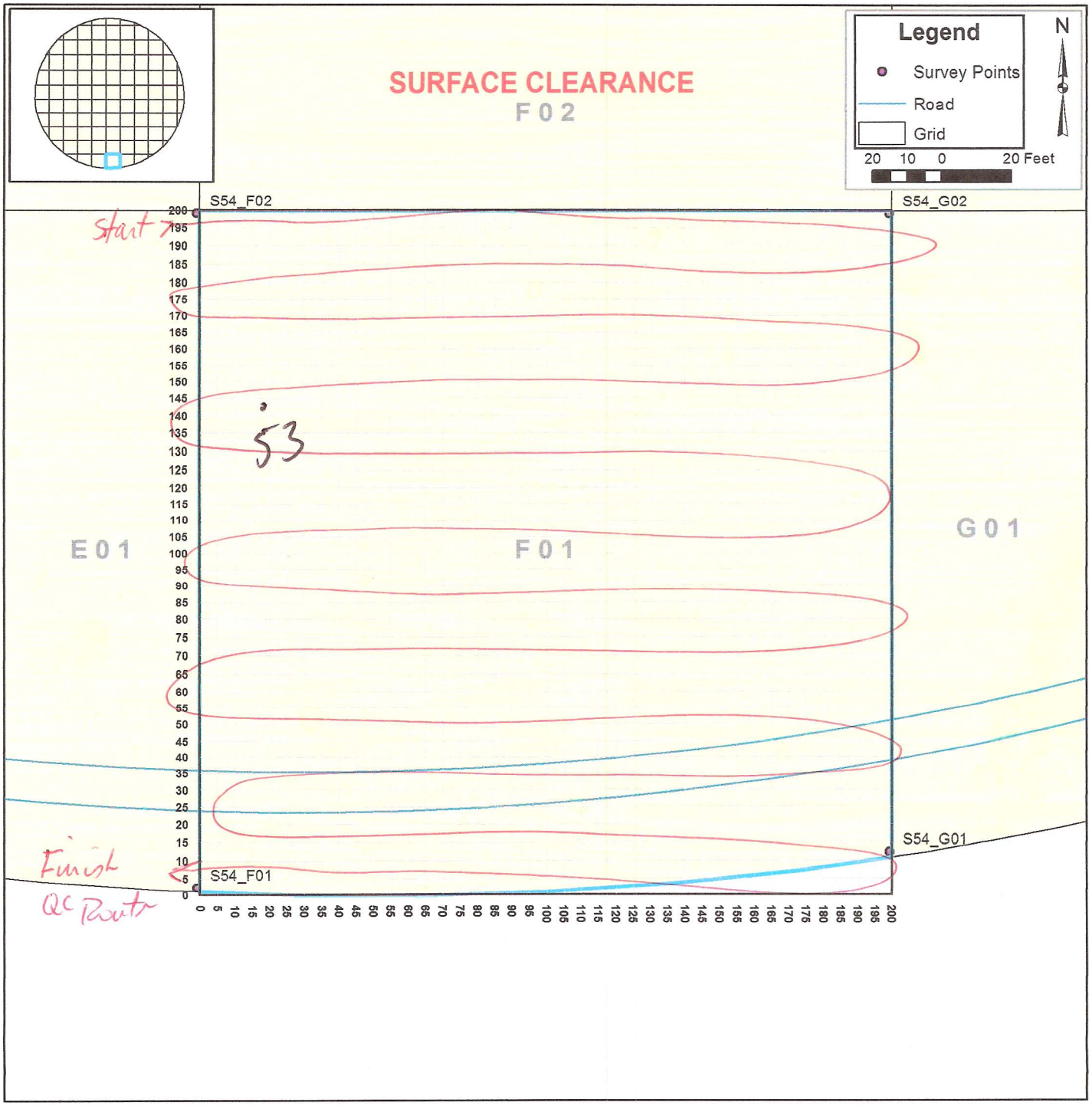
X: 30

Y: 140

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099703

S54 F-02

Team : 1 2 3

Date Started: 3Sep08

Date Surveyed: N/A

Date Grubbed: _____

Date Finished: 3Sep08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N/A

MEC #: N/A

MEC Debris: 5

Scrap Metal: 0

Seed:

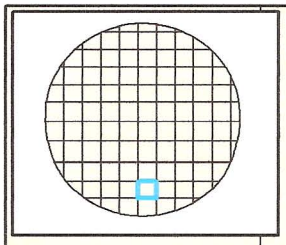
X: 30

Y: 60

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

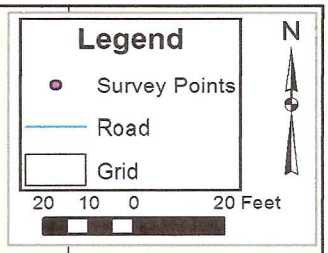
Comments: _____

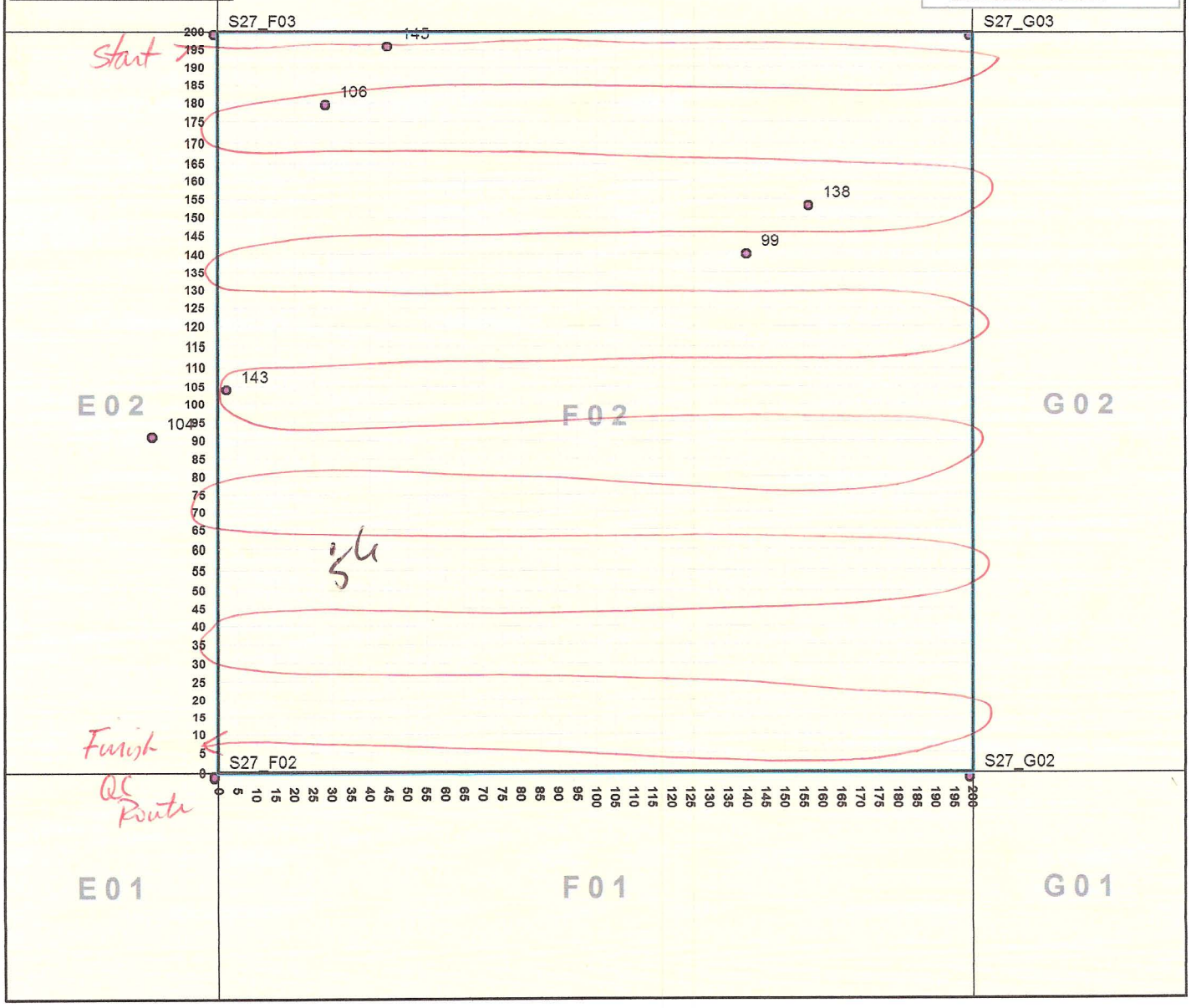
Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

F 0 3





00099704

S54 F-03 Team : 1 2 3

Date Started: 03SEP08

Date Surveyed: N/A

Date Gru:bbed:

Date Finished: 03SEP08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N/A

MEC #: N/A

MEC Debris: 10

Scrap Metal: 5

Seed:

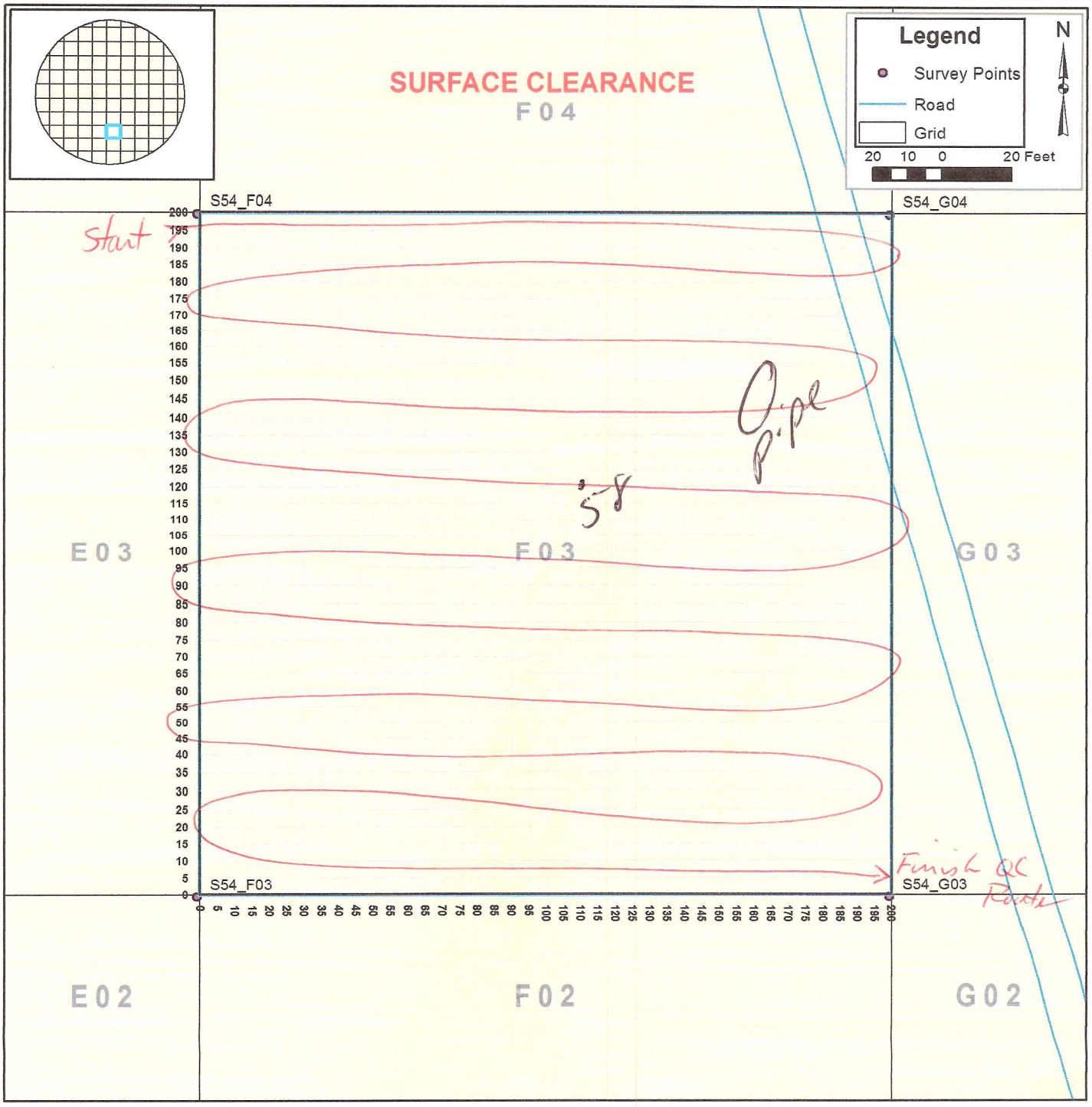
X: 110

Y: 120

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099705

S54 F-04 Team : 1 2 (3)

Date Started: 03Sep08

Date Surveyed: _____

Date Grubbed: _____

Date Finished: 03Sep08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: N/A

MEC #: _____

MEC Debris: 5

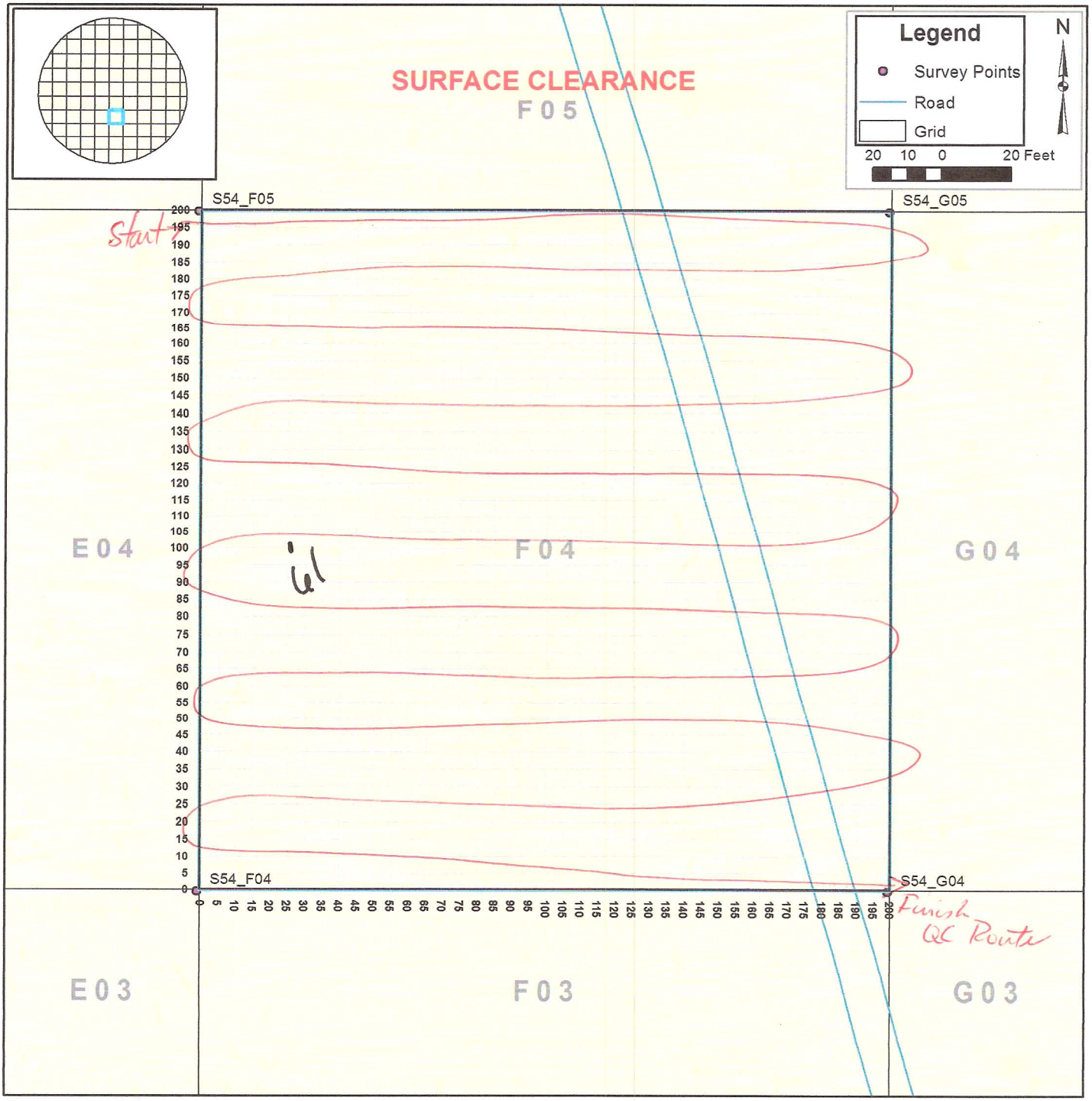
Scrap Metal: 80

Seed:
X: 25
Y: 97

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

Comments: _____

Qty	Depth(in)	Nomenclature	Filler



00099706

S54 G-02 Team : 1 2 (3)

Date Started: 3 Sep 08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 3 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

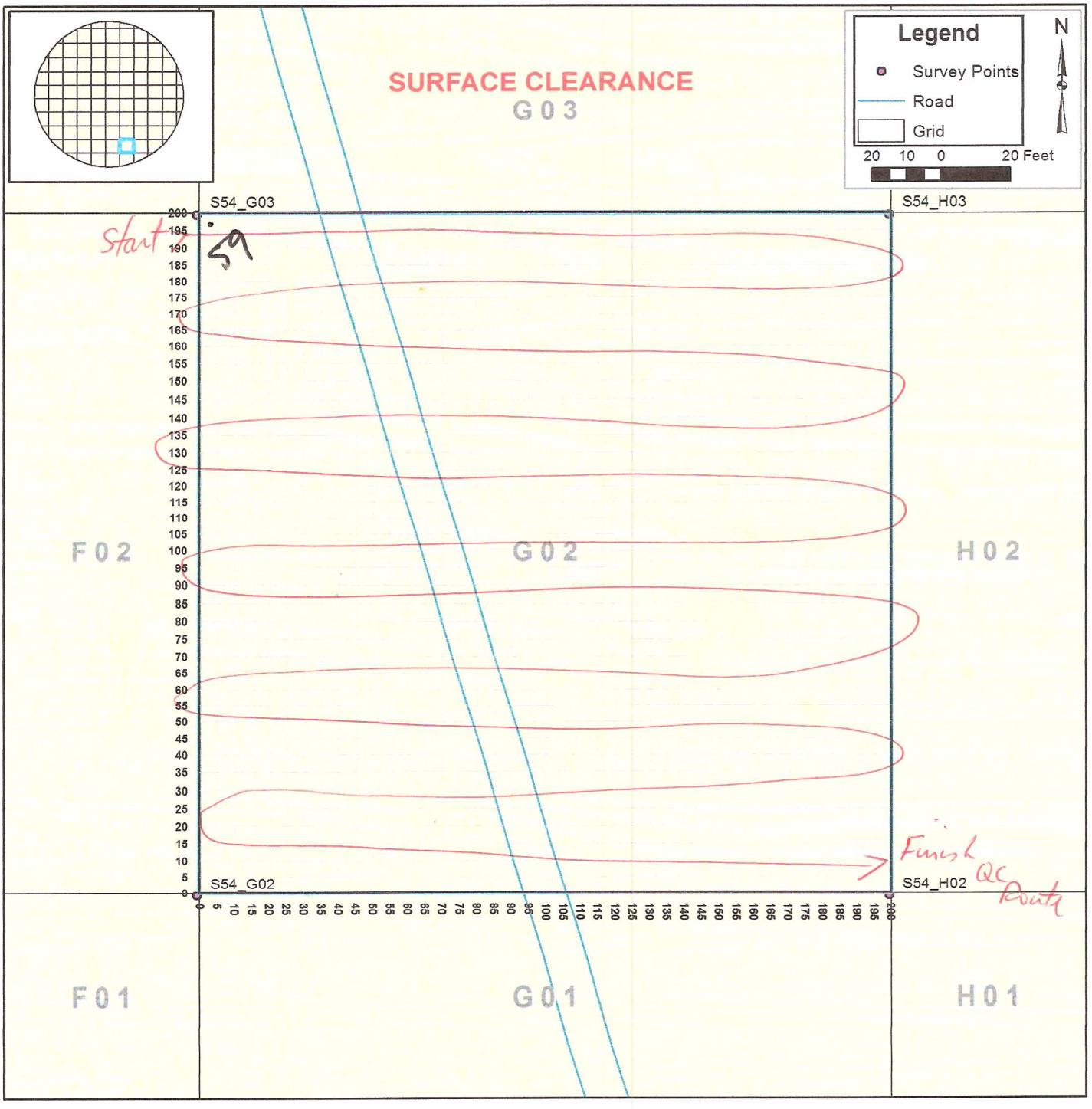
Digs: N/A
MEC #: N/A
MEC Debris: 5
Scrap Metal: 5

Seed:
X: 5
Y: 197

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099707

S54 G-03 Team : 1 2 (3)

Date Started: 3 Sep 08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 3 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ ~~-Sand~~

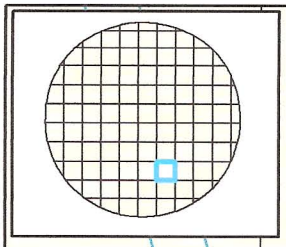
Digs: N/A
MEC #: 0
MEC Debris: 5
Scrap Metal: 75

Seed:
X: 265
Y: 20

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler

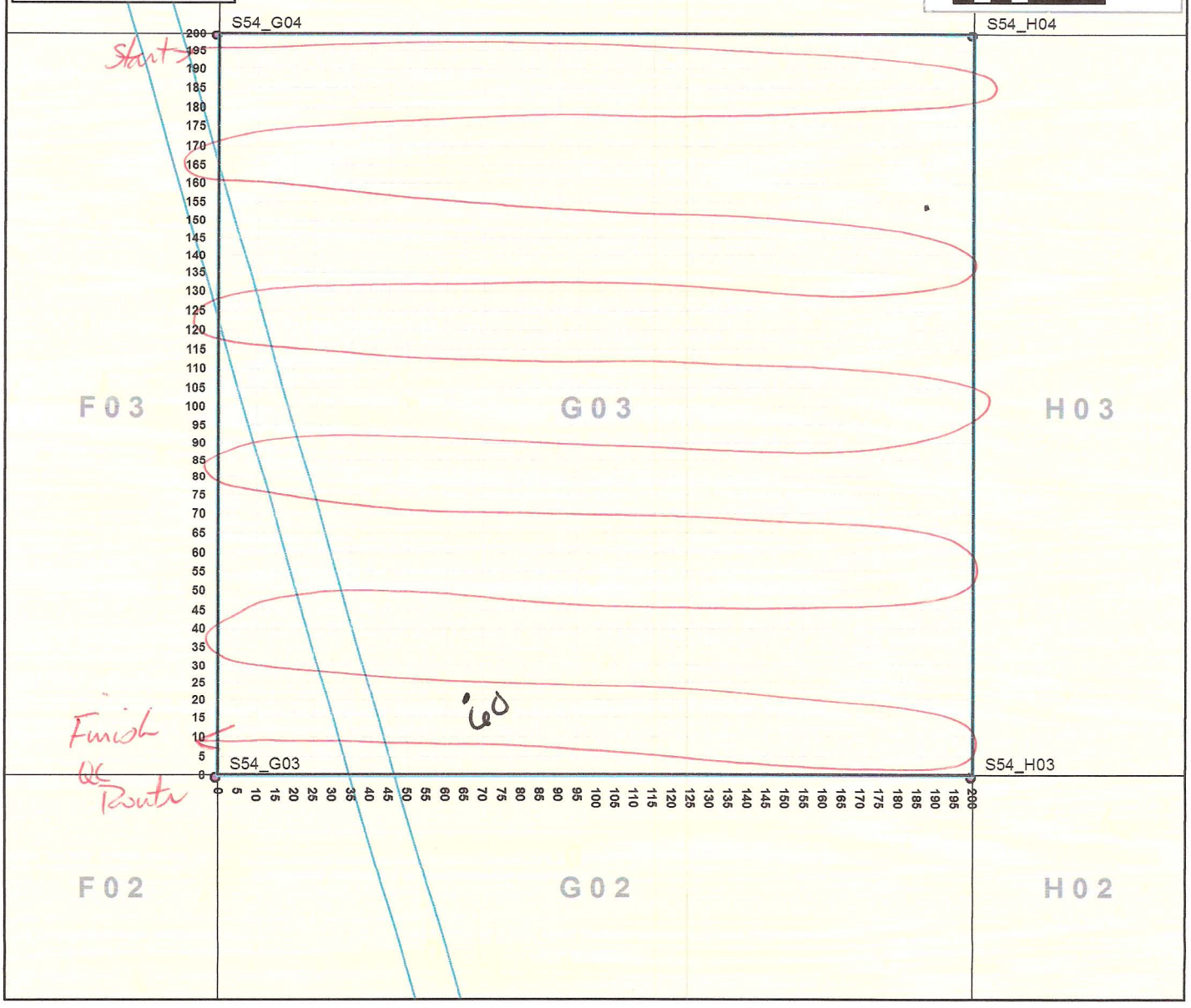


SURFACE CLEARANCE
G04

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099708

S54 G-04 Team : 1 2 ③

Date Started: 30 Sep 08
Date Surveyed: N/A
Date Grubbed: _____
Date Finished: 30 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ ~~-Sand~~

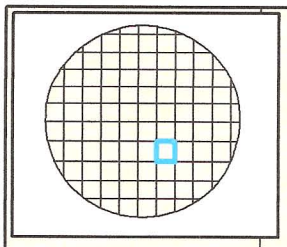
Digs: N/A
MEC #: N/A
MEC Debris: 5
Scrap Metal: 5

Seed:
X: 190
Y: 155

	P	F	Date
QC :	☒	☐	9/4/08
QA :	☒	☐	

Comments: _____

Qty	Depth(in)	Nomenclature	Filler



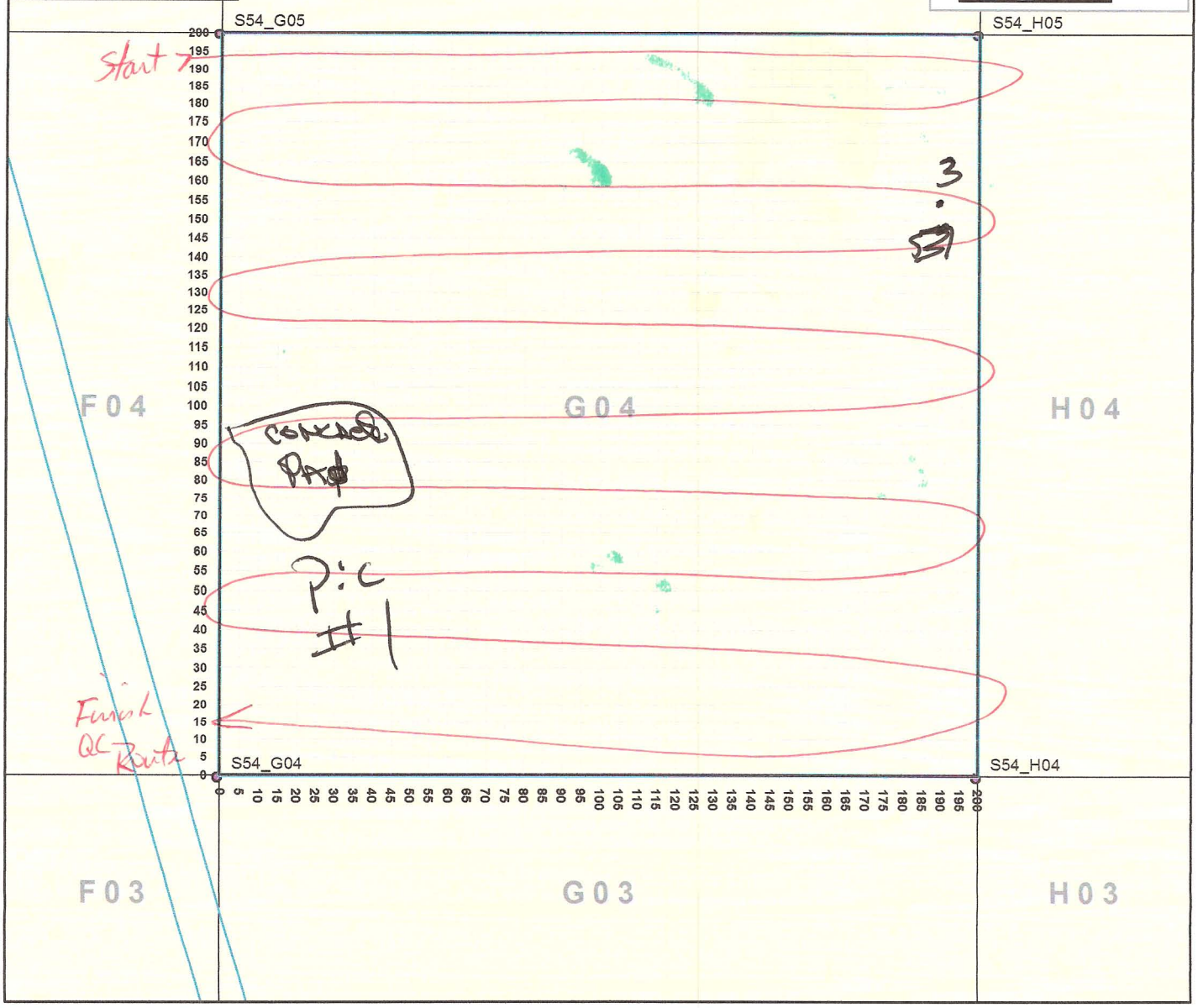
SURFACE CLEARANCE

G05

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099709

S54 H-05

Team: (1) 2 3

Date Started: 9-3-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-3-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

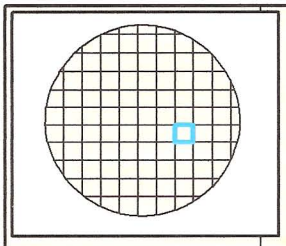
Digs: NA
MEC #: NA
MEC Debris: 100 lbs
Scrap Metal: 280 lbs

Seed:
X: 198'
Y: 90'

	P	F	Date
QC:	☒	☐	9/4/08
QA:	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

H06

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S54_H06 S54_J06

start

G05 H05 J05

X FLARE #51

Finish QC Route

S54_H05 S54_J05

G04 H04 J04

00099710

S54 H-06 Team: 1 2 3

Date Started: 9-3-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-3-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

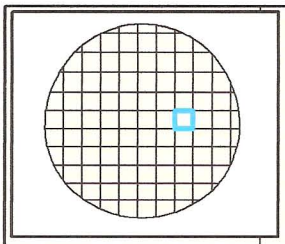
Digs: NA
MEC #: NA
MEC Debris: 200 155
Scrap Metal: ~~250~~ 165

Seed:
X: 191'
Y: 132'

	P	F	Date
QC :	X		9/4/08
QA :	X		

Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

H07

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S54_H07 S54_J07

Start

X NAIL H49

G06 H06 J06

Finish QC Route

S54_H06 S54_J06

G05 H05 J05

00099711

S54 D-01 Team :1 2 (3)

Date Started: 4 Sep

Date Surveyed: N/A

Date Gru:bbed:

Date Finished: 4 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ ~~-Sand~~

Digs: N/A

MEC #: 0

MEC Debris: 5

Scrap Metal: 5

Seed:

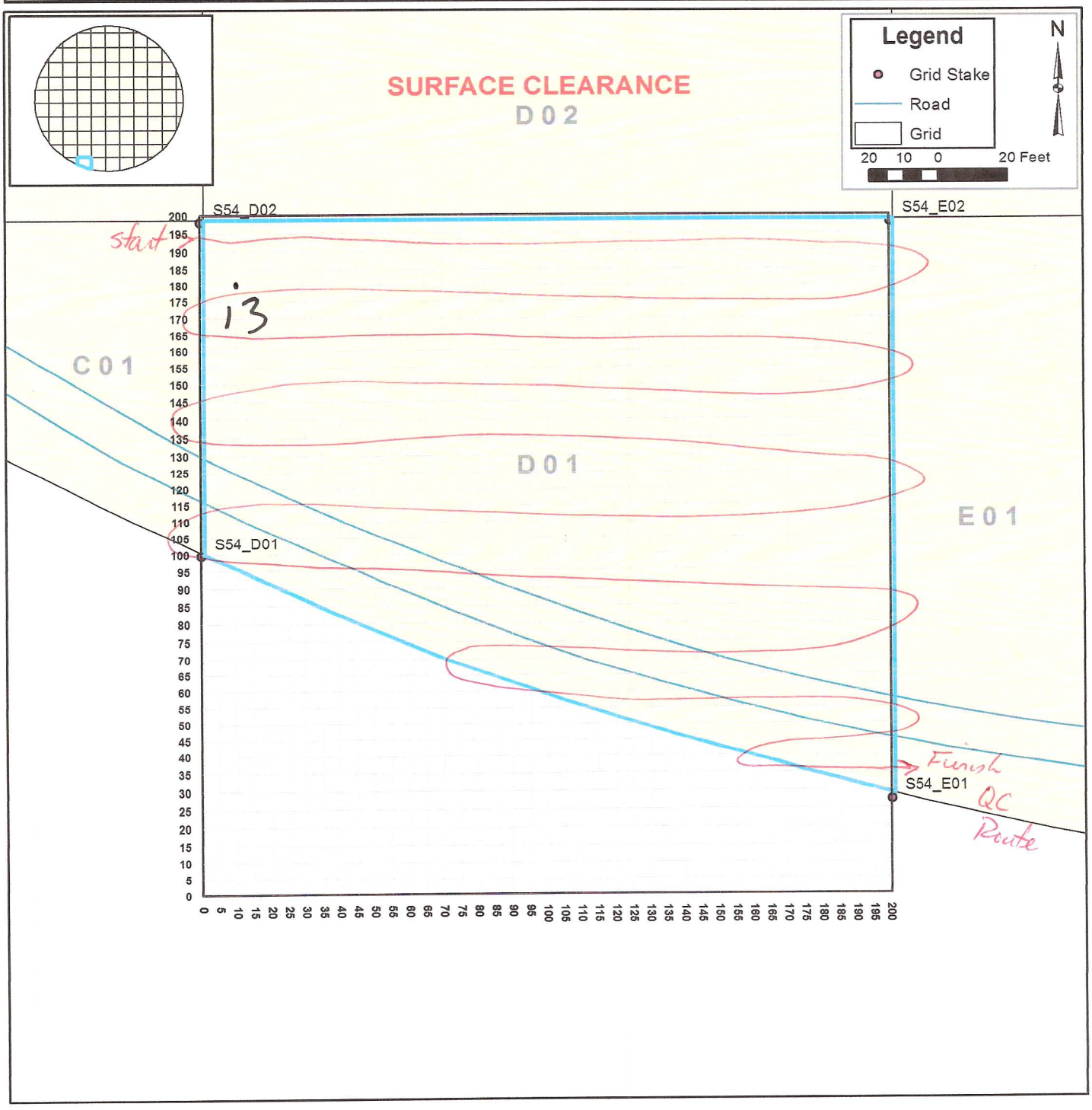
X: 10

Y: 180

	P	F	Date
QC :	☒	☐	9/5/08
QA :	☒	☐	9/5/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099712

S54 D-02 Team : 1 2 (3)

Date Started: 4 Sep 08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 4 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ ~~-Sand~~

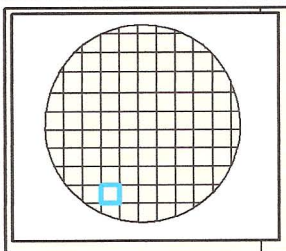
Digs: N/A
MEC #: 0
MEC Debris: 5
Scrap Metal: 0

Seed:
X: 46
Y: 75

	P	F	Date
QC :	☒	☐	9/5/08
QA :	☒	☐	9/5/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



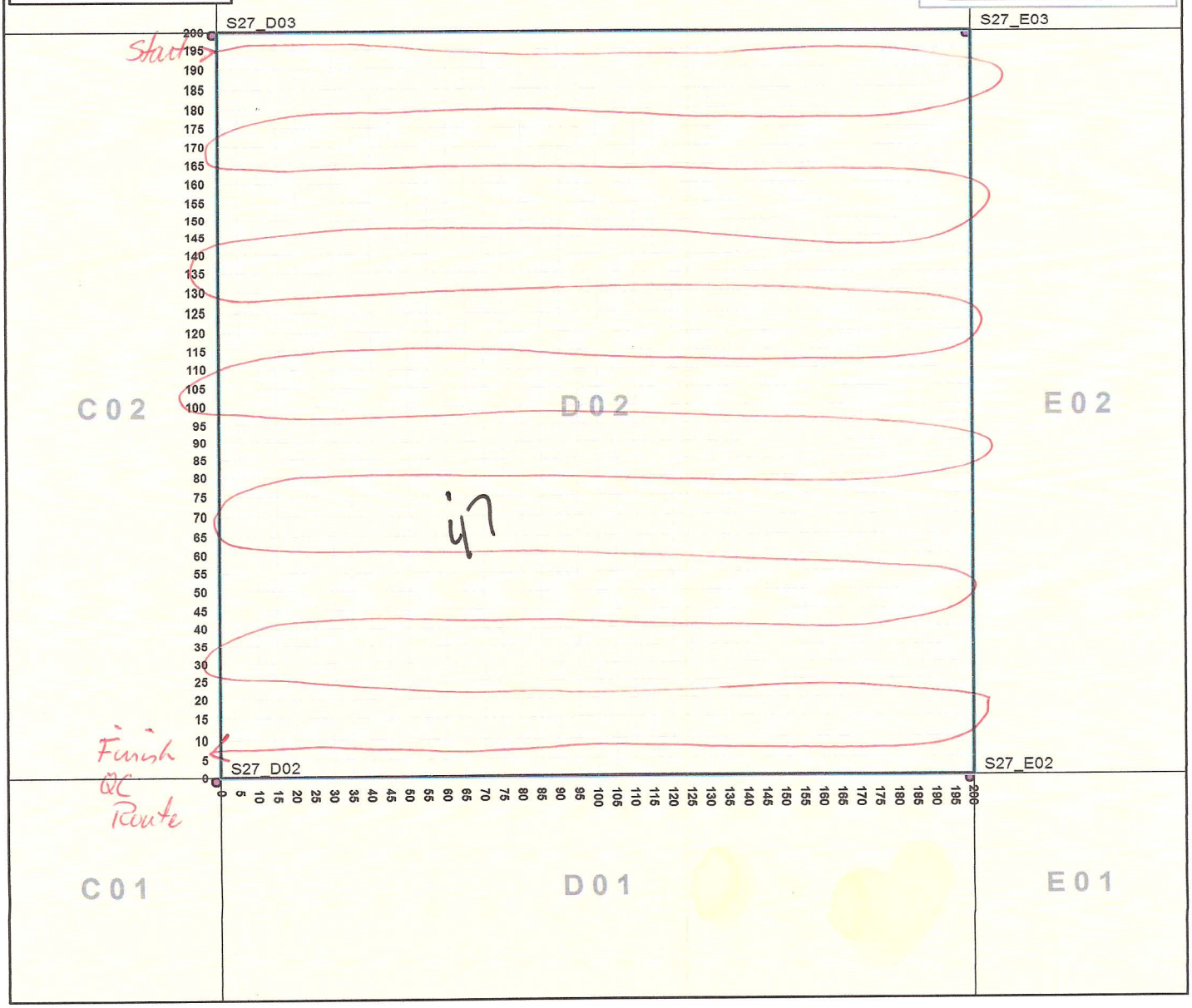
SURFACE CLEARANCE

D03

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099713

S54 D-09 Team :1 2 (3)

Date Started: 4Sep08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 4Sep08

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

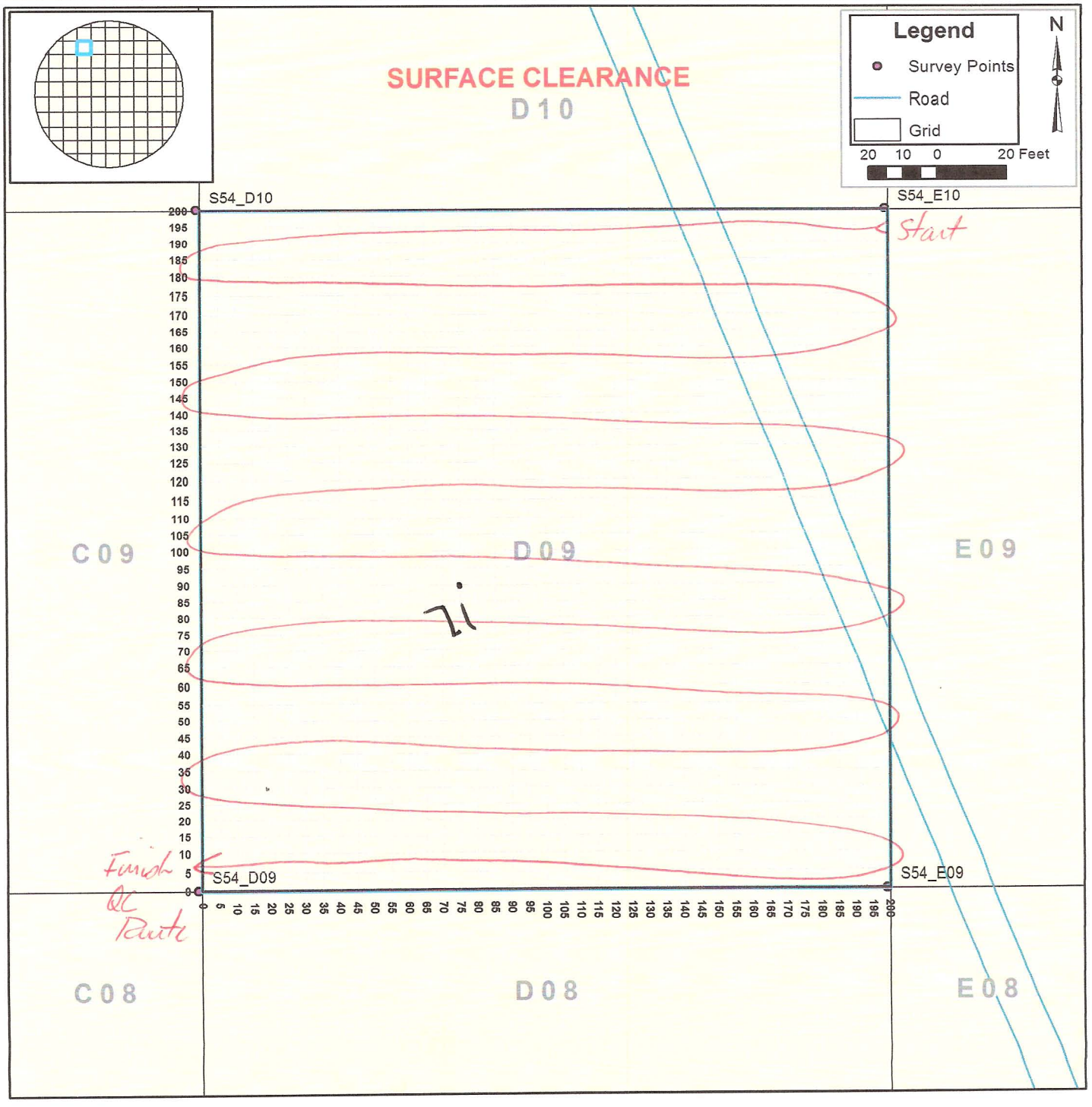
Digs: N/A
MEC #: 0
MEC Debris: 20
Scrap Metal: 200

Seed:
X: 75
Y: 90

	P	F	Date
QC :	☒	☐	9/5/08
QA :	☒	☐	9/5/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099714

S54 D-10 Team :1 2 (3)

Date Started: 4/5/08
Date Surveyed: N/A
Date Grubbed: _____
Date Finished: 4/5/08

Soil:
- ☐ Clay
- ☐ Limestone
- ☐ Loam
- ☑ Sand

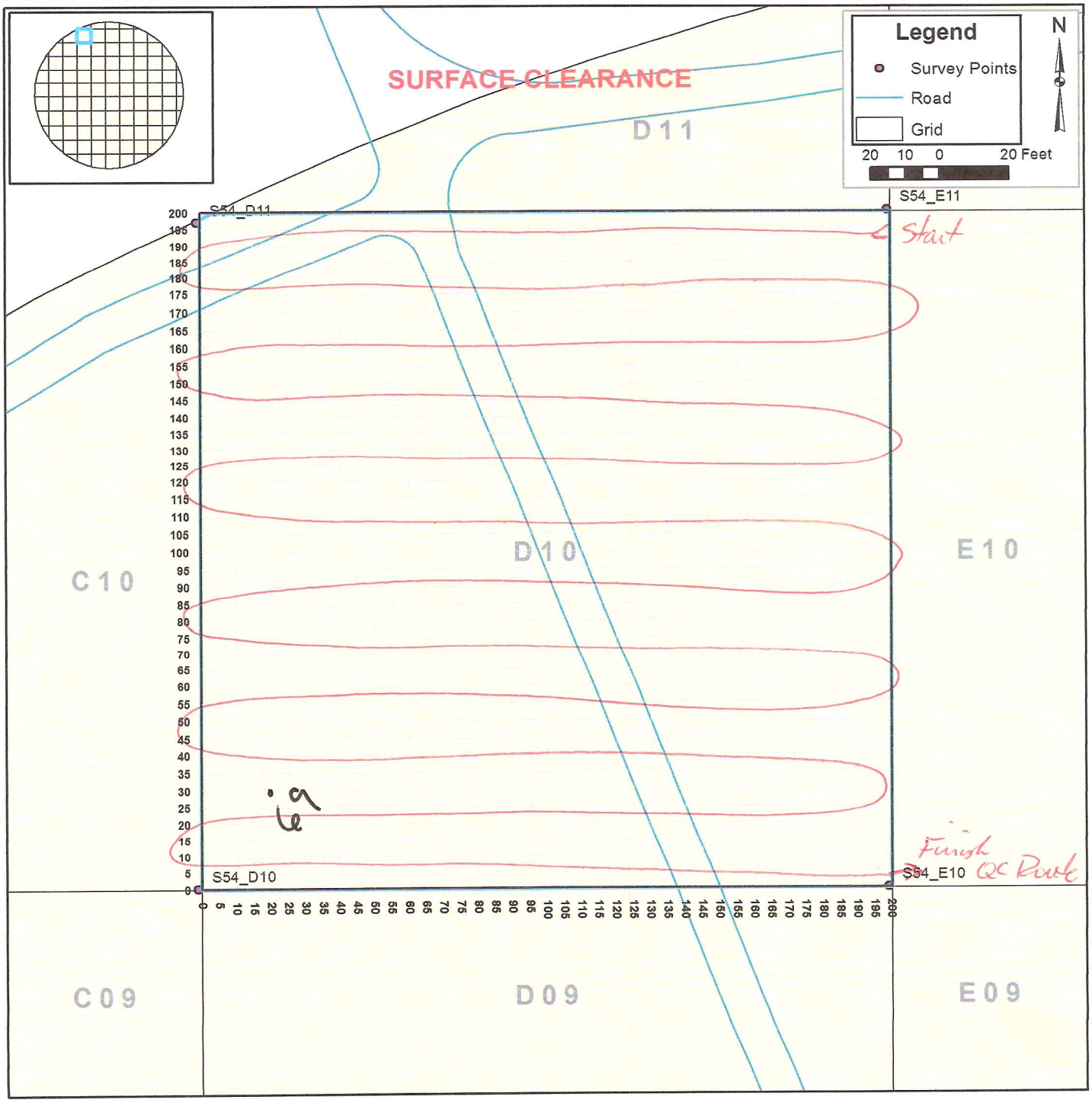
Digs: 0
MEC #: 8
MEC Debris: 10
Scrap Metal: 55

Seed:
X: 20
Y: 30

	P	F	Date
QC :	X		4/5/08
QA :	X		4/5/08

Comments: _____

Qty	Depth(in)	Nomenclature	Filler



00099715

S54 D-11 Team :1 2 (3)

Date Started: 4/5/08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 4/5/08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☐ ~~-Sand~~

Digs: N/A
MEC #: 0
MEC Debris: 5
Scrap Metal: 25

Seed:
X: 195
Y: 5

	P	F	Date
QC :	☒	☐	4/5/08
QA :	☒	☐	4/5/08

Comments:

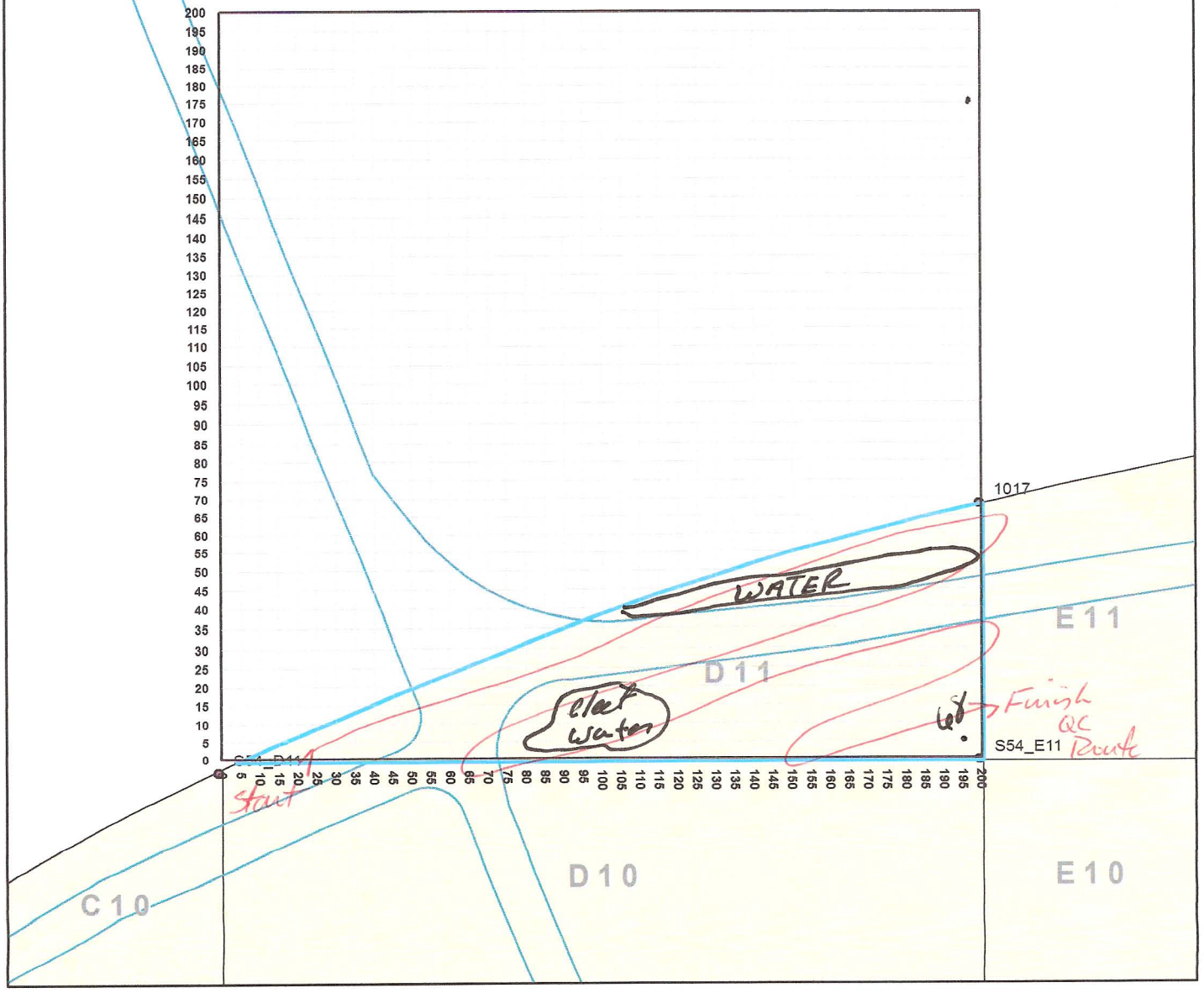
Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099716

S54 G-01 Team : 1 2 (3)

Date Started: 4 Sep 08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 4 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

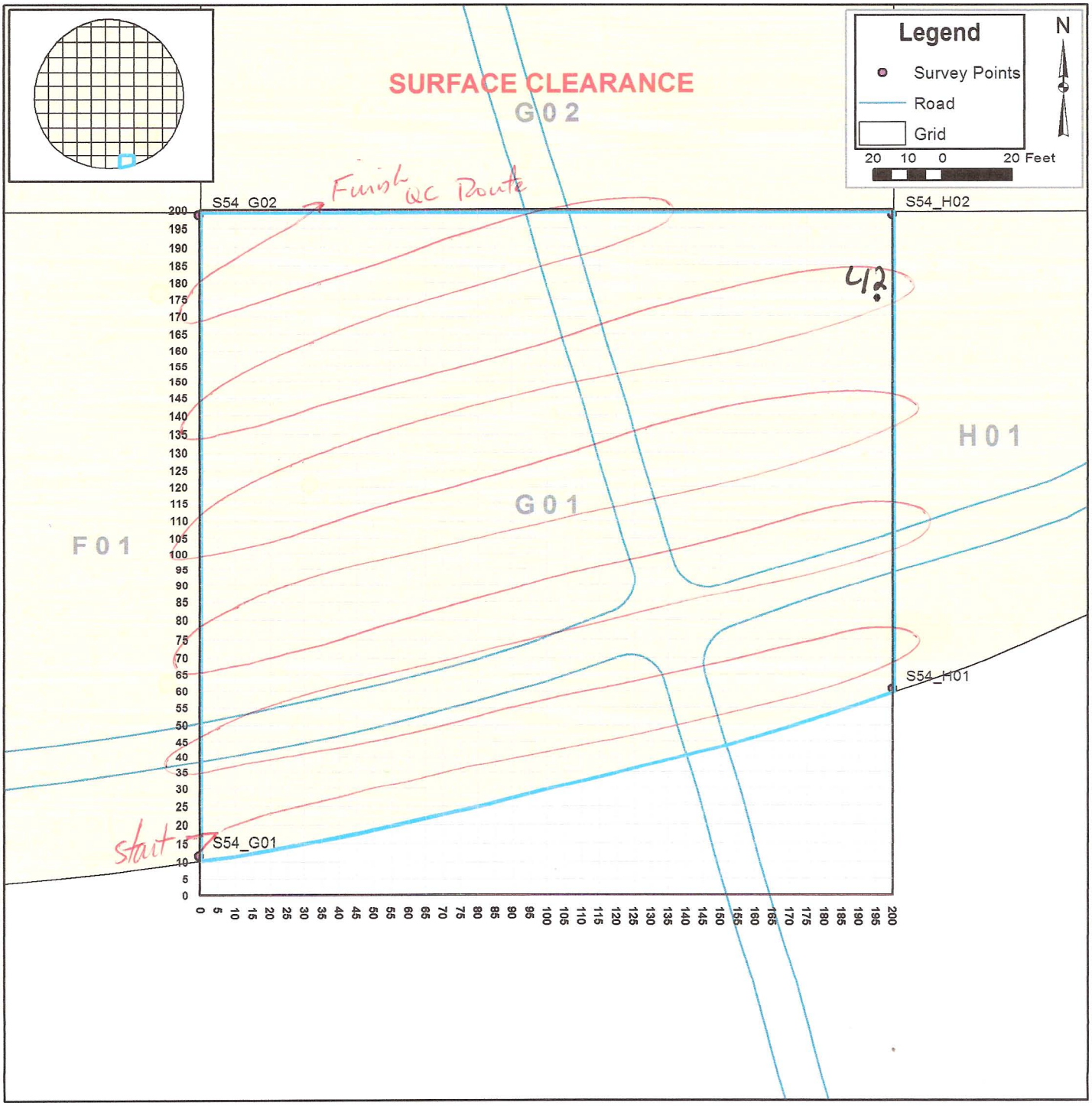
Digs: N/A
MEC #: 0
MEC Debris: 5
Scrap Metal: 25

Seed:
X: 195
Y: 175

	P	F	Date
QC :	☒	☐	9/5/08
QA :	☒	☐	9/5/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099717

S54 A-09 Team: 1 2 3

Date Started: 9-5-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-5-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

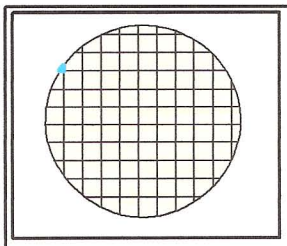
Digs: NA
MEC #: NA
MEC Debris: Ø lbs
Scrap Metal: Ø lbs

Seed:
X: 178'
Y: 32'

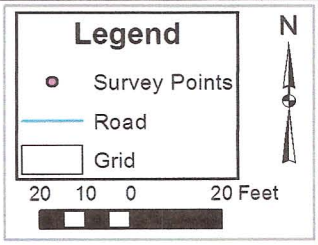
	P	F	Date
QC :	☒	☐	9/8/08
QA :	☒	☐	9/8/08

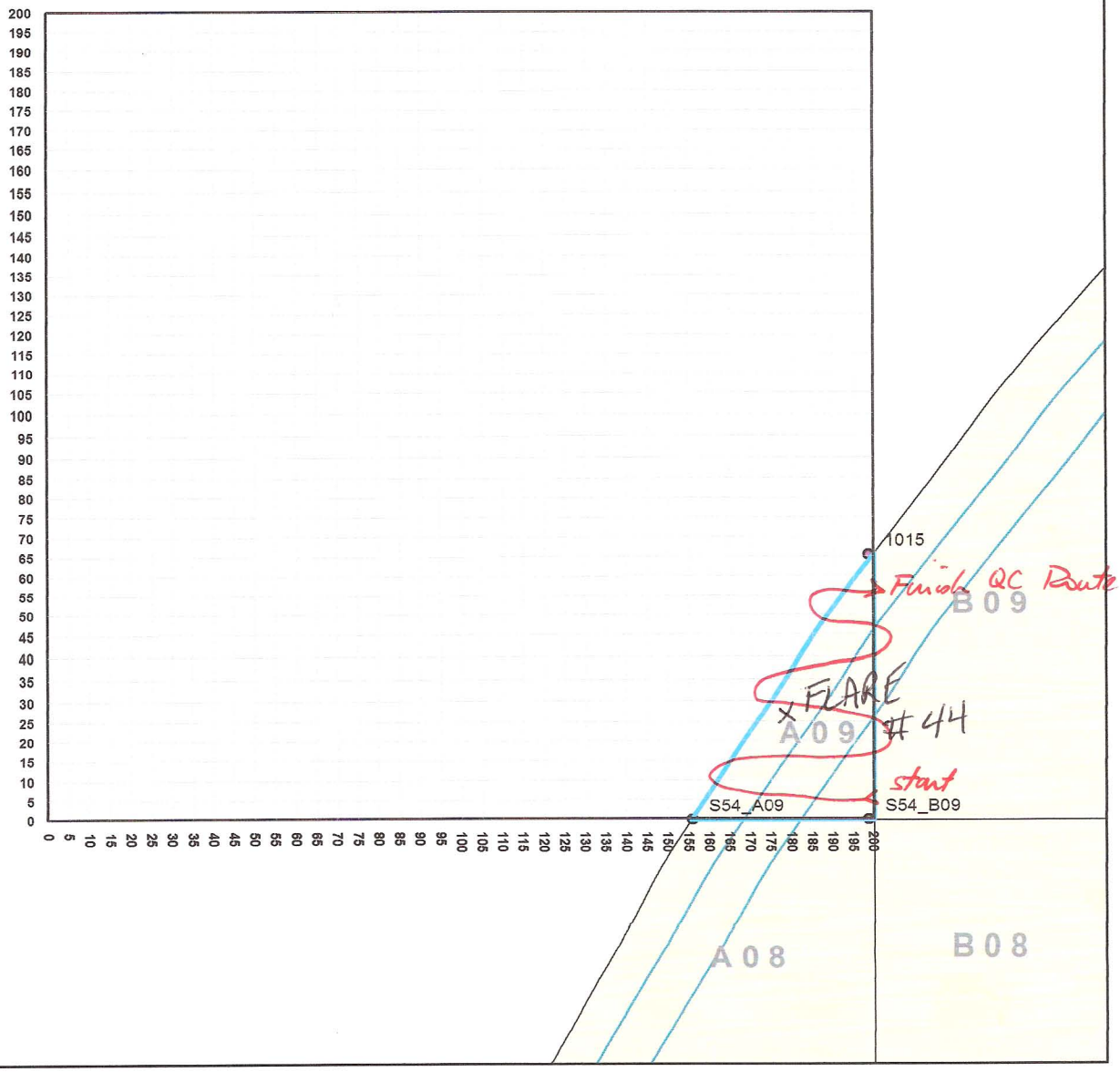
Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE





00099718

S54 B-06 Team : (1) 2 3

Date Started: 9-4-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-5-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

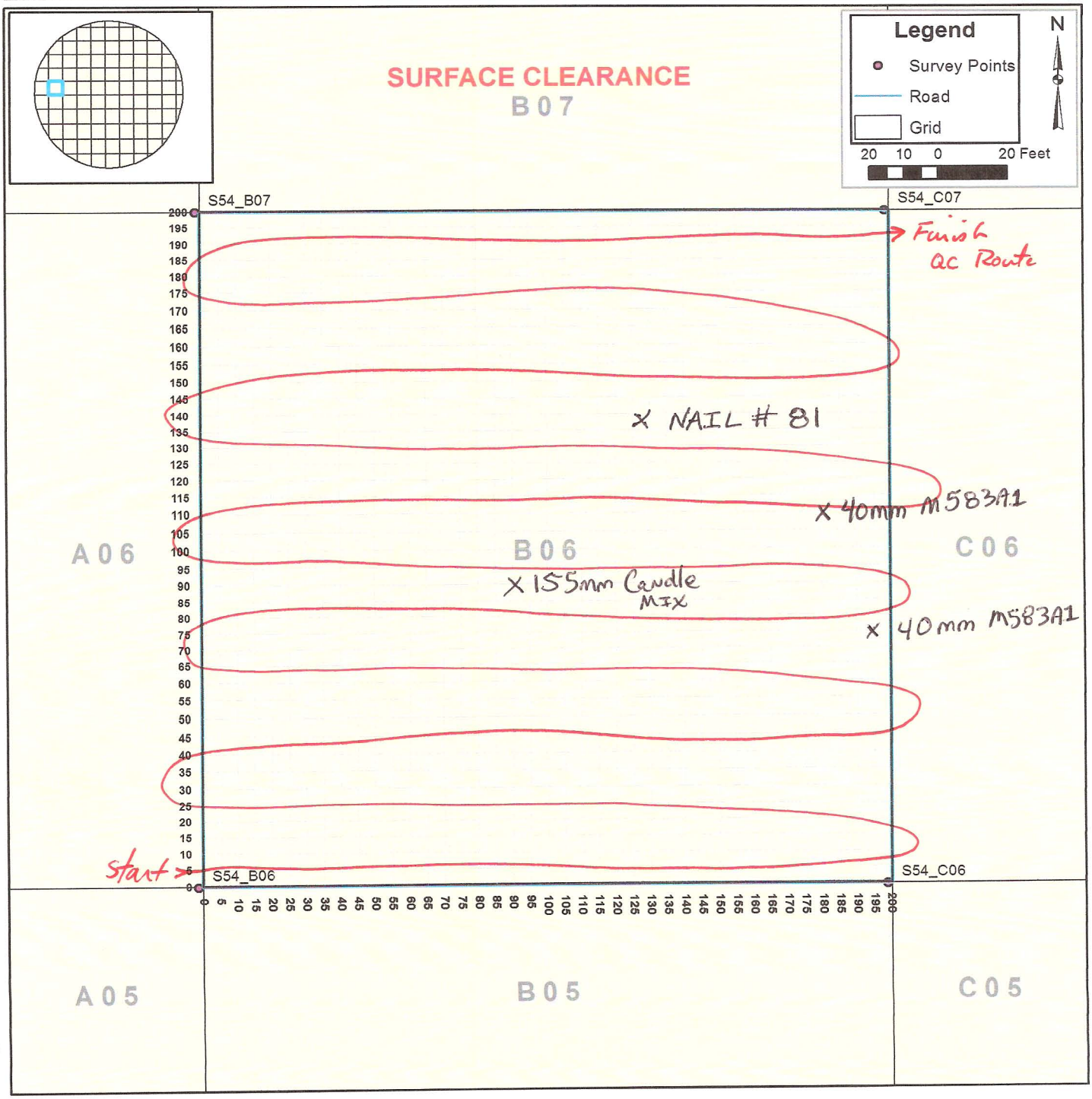
Digs: NA
MEC #: 01, 02, 03
MEC Debris: 15 lbs
Scrap Metal: Ø lbs

Seed:
X: 128'
Y: 139'

	P	F	Date
QC :	☒	☐	9/8/08
QA :	☒	☐	9/8/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099719

S54 B-07

Team : 1 2 3

Date Started: 9-5-2008

Date Surveryed: NA

Date Gru:bbed: NA

Date Finished: 9-5-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 5 lbs

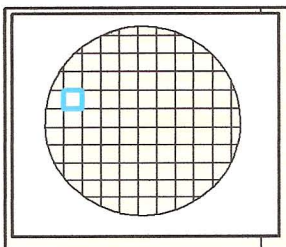
Scrap Metal: 5 lbs

Seed:
X: 97'
Y: 5'

	P	F	Date
QC :	☒	☐	9/8/08
QA :	☒	☐	9/8/08

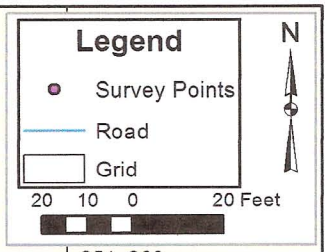
Comments:

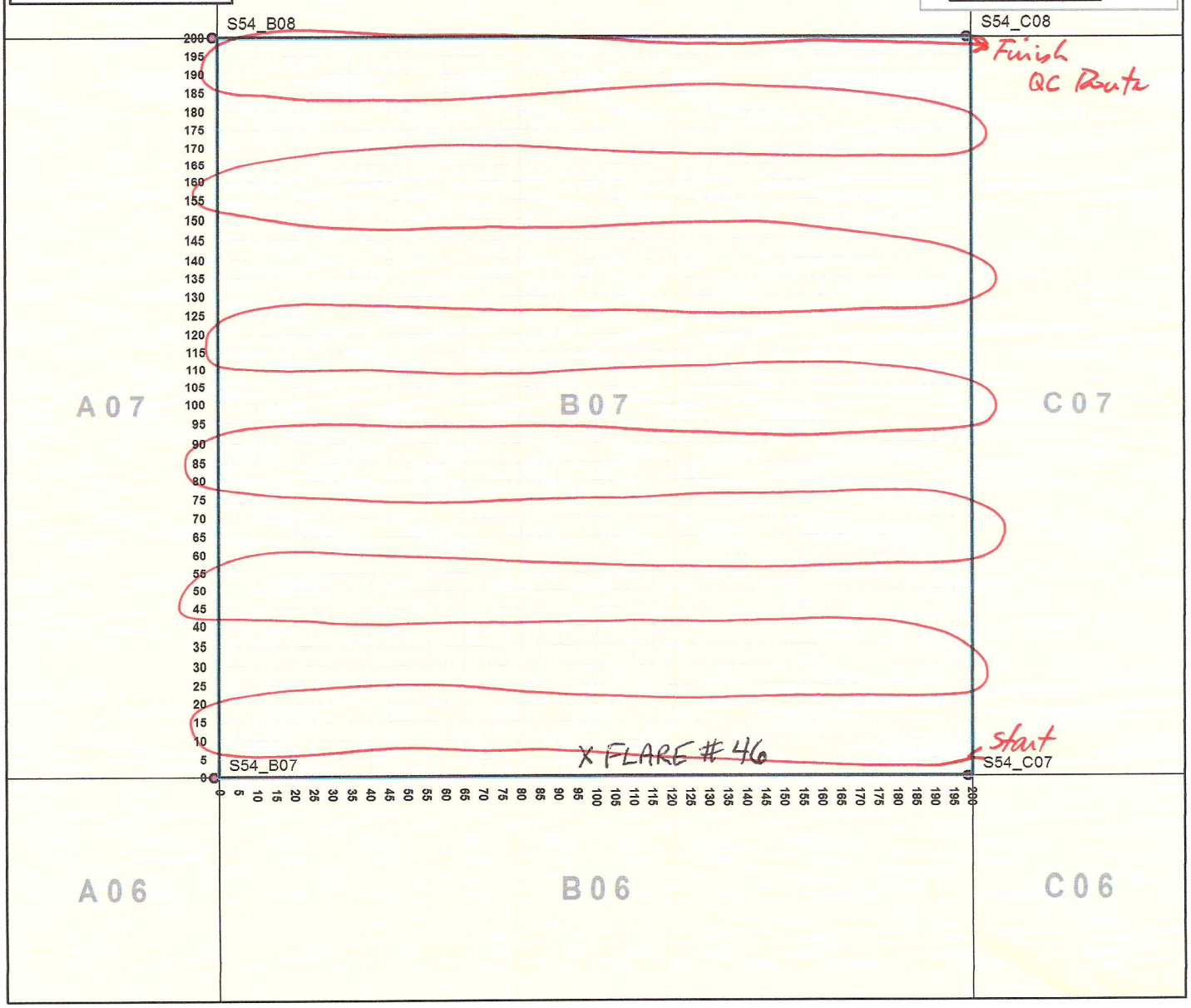
Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

B 0 8





00099720

S54 B-08

Team (1) 2 3

Date Started: 9-5-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-5-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 5 lbs

Scrap Metal: 40lbs

Seed:

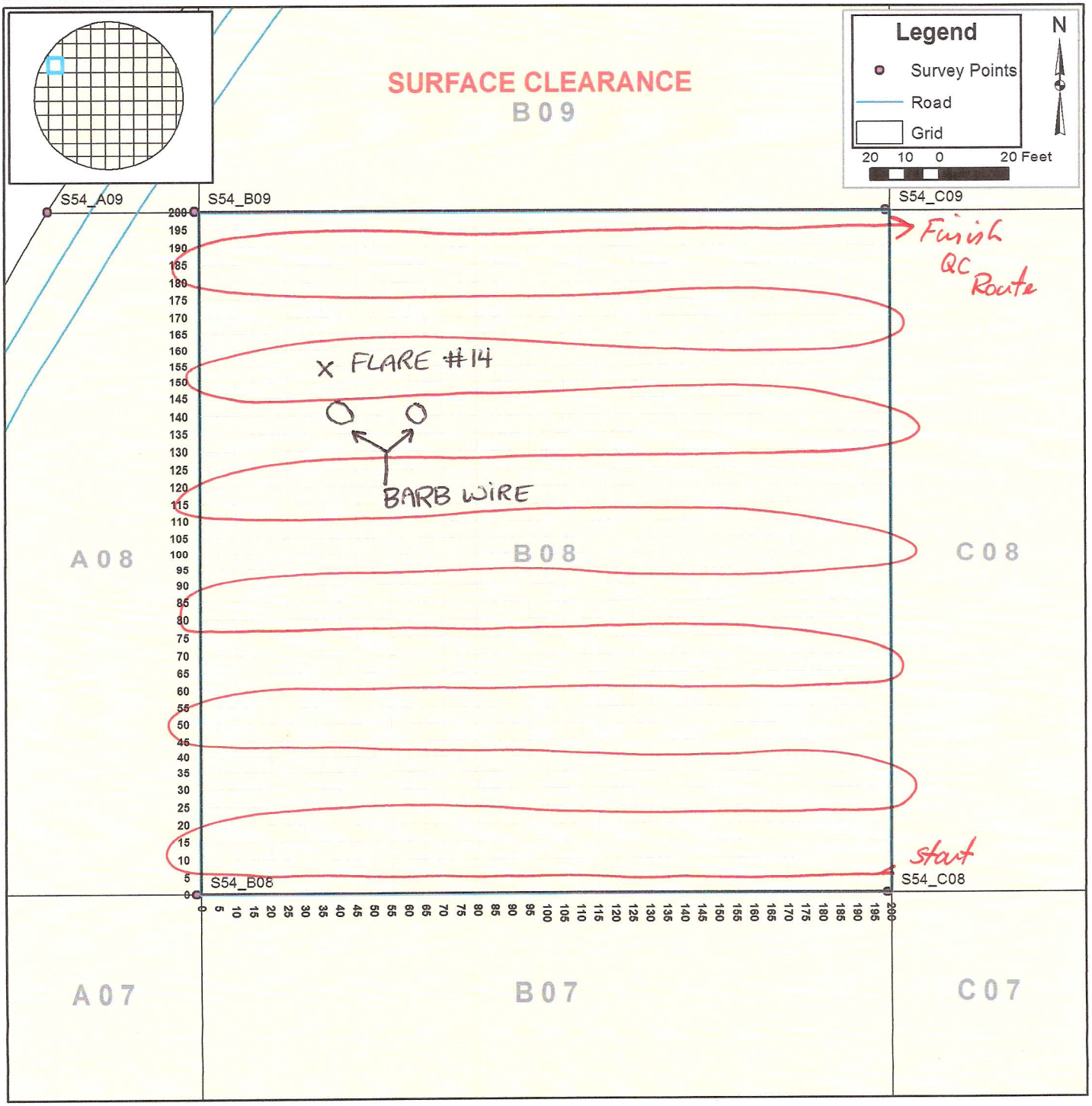
X: 36'

Y: 154'

	P	F	Date
QC :	☒	☐	9/8/08
QA :	☒	☐	9/5/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099721

S54 B-09

Team : (1) 2 3

Date Started: 9-5-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: _____

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 5 lbs

Scrap Metal: 50 lbs

Seed:

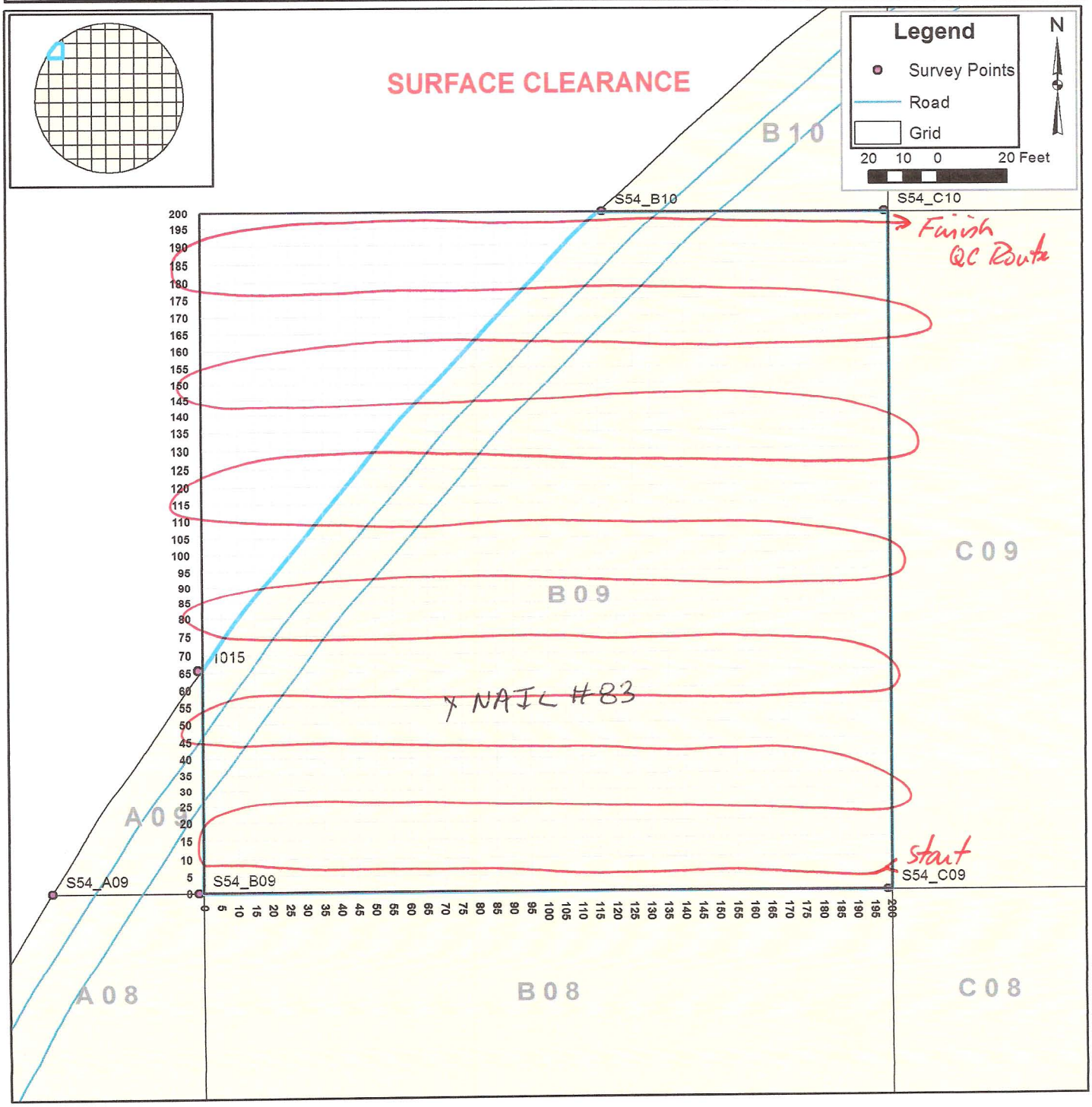
X: 73'

Y: 57'

	P	F	Date
QC :	☒	☐	9/8/08
QA :	☒	☐	9/8/08

Comments: _____

Qty	Depth(in)	Nomenclature	Filler



00099722

S54 B-10 Team (1) 2 3

Date Started: 9-5-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-5-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA
MEC #: NA
MEC Debris: 5 lbs
Scrap Metal: 30 lbs

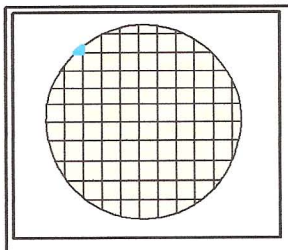
Seed:
X: 116'
Y: 2'

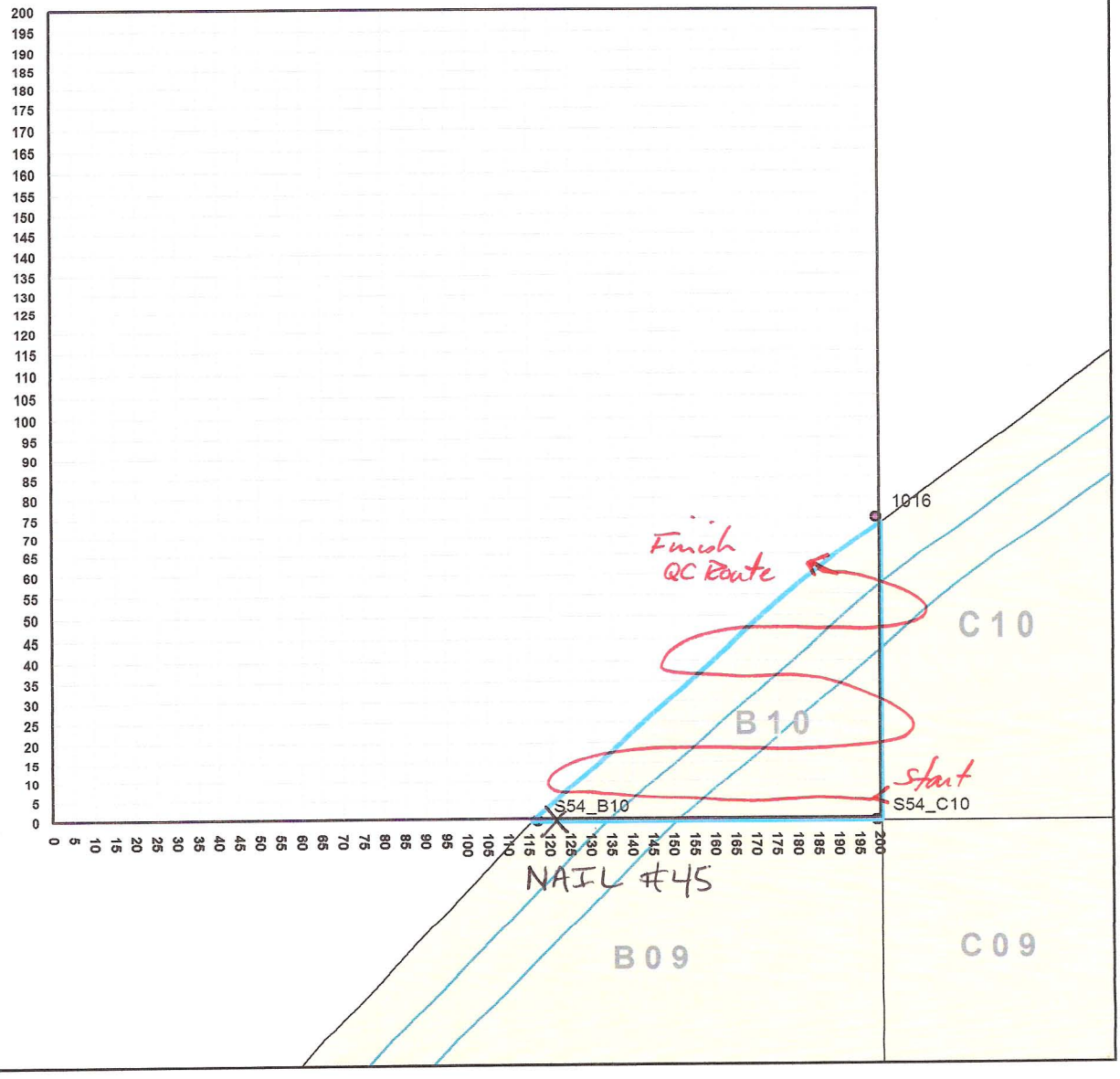
	P	F	Date
QC :	☒	☐	9/8/08
QA :	☒	☐	9/8/08

Comments:

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE





00099723

S54 C-01 Team (1) 2 3

Date Started: 9-3-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-3-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

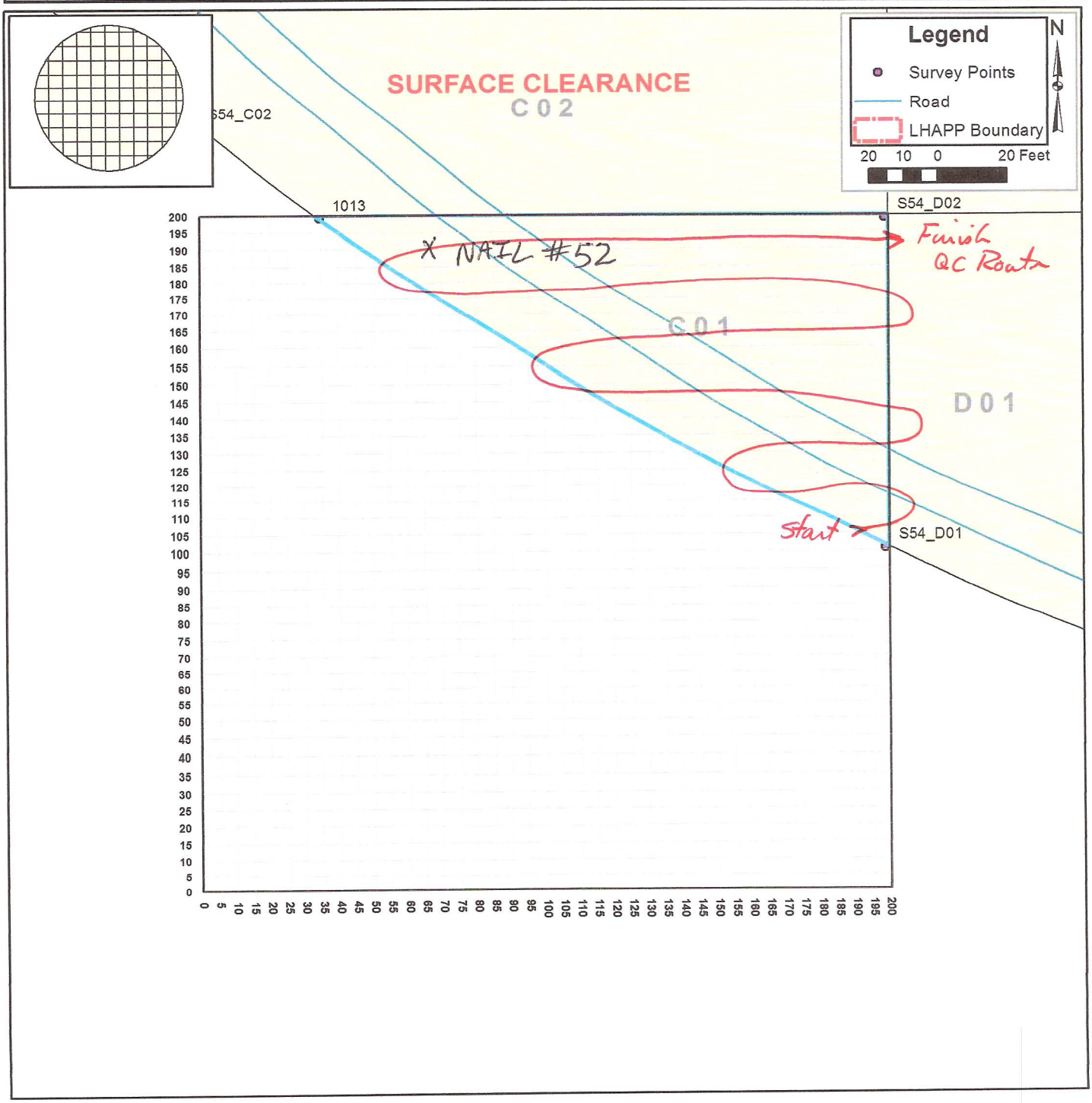
Digs: NA
MEC #: NA
MEC Debris: Ø lbs
Scrap Metal: 35 lbs

Seed:
X: 66'
Y: 191'

	P	F	Date
QC :	☒	☐	9/8/08
QA :	☒	☐	9/8/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099724

S54 D-03 Team : 1 2 (3)

Date Started: 4/30/08

Date Surveyed: N/A

Date Gru:bbed:

Date Finished: 5/1/08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ ~~-Sand~~

Digs: N/A

MEC #: 0

MEC Debris: 55

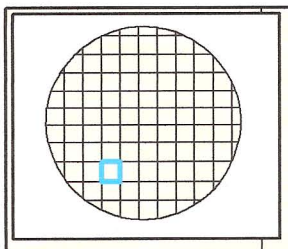
Scrap Metal: 0

Seed:
X: 95
Y: 50

	P	F	Date
QC :	☒	☐	9/8/08
QA :	☒	☐	9/8/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



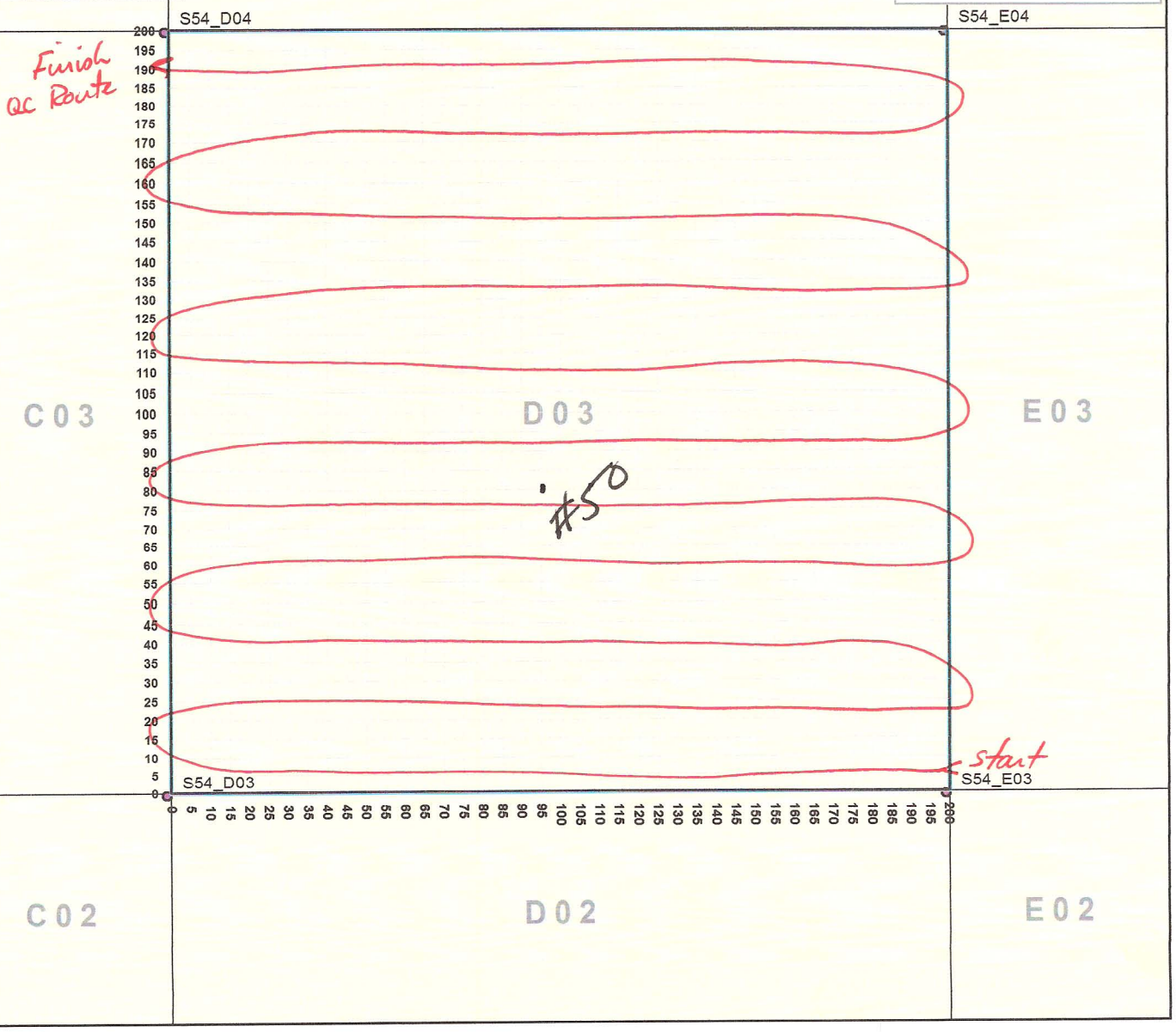
SURFACE CLEARANCE

D 0 4

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099725

S54 D-04

Team :1 2 ③

Date Started: 5 Sep 08

Date Surveyed: N/A

Date Gru:bbed:

Date Finished: 5 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N/A

MEC #: 0

MEC Debris: 25

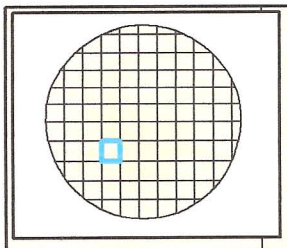
Scrap Metal: 10

Seed:
X: 60
Y: 30

	P	F	Date
QC :	☒	☐	9/8/08
QA :	☒	☐	9/8/08

Comments:

Qty	Depth(in)	Nomenclature	Filler

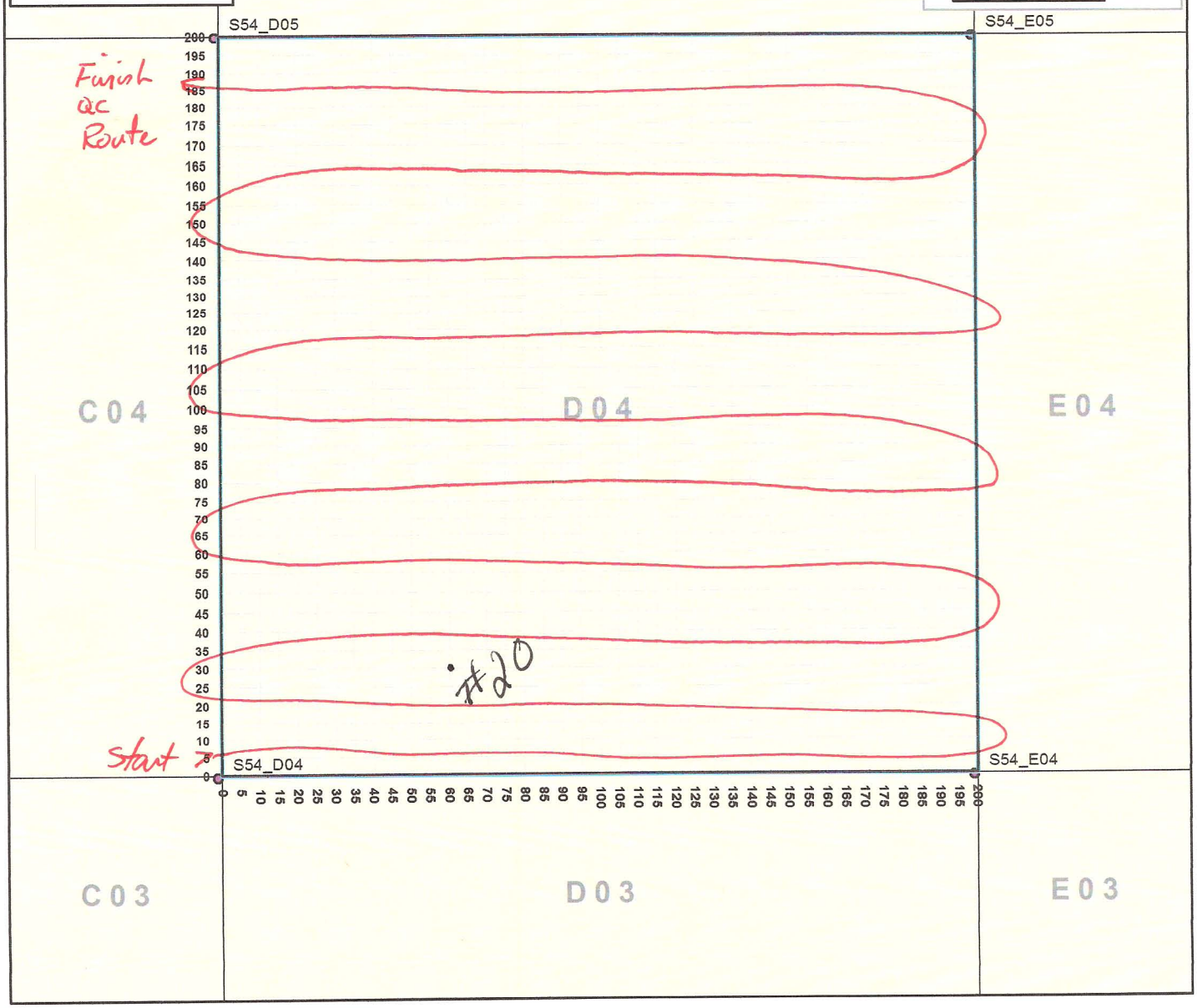


SURFACE CLEARANCE
D 0 5

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099726

S54 D-05 Team : 1 2 3

Date Started: 5 Sep 08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 5 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

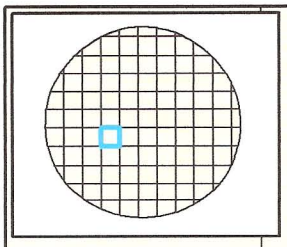
Digs: N/A
MEC #: 0
MEC Debris: 100
Scrap Metal: 45

Seed:
X: 5
Y: 195

	P	F	Date
QC :	X		9/8/08
QA :	X		9/8/08

Comments:

Qty	Depth(in)	Nomenclature	Filler

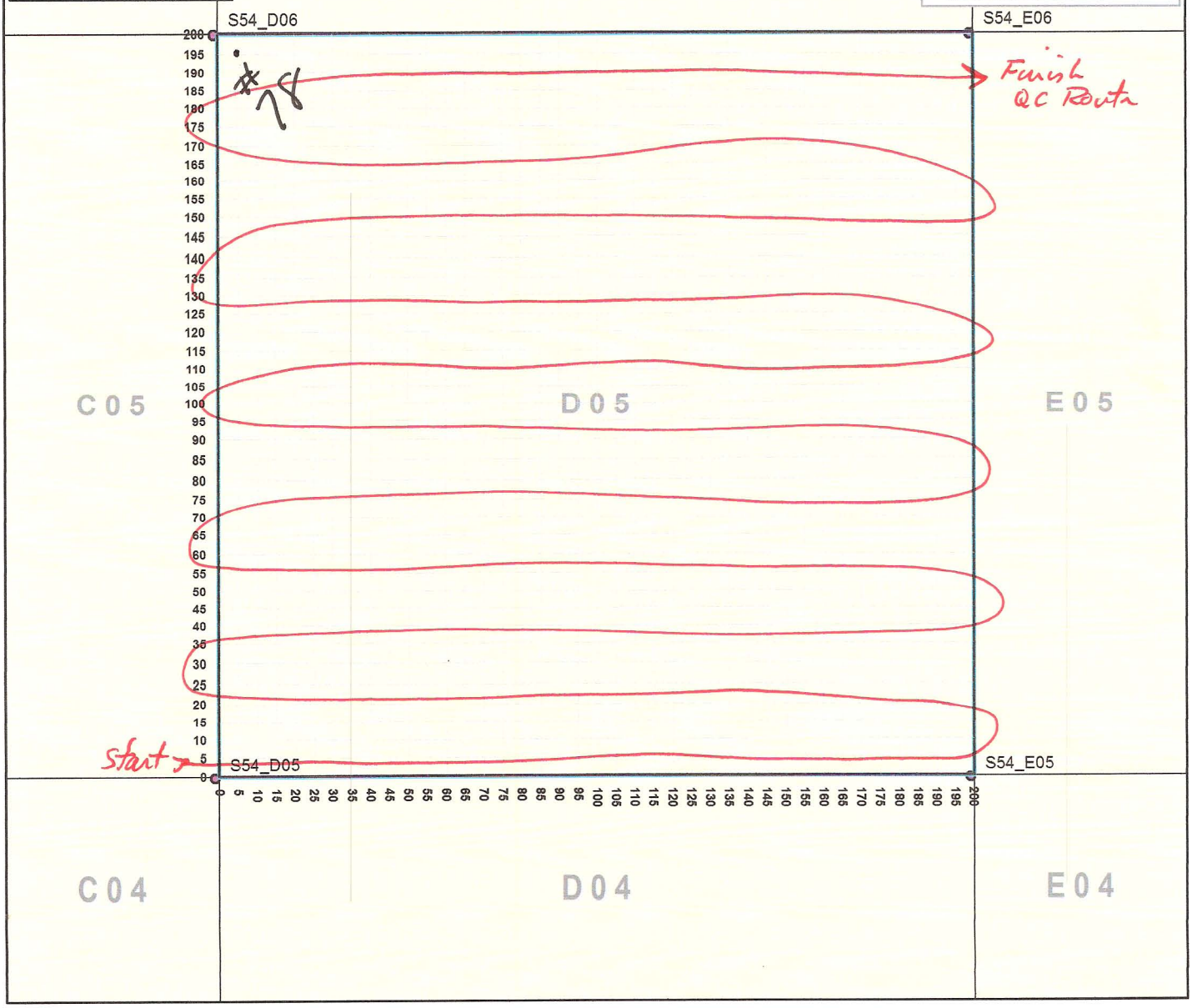


SURFACE CLEARANCE
D06

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099727

S54 A-03 Team (1) 2 3

Date Started: 9-8-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-8-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

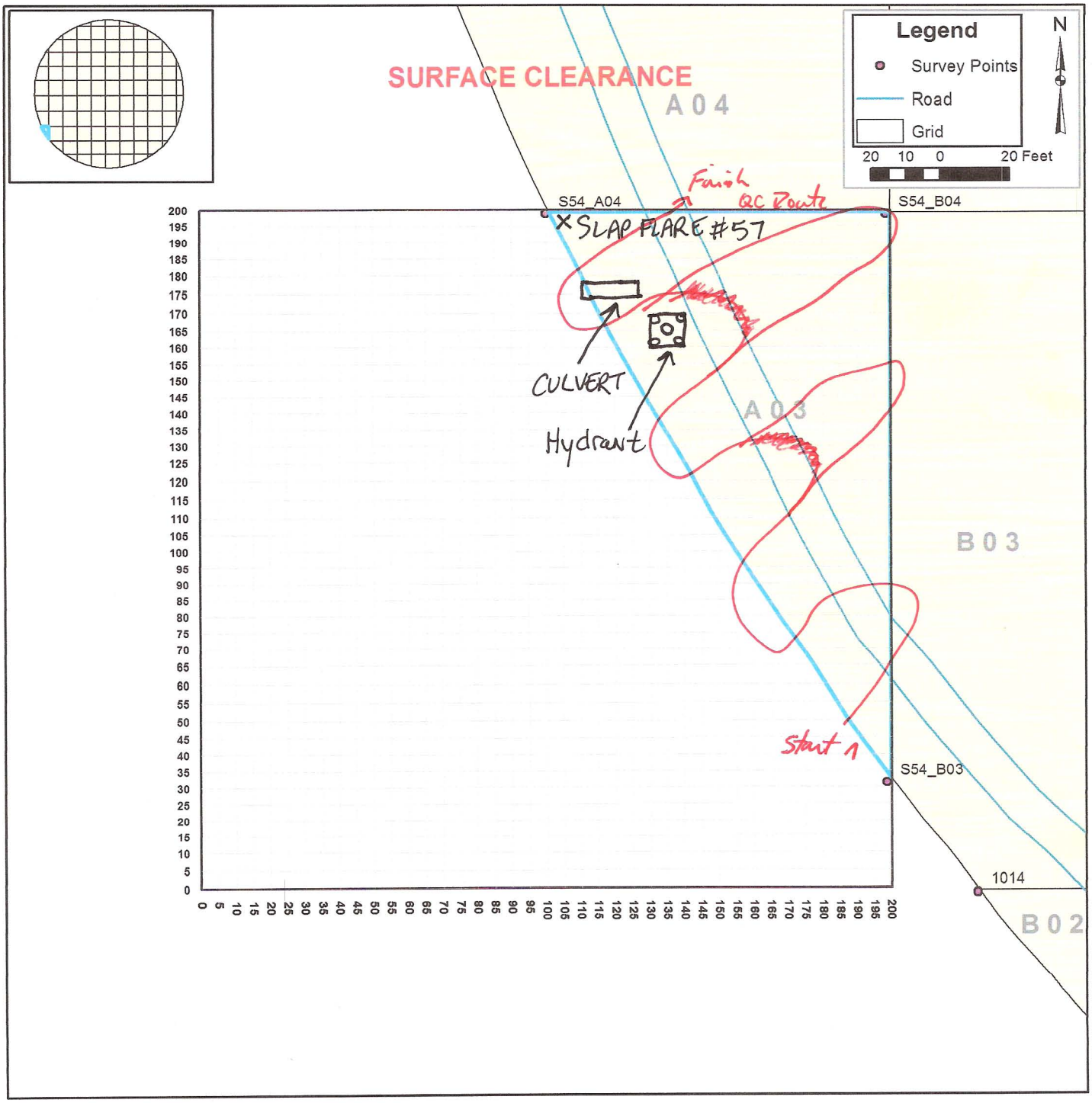
Digs: NA
MEC #: NA
MEC Debris: 2 lbs
Scrap Metal: 0 lbs

Seed:
X: 102'
Y: 198'

	P	F	Date
QC :	X	☐	9/9/08
QA :	☐	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099728

S54 A-04 Team (1) 2 3

Date Started: 9-8-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-8-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

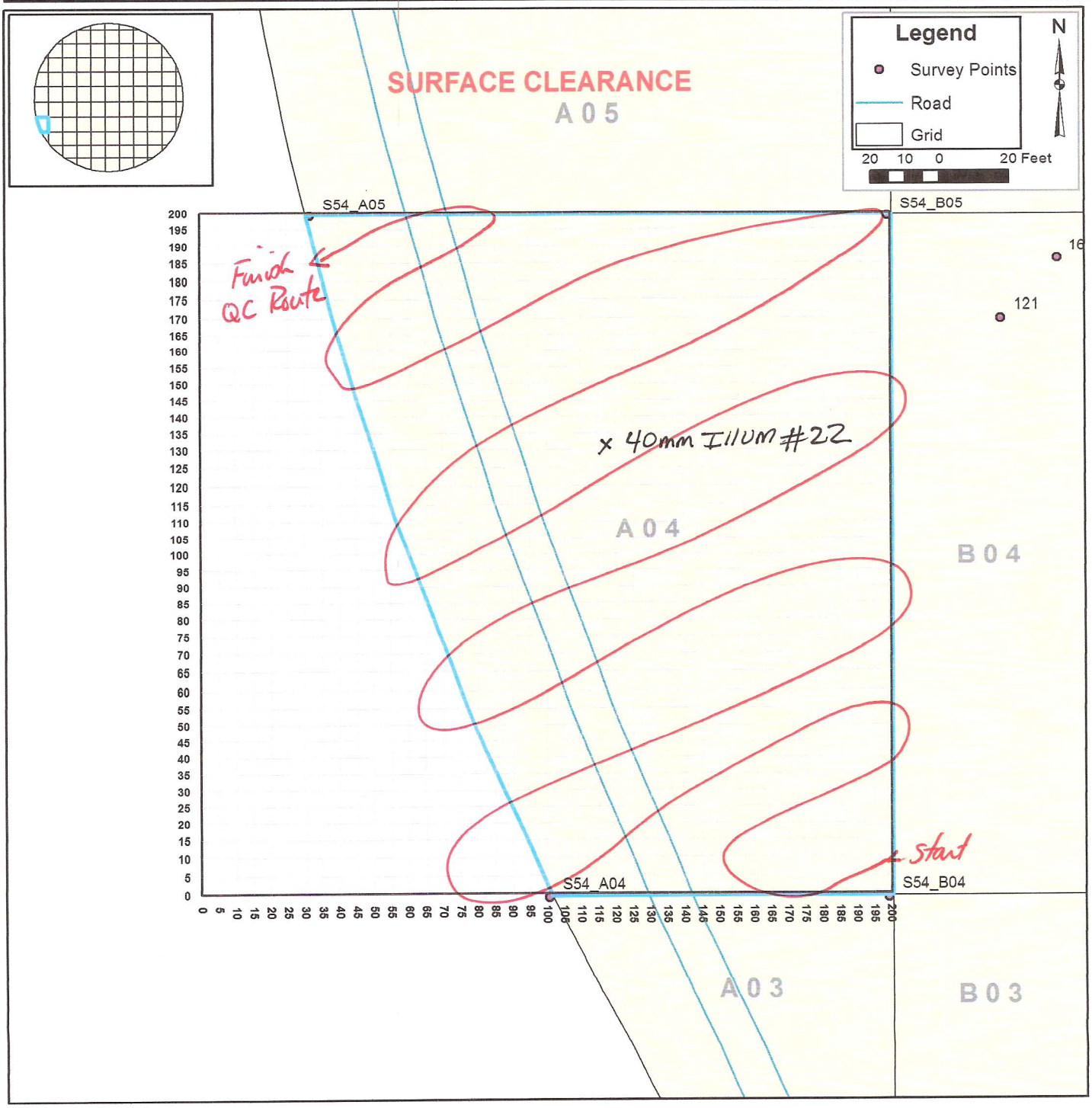
Digs: NA
MEC #: NA
MEC Debris: 20 lbs
Scrap Metal: 0 lbs

Seed:
X: 118'
Y: 132'

	P	F	Date
QC :	☒	☐	9/9/08
QA :	☑	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099729

S54 A-05

Team (1) 2 3

Date Started: 9-8-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-8-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

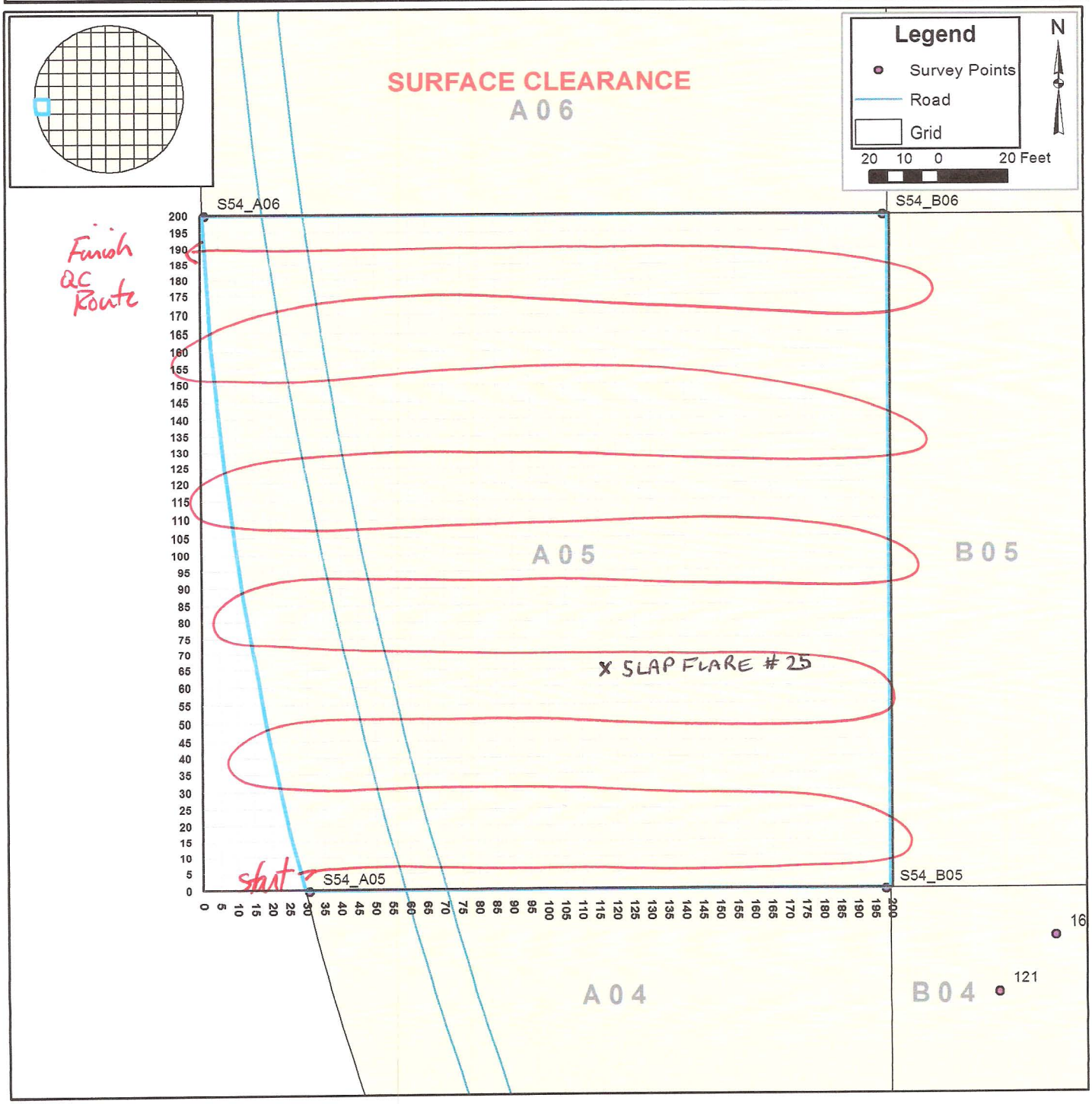
Digs: NA
MEC #: NA
MEC Debris: 30 lbs
Scrap Metal: 35 lbs

Seed:
X: 117'
Y: 66'

	P	F	Date
QC :	☒	☐	9/5/08
QA :	☒	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099730

S54 A-06

Team: 1 2 3

Date Started: 9-8-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-8-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

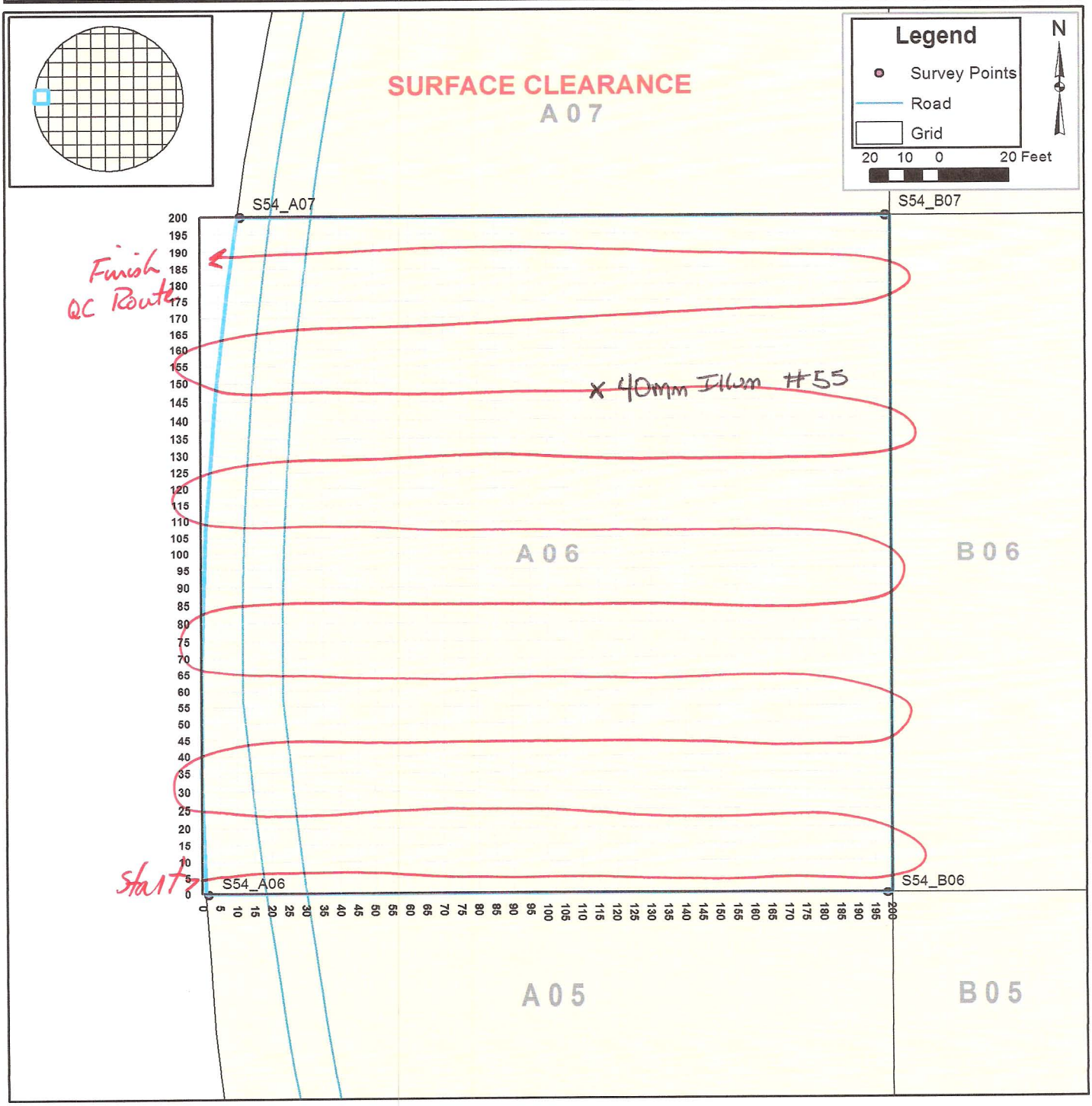
Digs: NA
MEC #: NA
MEC Debris: 20 lbs
Scrap Metal: 20 lbs

Seed:
X: 115'
Y: 148'

	P	F	Date
QC:	☒	☐	9/9/08
QA:	☐	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099731

S54 A-07 Team : (1) 2 3

Date Started: 9-8-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-8-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

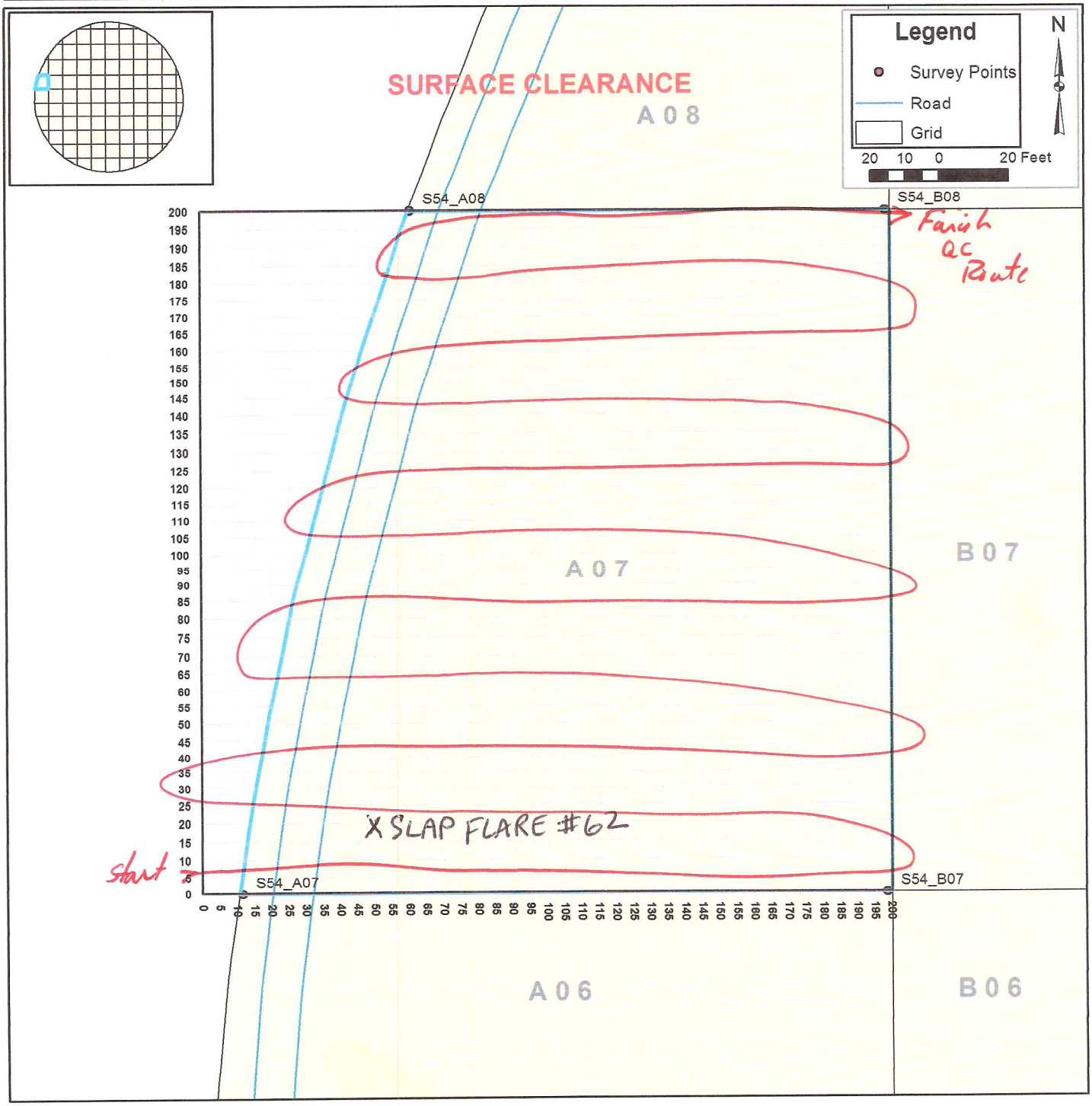
Digs: NA
MEC #: NA
MEC Debris: 10 lbs
Scrap Metal: 5 lbs

Seed:
X: 48'
Y: 19'

	P	F	Date
QC :	☒	☐	9/9/08
QA :	☑	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099732

S54 A-08

Team (1) 2 3

Date Started: 9-8-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-8-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA
MEC #: NA
MEC Debris: 1 lbs
Scrap Metal: 20 lbs

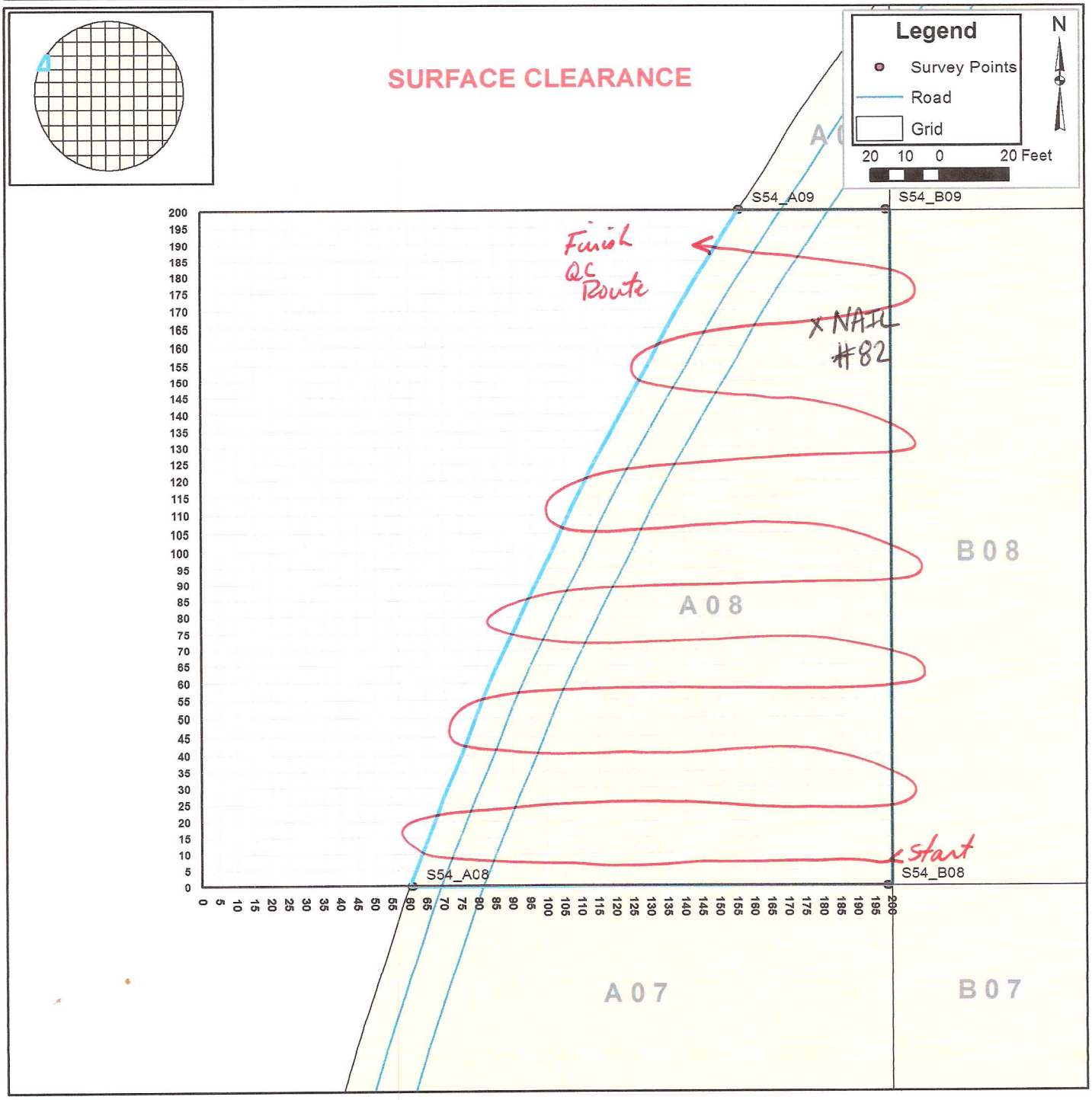
Seed:
X: 177'
Y: 167'

	P	F	Date
QC :	☒	☐	9/9/08
QA :	☒	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE



00099733

S54 C-02 Team : 1 2 3

Date Started: 8 Sep 08

Date Surveyed: N/A

Date Gru:bbed:

Date Finished: 8 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N/A

MEC #: 0

MEC Debris: 5

Scrap Metal: 100

Seed:

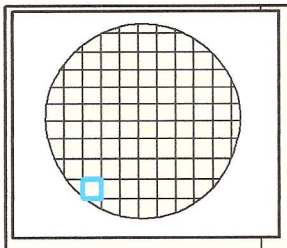
X: 100

Y: 27

	P	F	Date
QC :	☒	☐	9/9/08
QA :	☒	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

C03

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S27_C03 S27_D03

Finish QC Route

B02 C02 D02

Steel Pit #1 #32 slag flare

start

S27_C02 S27_D02

C01 D01

00099734

S54 C-03 Team : 1 2 (3)

Date Started: 8 Sep 08
Date Surveyed: N/A
Date Gru:bbed: _____
Date Finished: 8 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ ~~-Sand~~

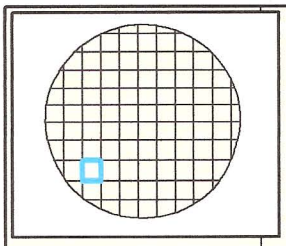
Digs: N/A
MEC #: _____
MEC Debris: _____
Scrap Metal: _____

Seed:
X: 190
Y: 195

	P	F	Date
QC :	☒	☐	9/9/08
QA :	☒	☐	9/9/08

Comments: _____

Qty	Depth(in)	Nomenclature	Filler

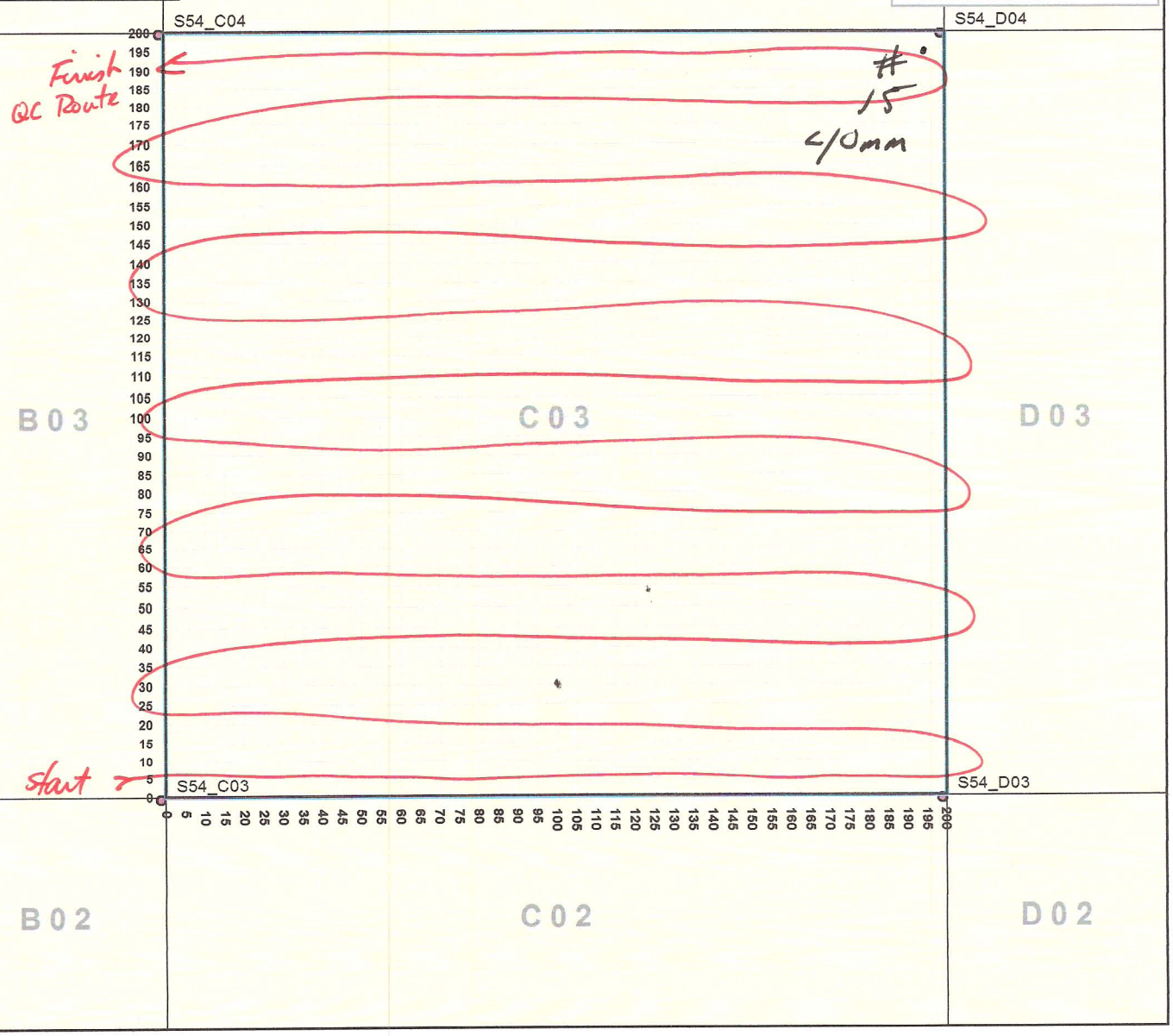


SURFACE CLEARANCE
C 0 4

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099735

S54 C-04 Team : 1 2 (3)

Date Started: 8 Sep 08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 8 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ ~~-Sand~~

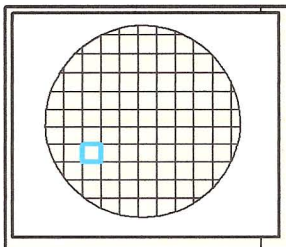
Digs: 8
MEC #: 0
MEC Debris: 10
Scrap Metal: 175

Seed:
X: 125
Y: 20

	P	F	Date
QC :	☒	☐	9/9/08
QA :	☒	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



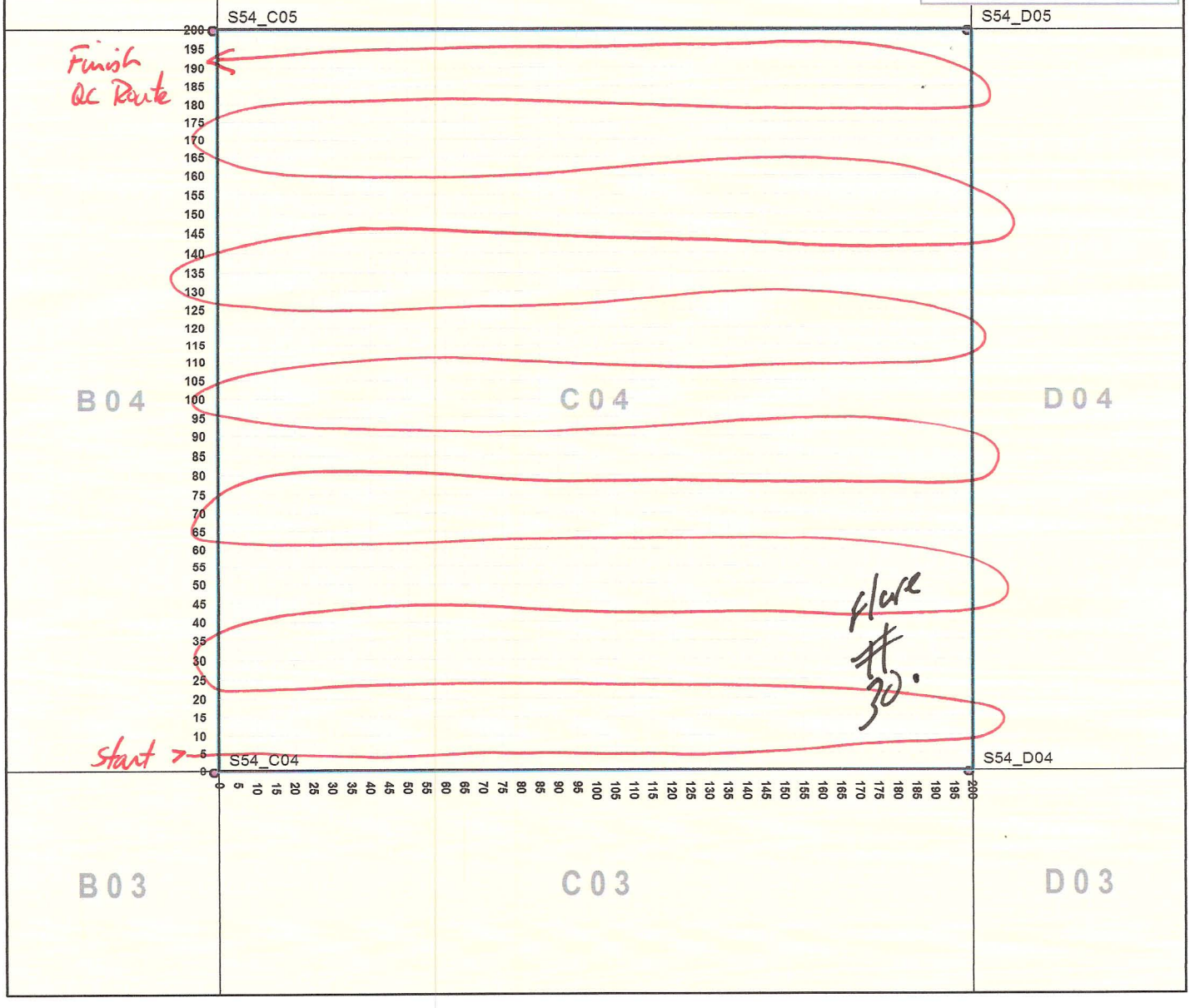
SURFACE CLEARANCE

C 0 5

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099736

S54 C-05 Team :1 2 (3)

Date Started: 8/30/08
Date Surveryed: N/A
Date Gru:bbed:
Date Finished: 8/30/08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

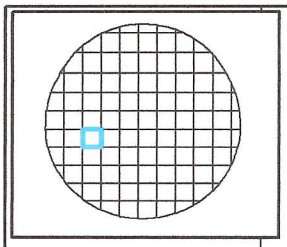
Digs: N/A
MEC #: 0
MEC Debris: 10
Scrap Metal: 5

Seed:
X: 190
Y: 175

	P	F	Date
QC :	☒	☐	9/9/08
QA :	☐	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



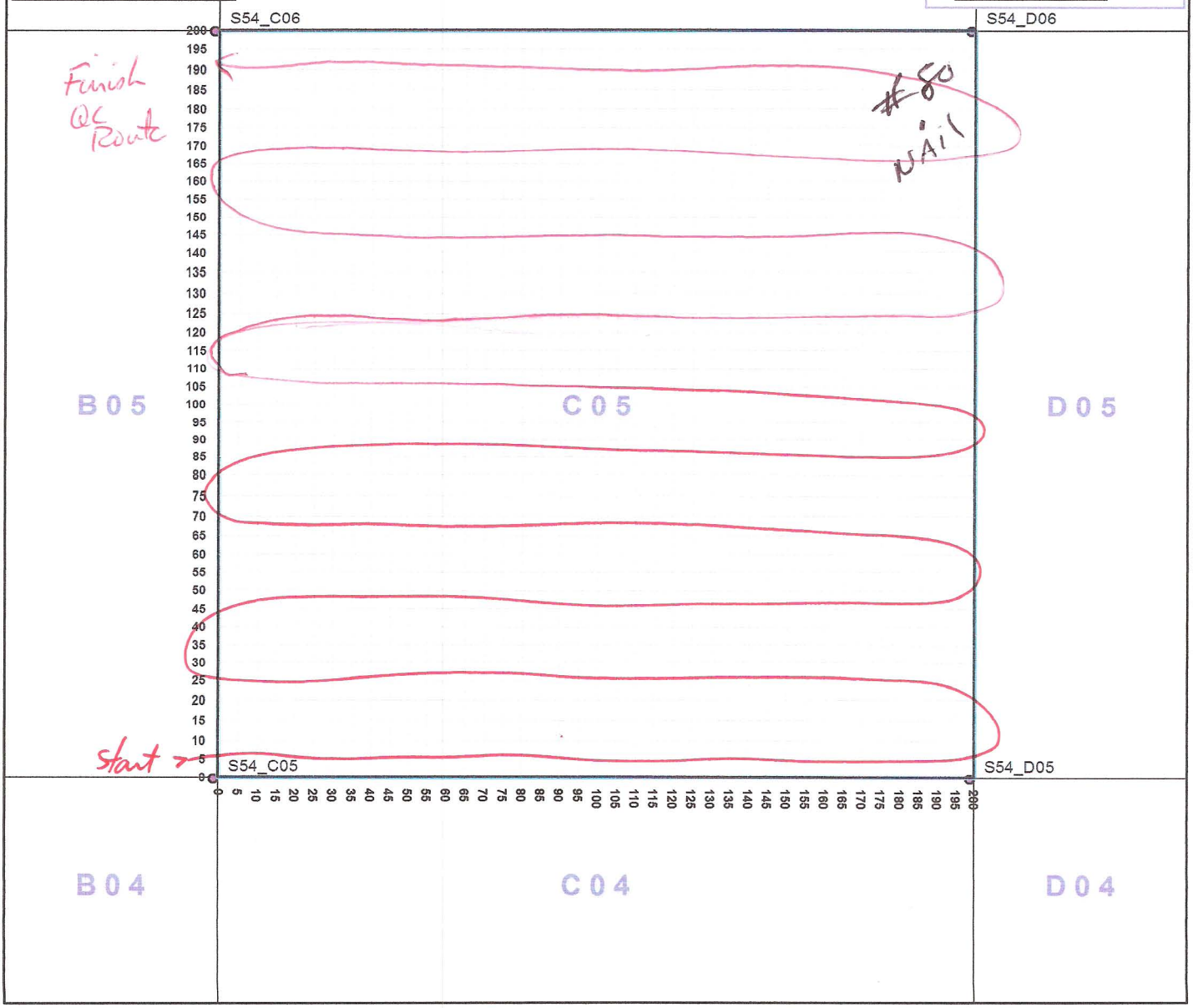
SURFACE CLEARANCE

C 0 6

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099737

S54 C-06 Team : 1 2 3

Date Started: 8 Sep 08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 8 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

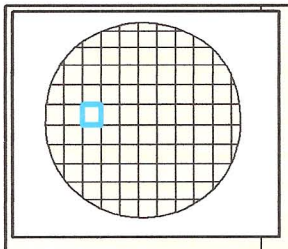
Digs: N/A
MEC #: 0
MEC Debris: 20
Scrap Metal: 5

Seed:
X: 195
Y: 15

	P	F	Date
QC :	☒	☐	9/9/08
QA :	☒	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



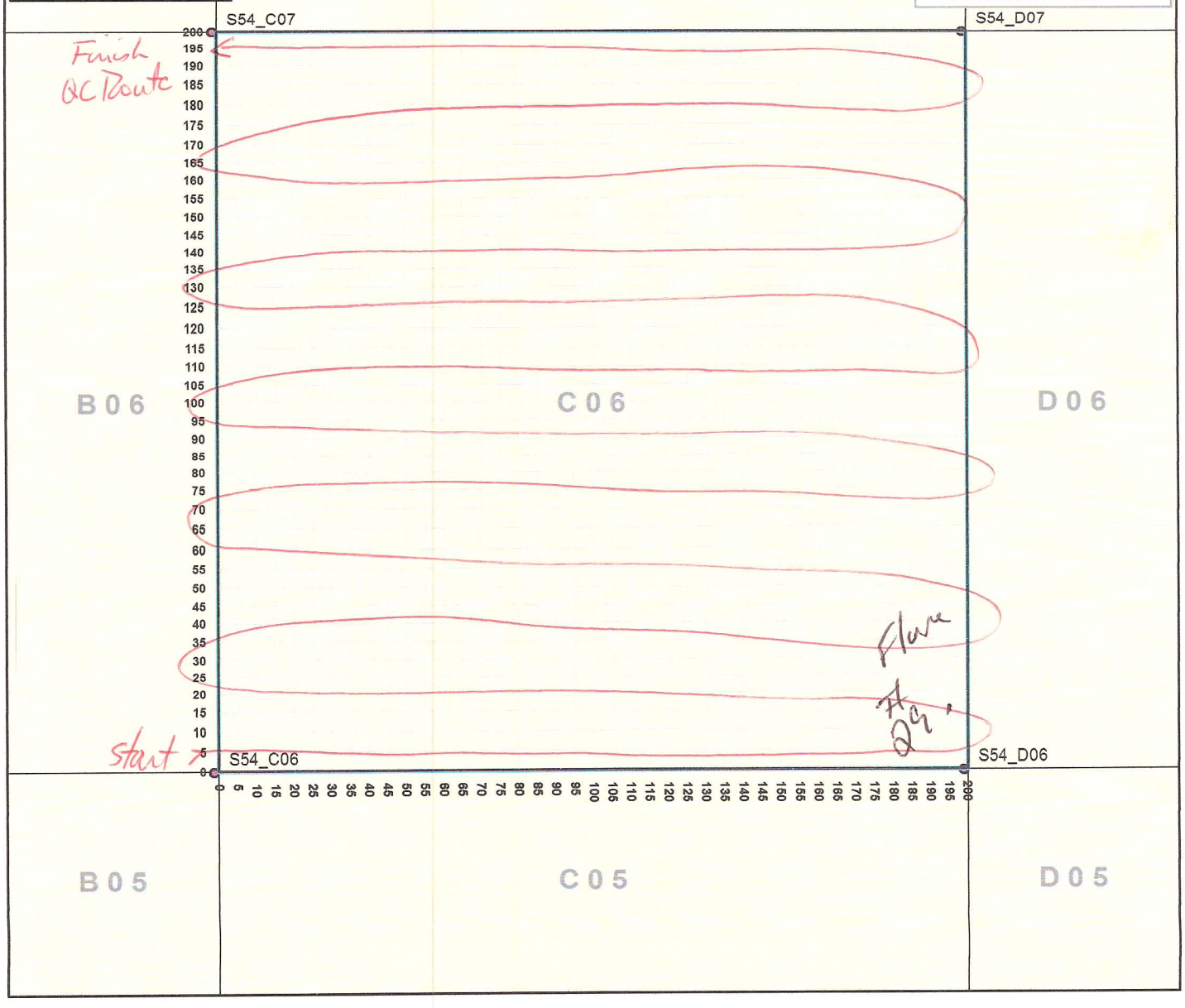
SURFACE CLEARANCE

C07

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099738

S54 C-07

Team : 1 2 (3)

Date Started: 8 Sep 08

Date Surveyed: N/A

Date Gru:bbed: _____

Date Finished: 8 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N/A

MEC #: Ø

MEC Debris: 5

Scrap Metal: 5

Seed:

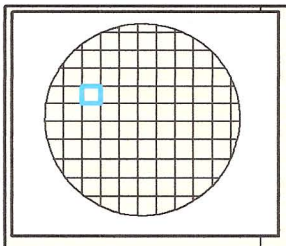
X: 198

Y: 198

	P	F	Date
QC :	☒	☐	9/9/08
QA :	☒	☐	9/9/08

Comments: _____

Qty	Depth(in)	Nomenclature	Filler



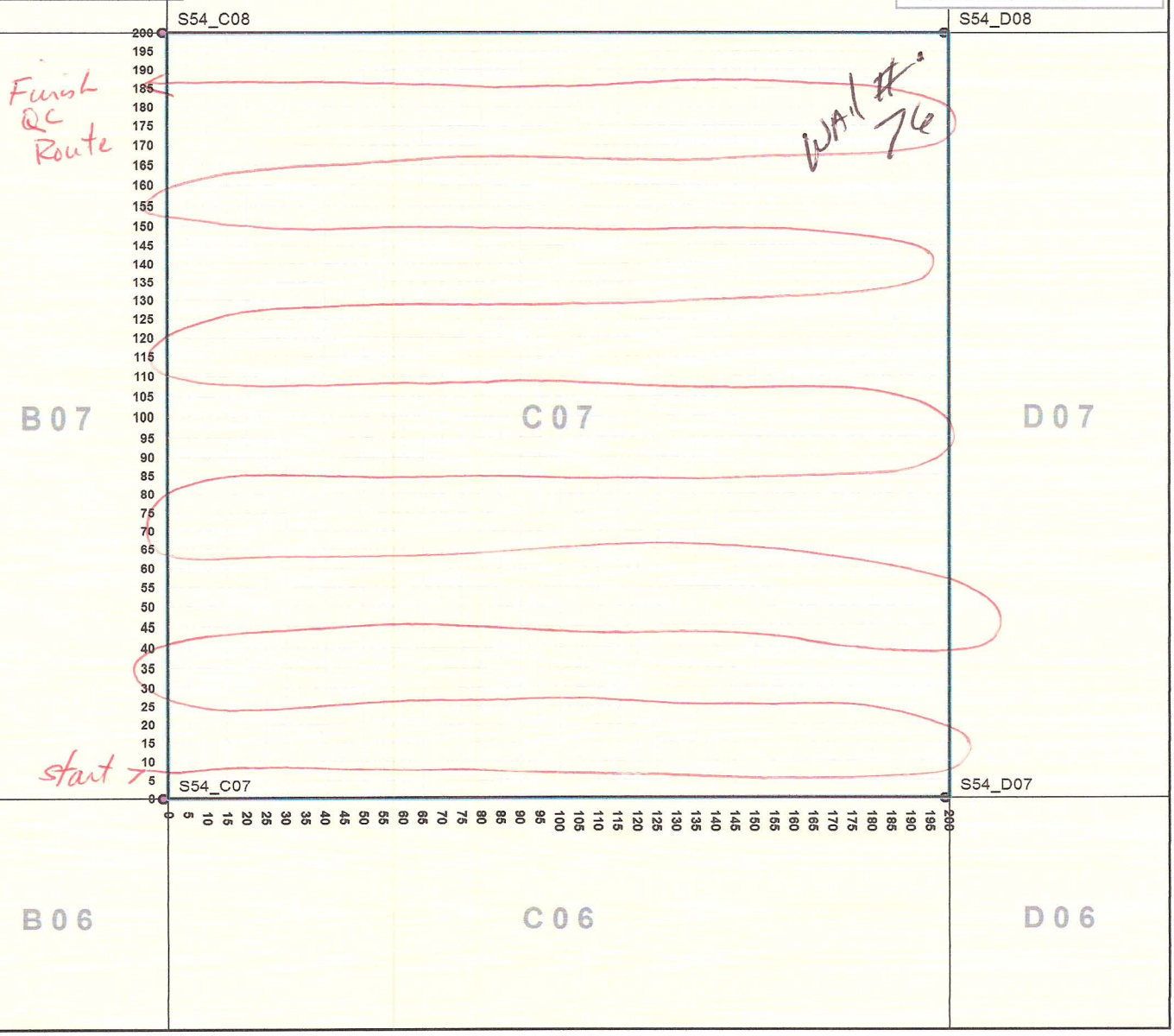
SURFACE CLEARANCE

C 0 8

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099739

S54 C-10 Team (1) 2 3

Date Started: 9-8-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-8-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

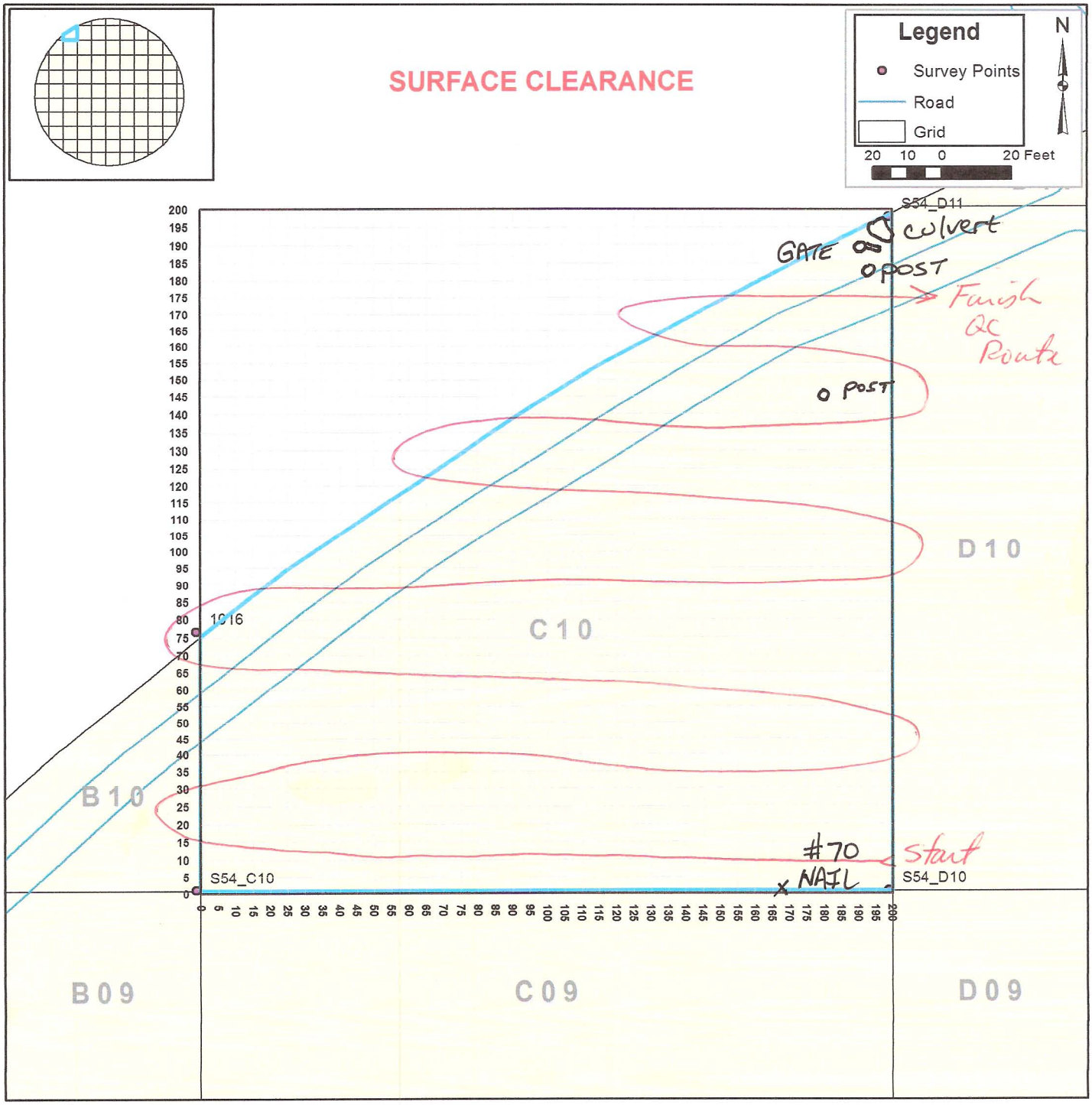
Digs: NA
MEC #: NA
MEC Debris: 25 lbs
Scrap Metal: 100 lbs

Seed:
X: 164'
Y: 1'

	P	F	Date
QC :	X	☐	9/8/08
QA :	☒	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099740

S54 C-08 Team: 1 2 (2)

Date Started: 9 Sep 08
Date Surveyed: N/A
Date Gru:bbed: NA
Date Finished: 9 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

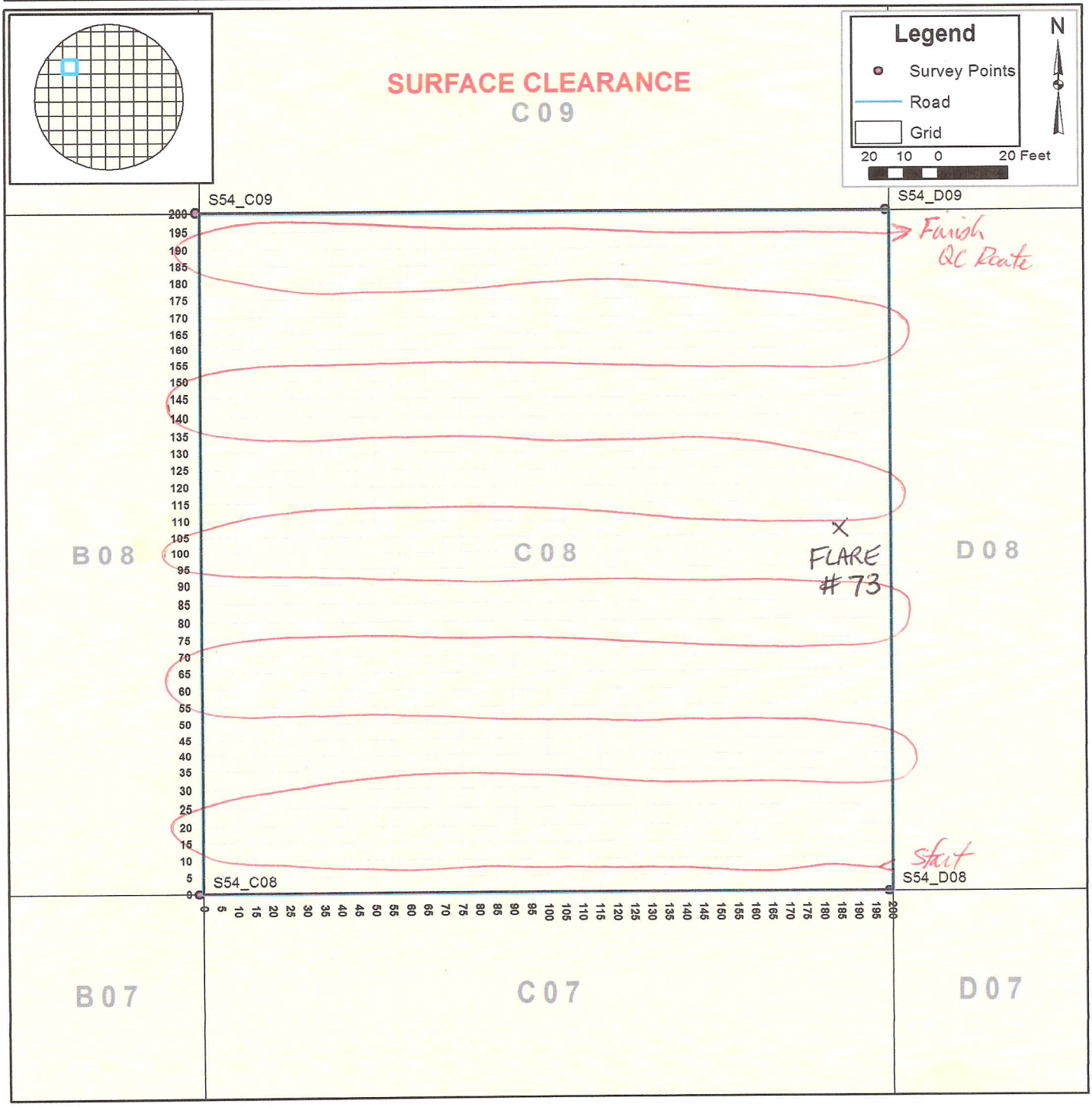
Digs: N/A
MEC #: NA
MEC Debris: 30 lbs
Scrap Metal: 40 lbs

Seed:
X: 185'
Y: 107'

	P	F	Date
QC:	☒	☐	9/10/08
QA:	☒	☐	9/10/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099741

S54 C-09

Team (1) 2 3

Date Started: 9-8-2008
Date Surveryed: NA
Date Gru:bbed: NA
Date Finished: 9-9-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

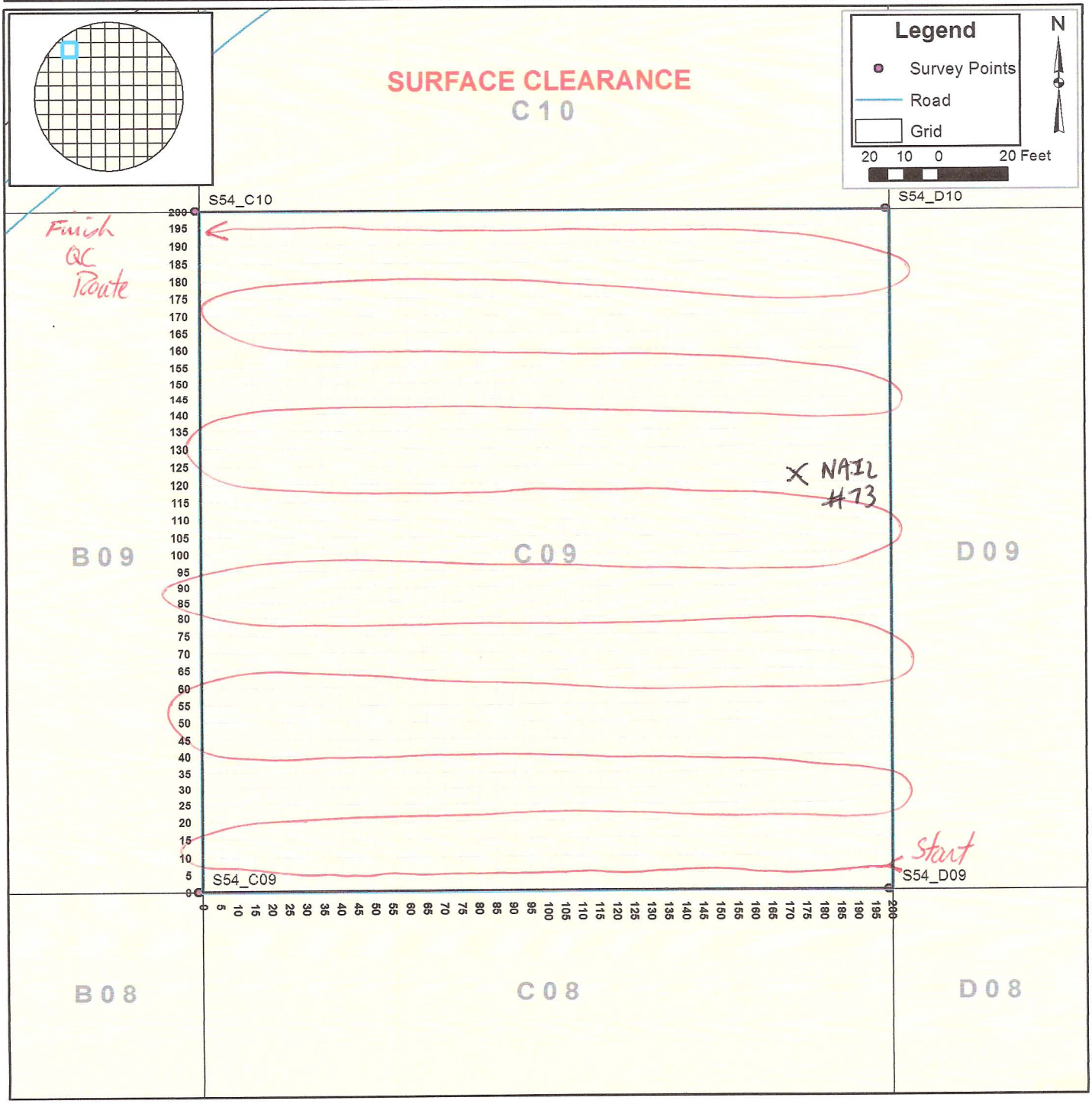
Digs: NA
MEC #: NA
MEC Debris: 25 lbs
Scrap Metal: 10 lbs

Seed:
X: 173'
Y: 123'

	P	F	Date
QC :	☒	☐	9/10/08
QA :	☒	☐	9/10/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099742

S54 D-07 Team : 1 2 3

Date Started: 9 Sep 08
Date Surveyed: N/A
Date Grubbed: _____
Date Finished: 9 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ ~~-Sand~~

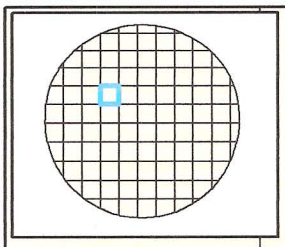
Digs: N/A
MEC #: _____
MEC Debris: ~~350~~
Scrap Metal: 50

Seed:
X: 20
Y: ~~75~~

	P	F	Date
QC :	☒	☐	9/10/08
QA :	☒	☐	9/10/08

Comments: _____

Qty	Depth(in)	Nomenclature	Filler

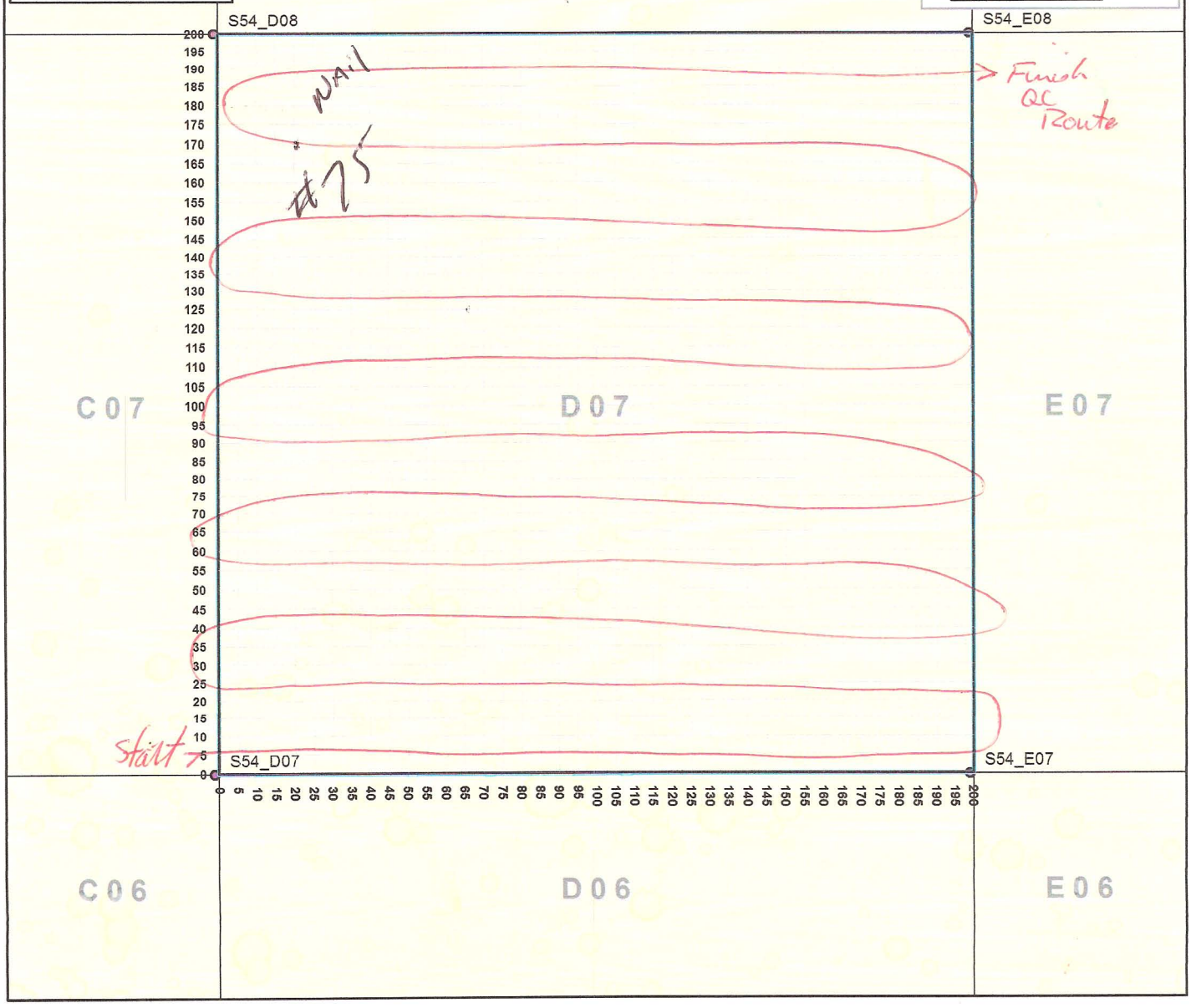


SURFACE CLEARANCE
D08

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099743

S54 D-08

Team : (1) 2 3

Date Started: 9-9-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-9-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

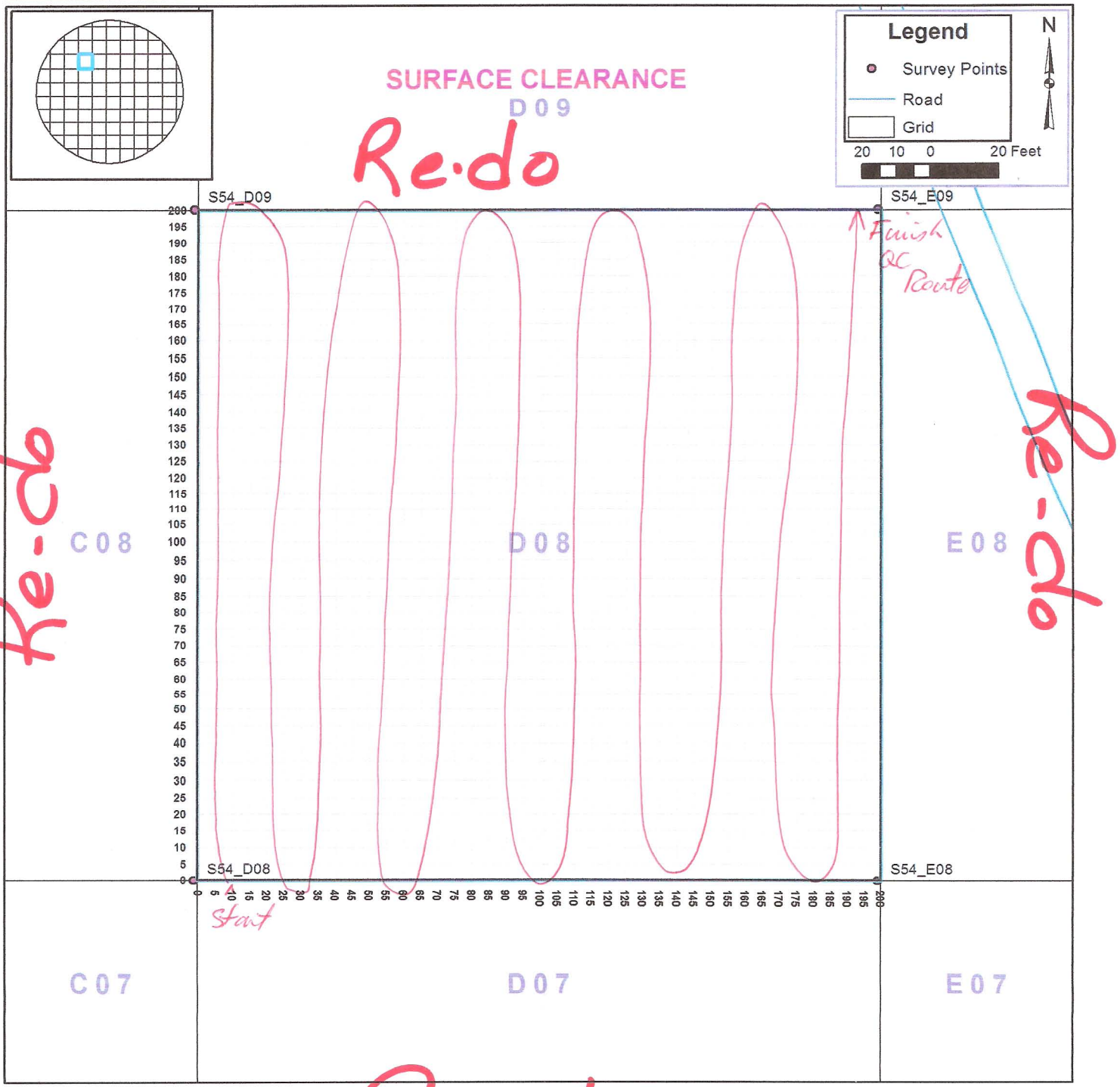
Digs: NA
MEC #: NA
MEC Debris: 130 lbs
Scrap Metal: 10 lbs

Seed:
X: NA
Y: NA

	P	F	Date
QC :	☒	☐	9/10/08
QA :	☒	☐	9/10/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099744

S54 D-06

Team :1 2 (3)

Date Started: 9 Sep 08

Date Surveyed: N/A

Date Gru:bbed:

Date Finished: 18 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☐ -Sand

Digs: N/A

MEC #: 0

MEC Debris: 750

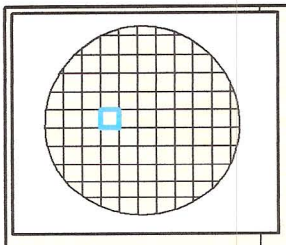
Scrap Metal: 5

Seed:
X: 30
Y: 20

	P	F	Date
QC :	☒	☐	9/11/08
QA :	☒	☐	9/11/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



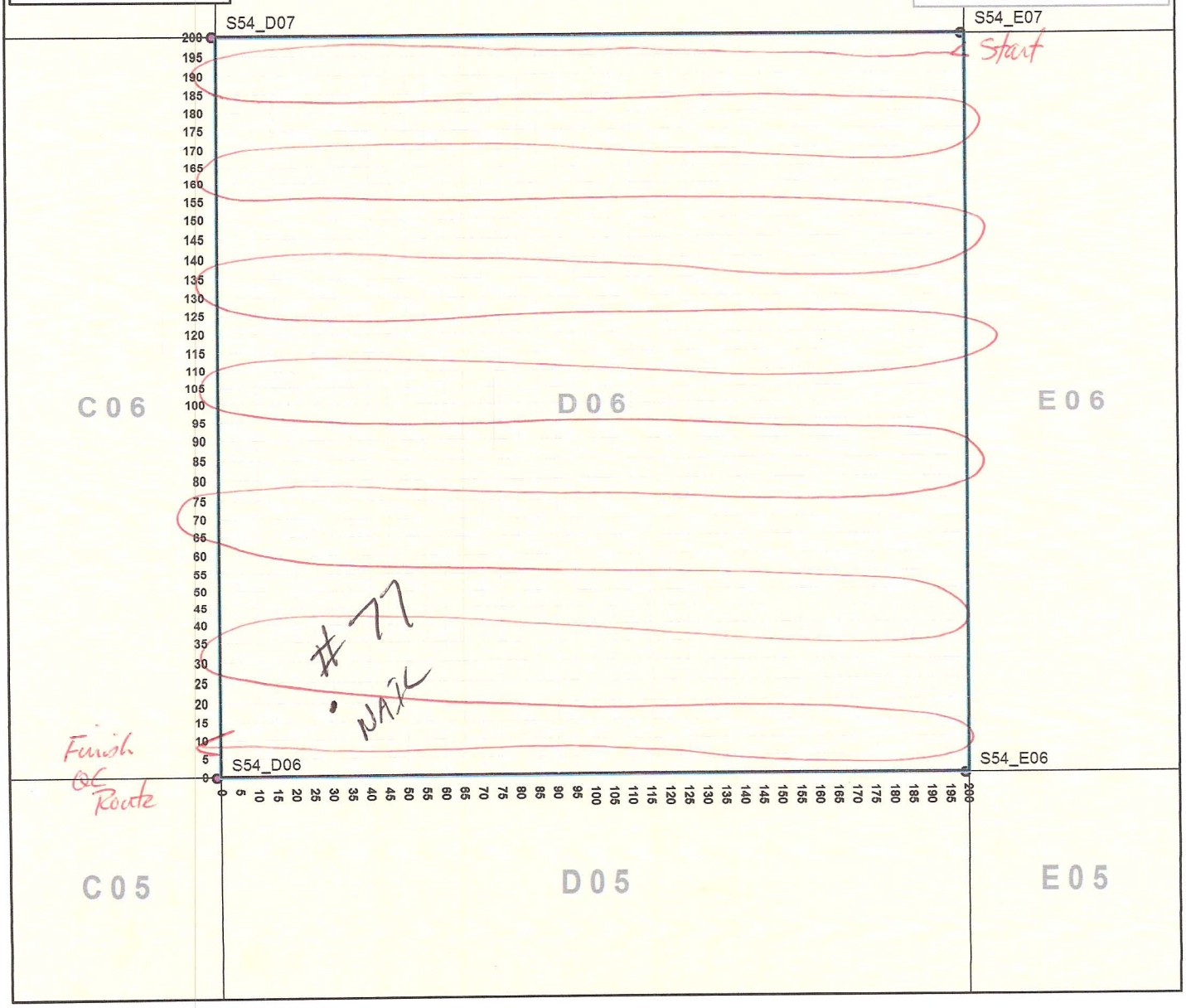
SURFACE CLEARANCE

D 07

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099745

S54 G-09

Team (1) 2 3

Date Started: 9-9-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-10-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

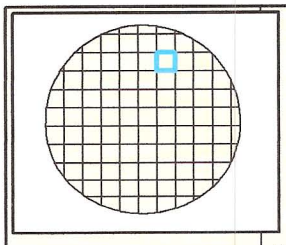
Digs: NA
MEC #: NA
MEC Debris: 380 lbs
Scrap Metal: 40 lbs

Seed:
X: 62'
Y: 180'

	P	F	Date
QC :	☒	☐	9/11/08
QA :	☒	☐	9/11/08

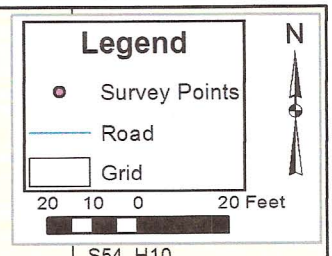
Comments:

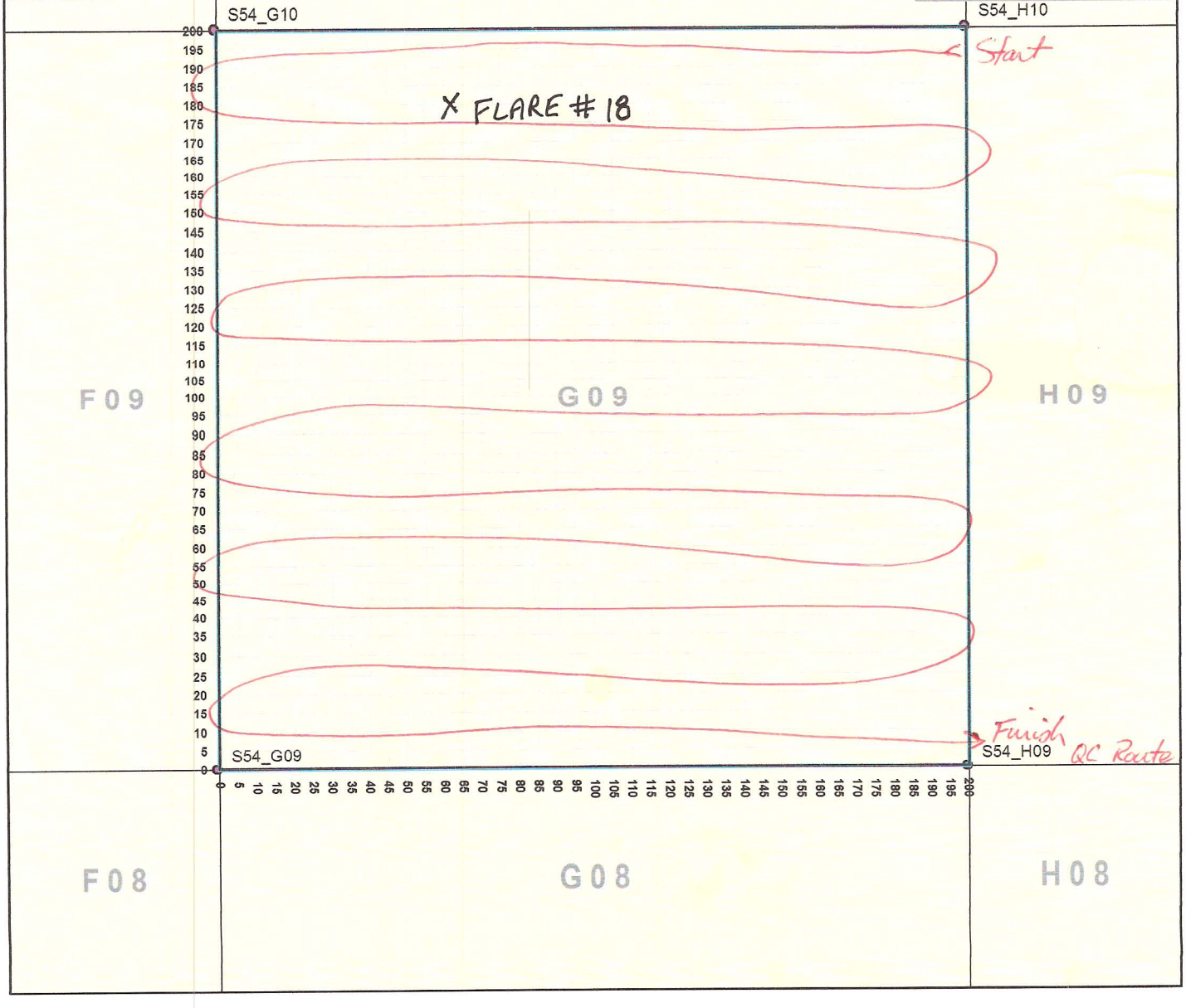
Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

G10





00099746

S54 F-05

Team (1) 2 3

Date Started: 9-15-2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-15-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 75 lbs

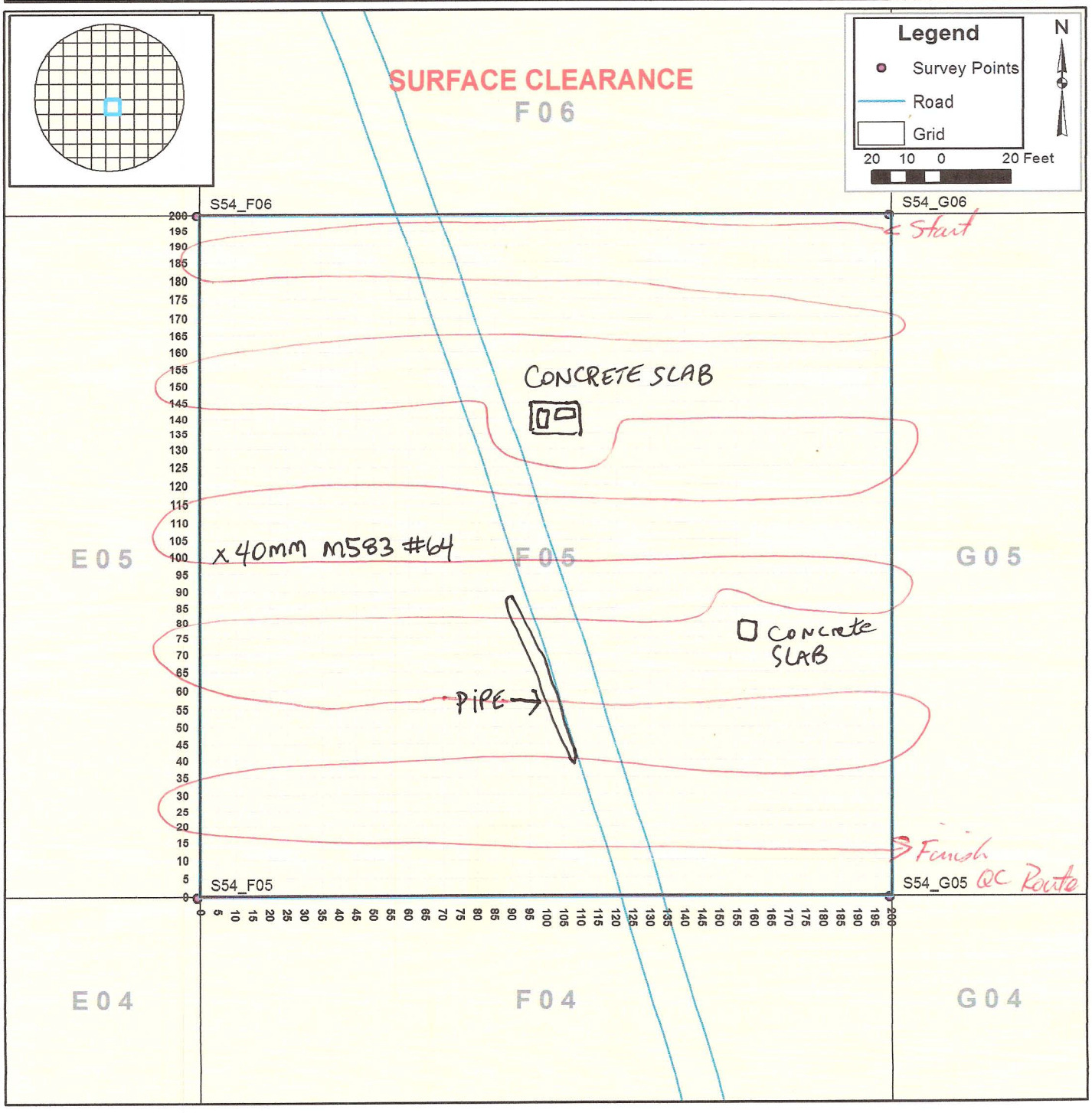
Scrap Metal: 200 lbs

Seed:
X: 6'
Y: 10'

	P	F	Date
QC :	☒	☐	9/16/08
QA :	☒	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099747

S54 F-06

Team (1) 2 3

Date Started: 9-15-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-15-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 140 lbs

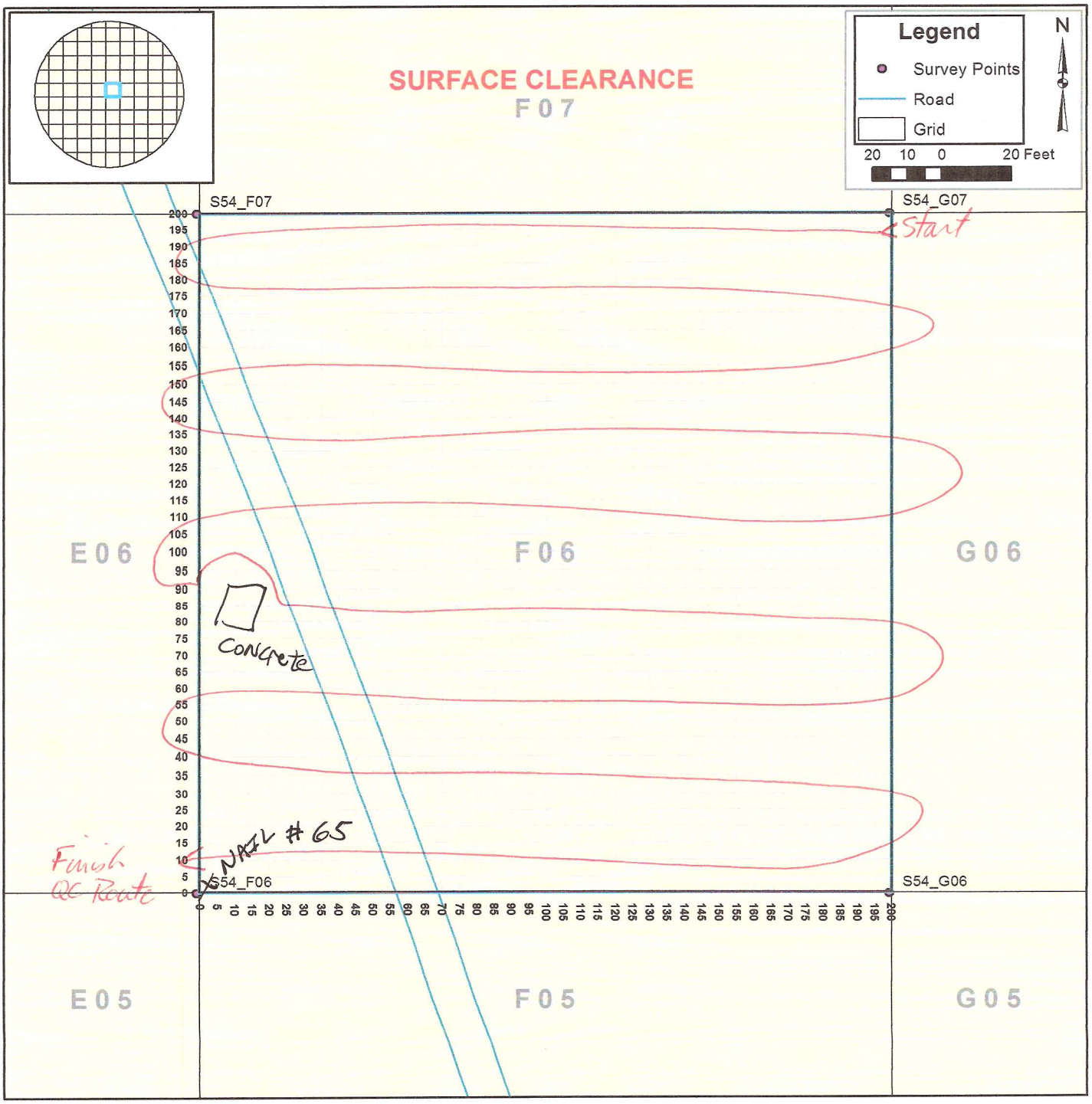
Scrap Metal: 200 lbs

Seed:
X: 1-
Y: 1-

	P	F	Date
QC :	☒	☐	9/16/08
QA :	☐	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099748

S54 F-07

Team : (1) 2 3

Date Started: 9-11-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-15-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 260 lbs

Scrap Metal: 150 lbs

Seed:

X: 160'

Y: 100'

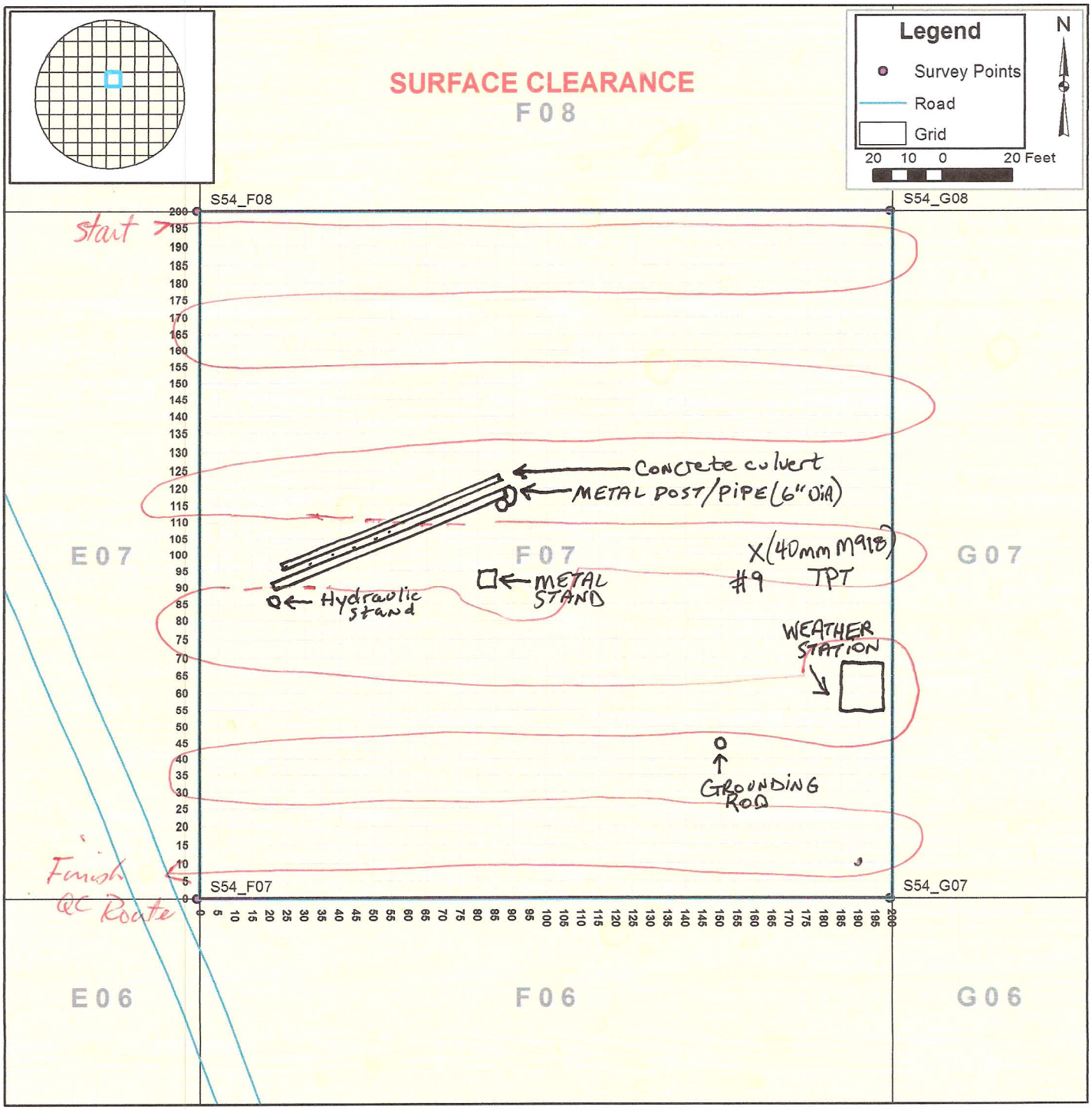
	P	F	Date
QC :	☒	☐	9/16/08
QA :	☒	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE

F 0 8



00099749

S54 E-06

Team : 1 2 (3)

Date Started: 27AUG08

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: ~~27AUG08~~ 15SEP08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 80 lbs

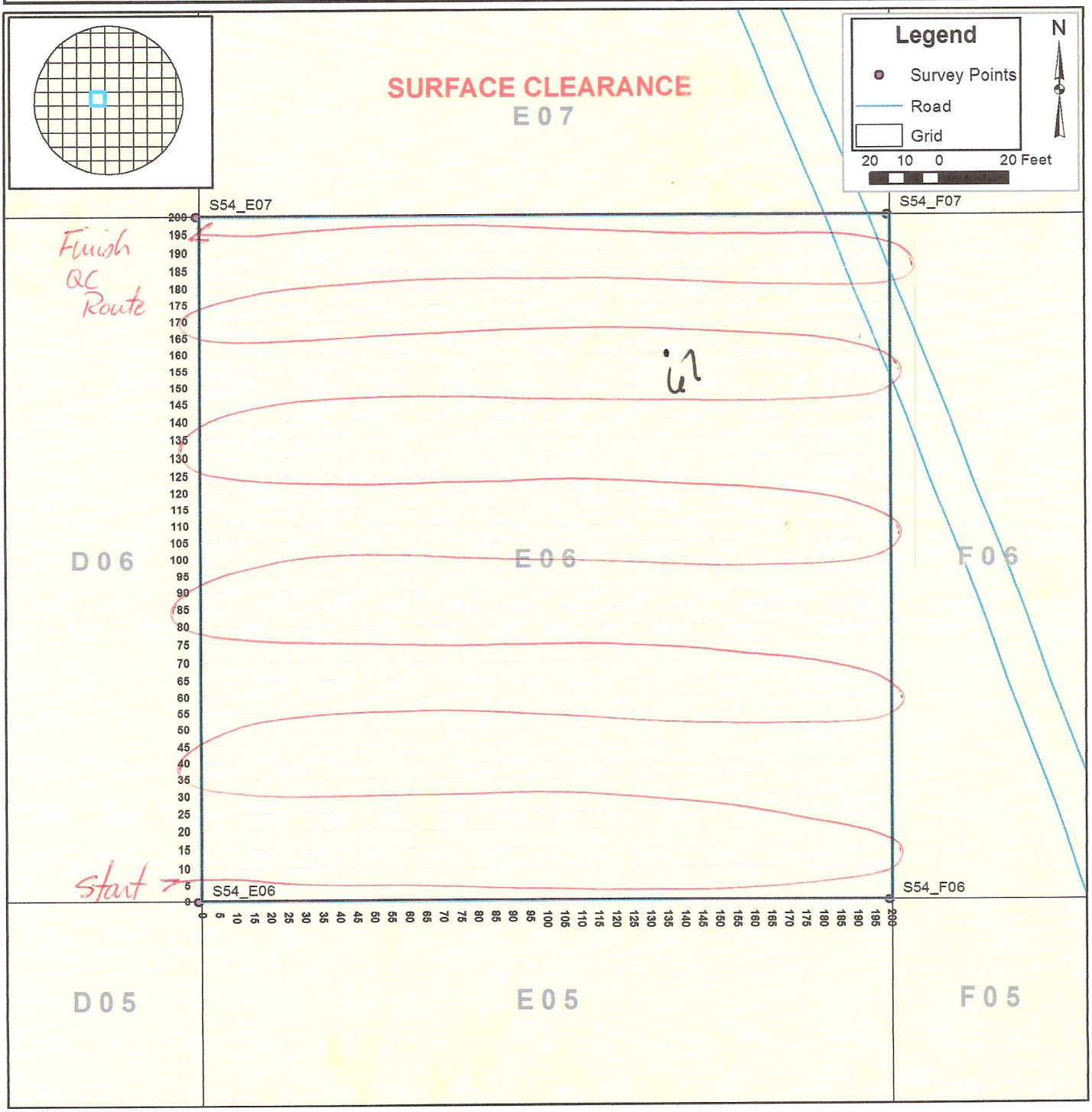
Scrap Metal: 170 lbs

Seed:
X: 135'
Y: 160'

	P	F	Date
QC :	☒	☐	9/16/08
QA :	☒	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



Redo

00099750

S54 G-08

Team: 1 2 8

Date Started: 9-10-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-11-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 800 lbs

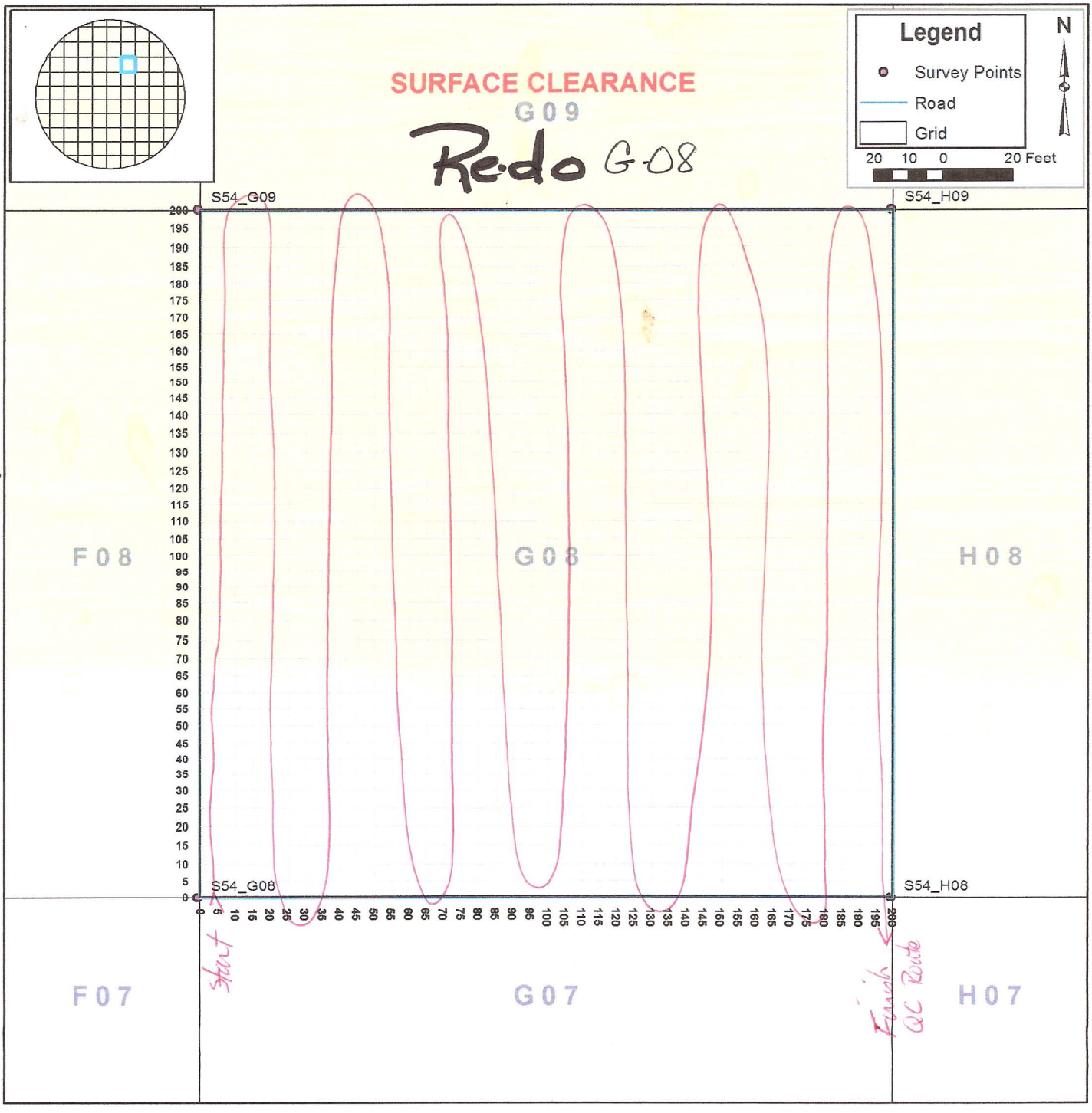
Scrap Metal: 20 lbs

Seed:
X: NA
Y: NA

	P	F	Date
QC :	☒	☐	9/15/08
QA :	☒	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



Redo

Redo

Re-do

00099751

S27 C-01 Team : 1 (2) 3

Date Started: 9-11-08
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-11-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

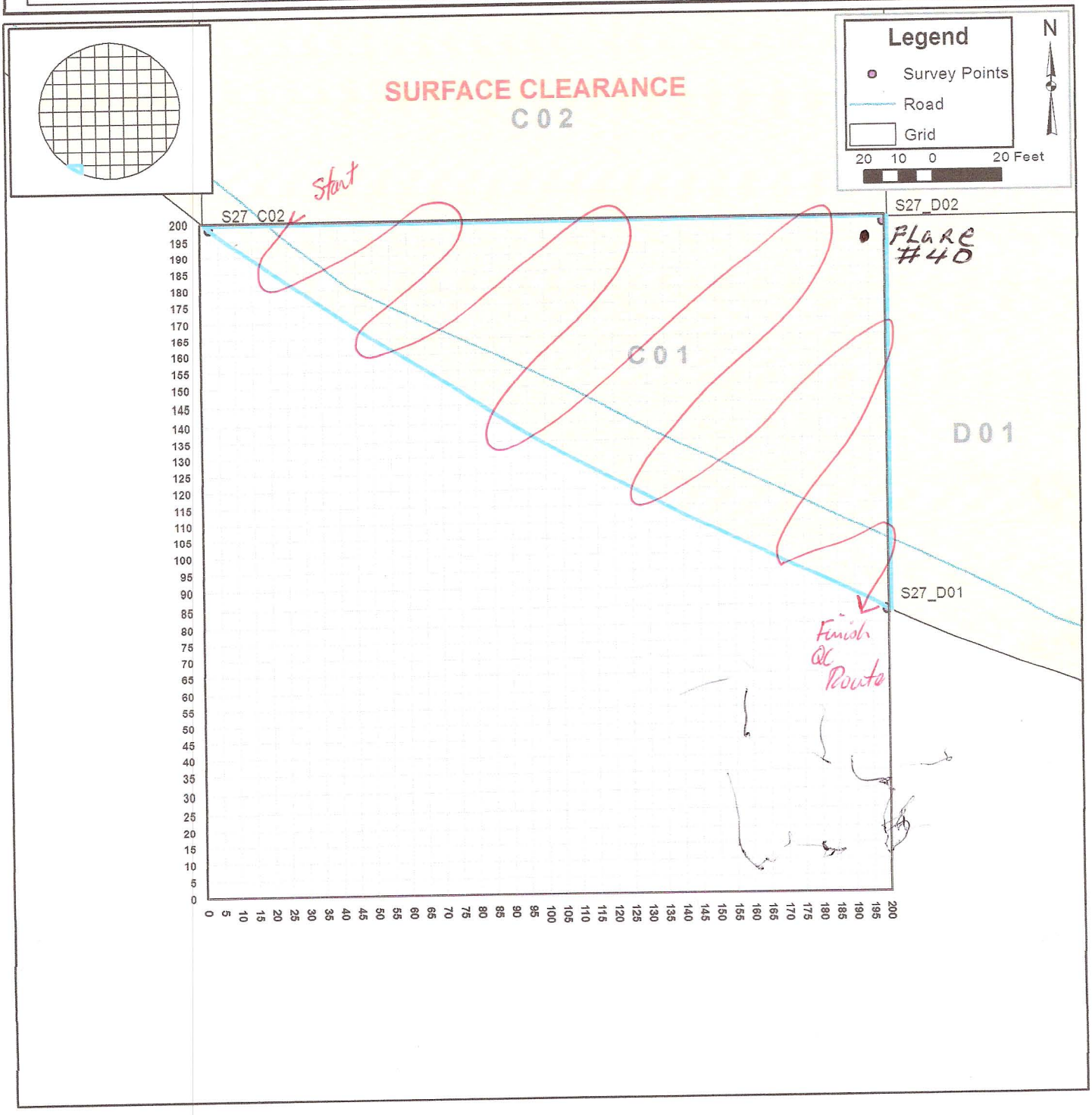
Digs: NA
MEC #: NA
MEC Debris: 5
Scrap Metal: —

Seed:
X: 19.5
Y: 19.5

	P	F	Date
QC :	☒	☐	9/16/08
QA :	☒	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099752

S27 D-01 Team : 1 (2) 3

Date Started: 9-11-08
Date Surveyed: N/A
Date Grubbed: N/A
Date Finished: 9-11-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

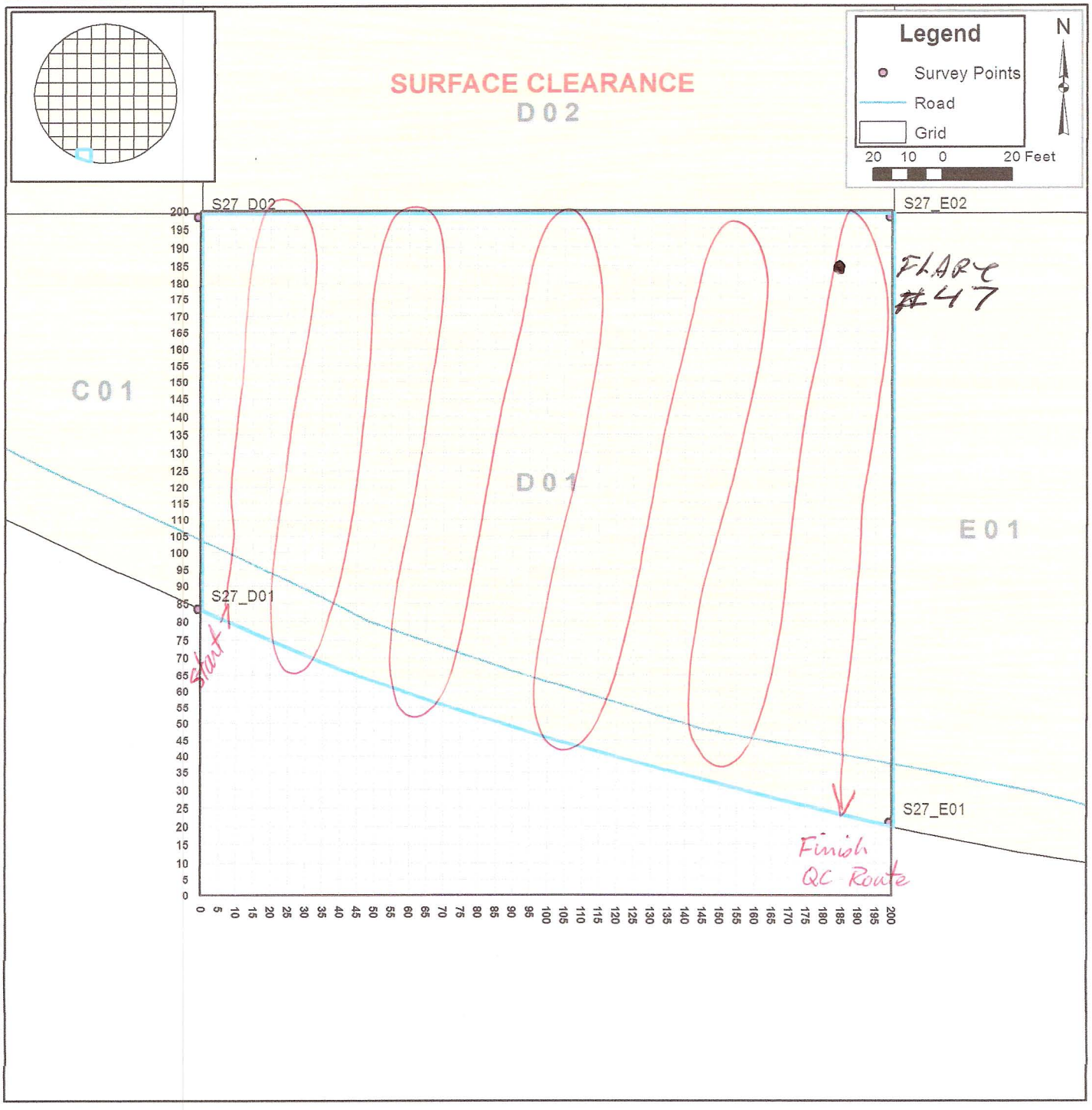
Digs: NA
MEC #: NA
MEC Debris: 206
Scrap Metal: —

Seed:
X: 185
Y: 185

	P	F	Date
QC :	☒	☐	9/16/08
QA :	☒	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099753

S27 E-01

Team : 1 2 3

Date Started: 9-11-08

Date Surveyed: N A

Date Gru:bbed: N A

Date Finished: 9-11-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N A 20lbs

MEC #: N A

MEC Debris: ~~20lbs~~

Scrap Metal: —

Seed:

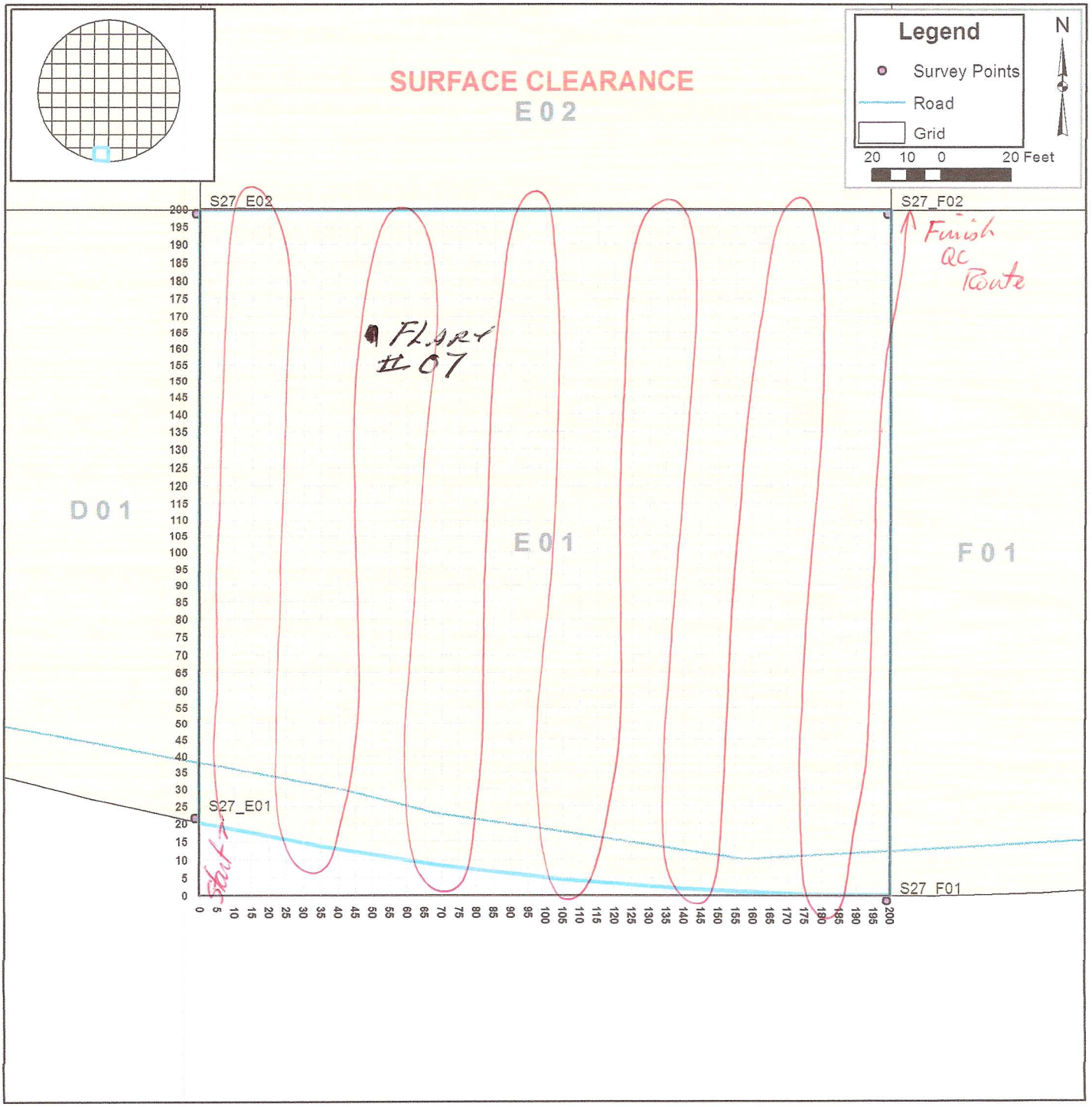
X: 30

Y: 165

	P	F	Date
QC :	☒	☐	9/16/08
QA :	☒	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099754

S27 F-01

Team : 1 (2) 3

Date Started: 9-11-08

Date Surveyed: N/A

Date Grubbed: N/A

Date Finished: 9-11-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: N/A

MEC #: N/A

MEC Debris: GOOD

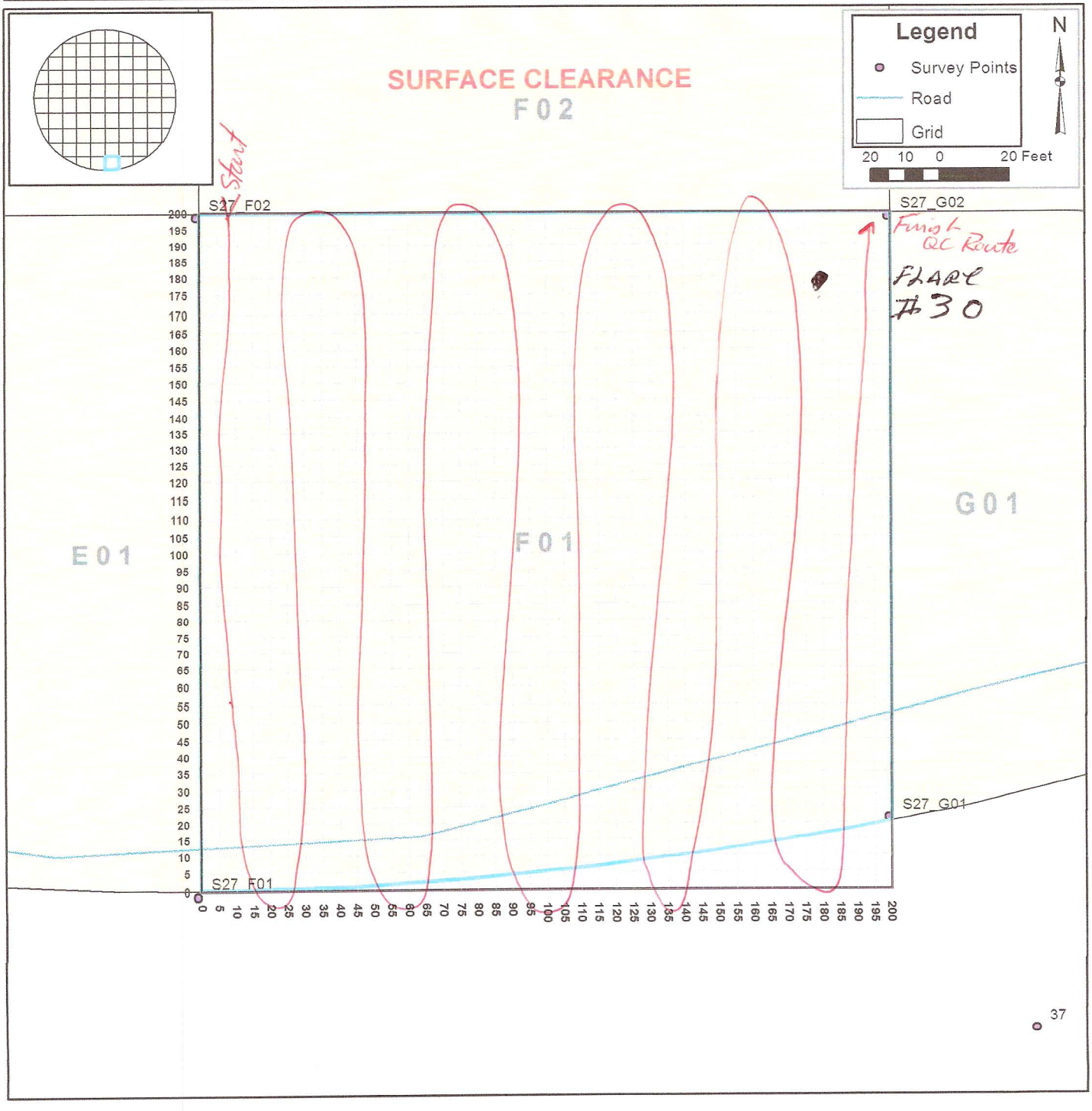
Scrap Metal: —

Seed:
X: 180
Y: 180

	P	F	Date
QC :	☒	☐	9/16/08
QA :	☒	☐	9/16/08

Comments: —

Qty	Depth(in)	Nomenclature	Filler



00099755

S54 E-05 Team: 1 2 3

Date Started: 9-16-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-16-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

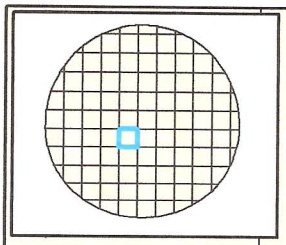
Digs: NA
MEC #: NA
MEC Debris: 220165
Scrap Metal: 30165

Seed:
X: 145
Y: 50

	P	F	Date
QC :	☒	☐	9/17/08
QA :	☒	☐	9/17/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
2	0"	FLARE CANDLE	illuminant



SURFACE CLEARANCE

E06

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S54_E06 S54_F06 S54_E05 S54_F05

Start

X FLARE CANDLE

X FLARE CANDLE

X 63

Finish QC Route

D05 E05 F05

D04 E04 F04

00099756

S54 E-07 Team (1) 2 3

Date Started: 9-16-2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-16-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 245 lbs

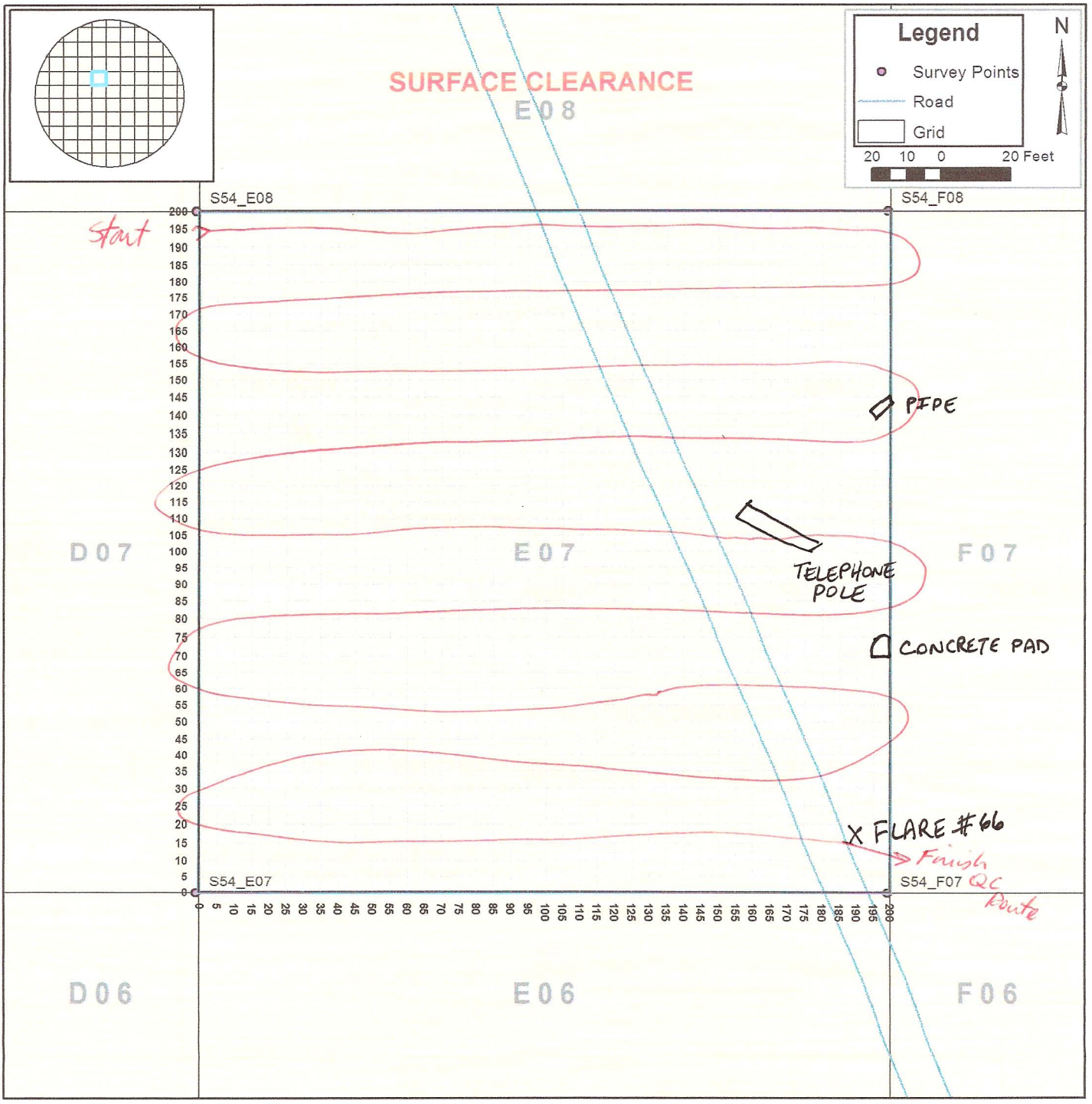
Scrap Metal: 120 lbs

Seed:
X: 191'
Y: 17'

	P	F	Date
QC :	☒	☐	9/17/08
QA :	☒	☐	9/17/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099757

S27 G-01 Team : 1 (2) 3

Date Started: 9-16-08
Date Surveyed: N A
Date Grubbed: N A
Date Finished: 9-16-08

Soil:
☐ -Clay
☐ -Limestone
☐ -Loam
☒ -Sand

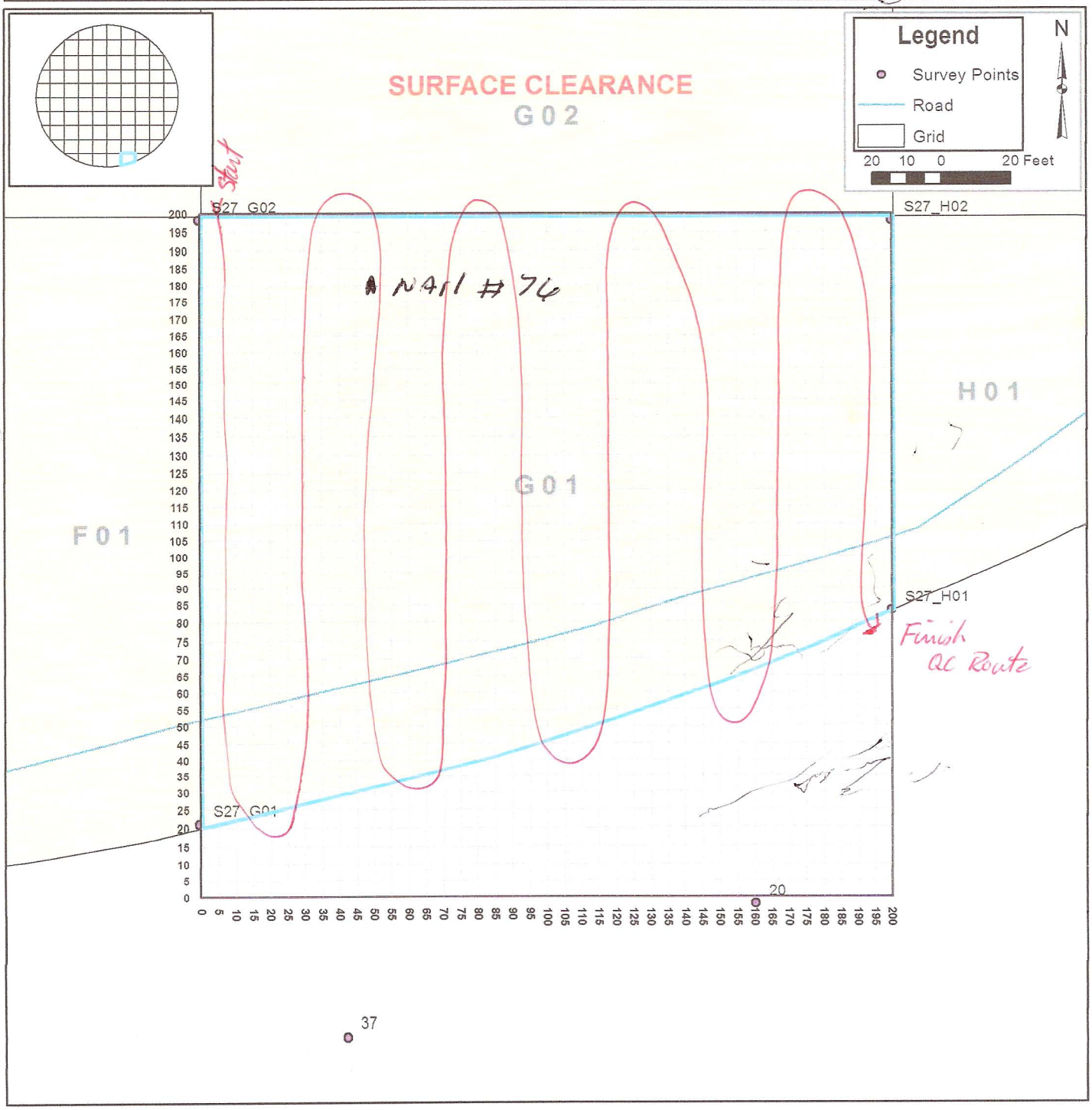
Digs: N A
MEC #: N A
MEC Debris: 2006
Scrap Metal: N a

Seed:
X: 49
Y: 180

	P	F	Date
QC :	☒	☐	9/17/08
QA :	☒	☐	9/17/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099758

S27 G-02

Team : 1 2 3

Date Started: 9-16-08
Date Surveyed: N A
Date Gru:bbed: N A
Date Finished: 9-16-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

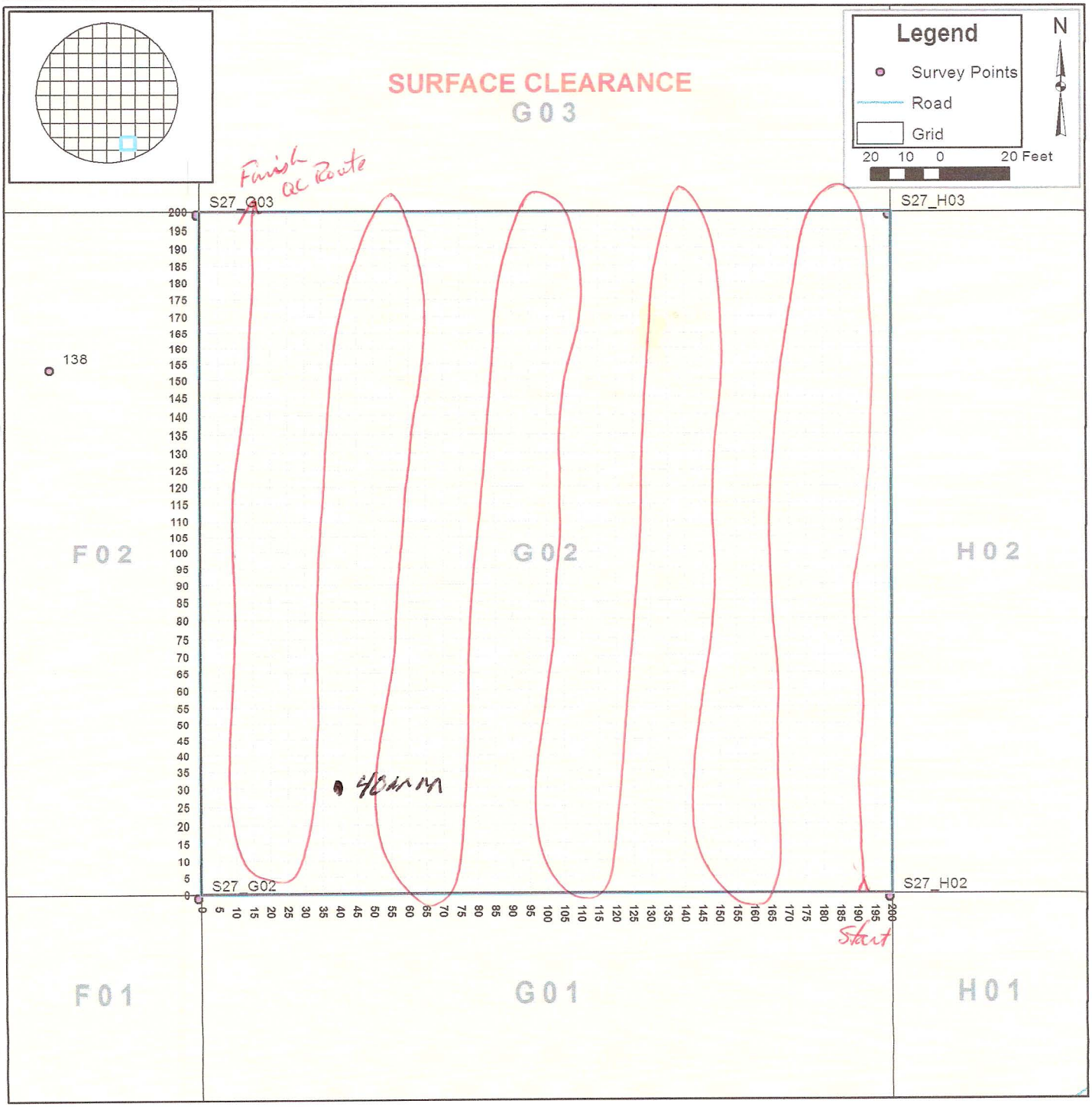
Digs: N A
MEC #:
MEC Debris: 150
Scrap Metal: —

Seed:
X: 40
Y: 30

	P	F	Date
QC :	X	☐	9/17/08
QA :	☒	☐	9/17/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	X195 Y195	



00099759

S27 H-01 Team : 1 (2) 3

Date Started: 9-16-08
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-16-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

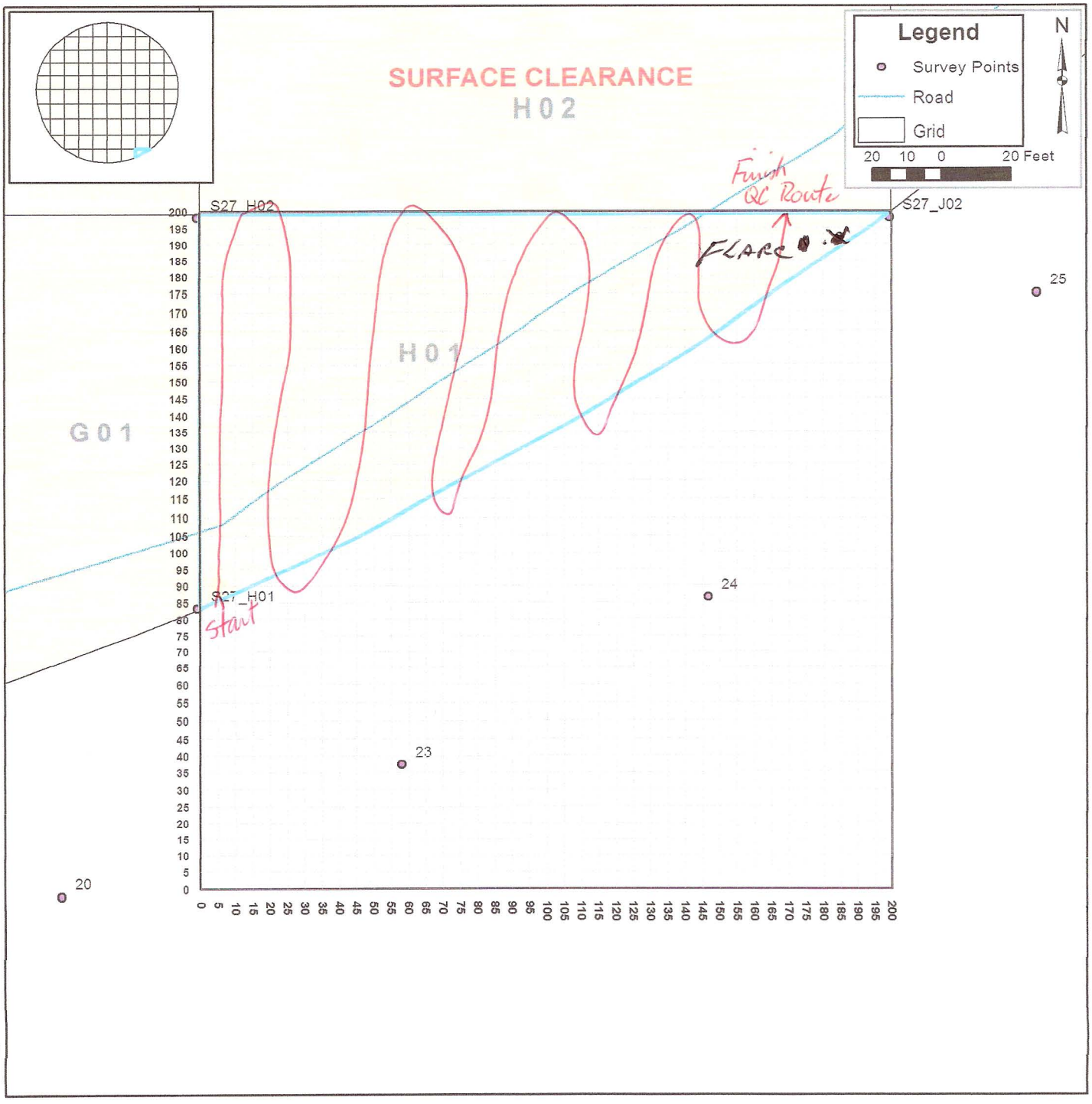
Digs: NA
MEC #:
MEC Debris: 204
Scrap Metal: —

Seed:
X: 185
Y: 175

	P	F	Date
QC :	☒	☐	9/17/08
QA :	☒	☐	9/17/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099760

S27 H-02 Team : 1 (2) 3

Date Started: 9-14
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-14

Soil:
☐-Clay
☐-Limestone
☐-Loam
☐-Sand

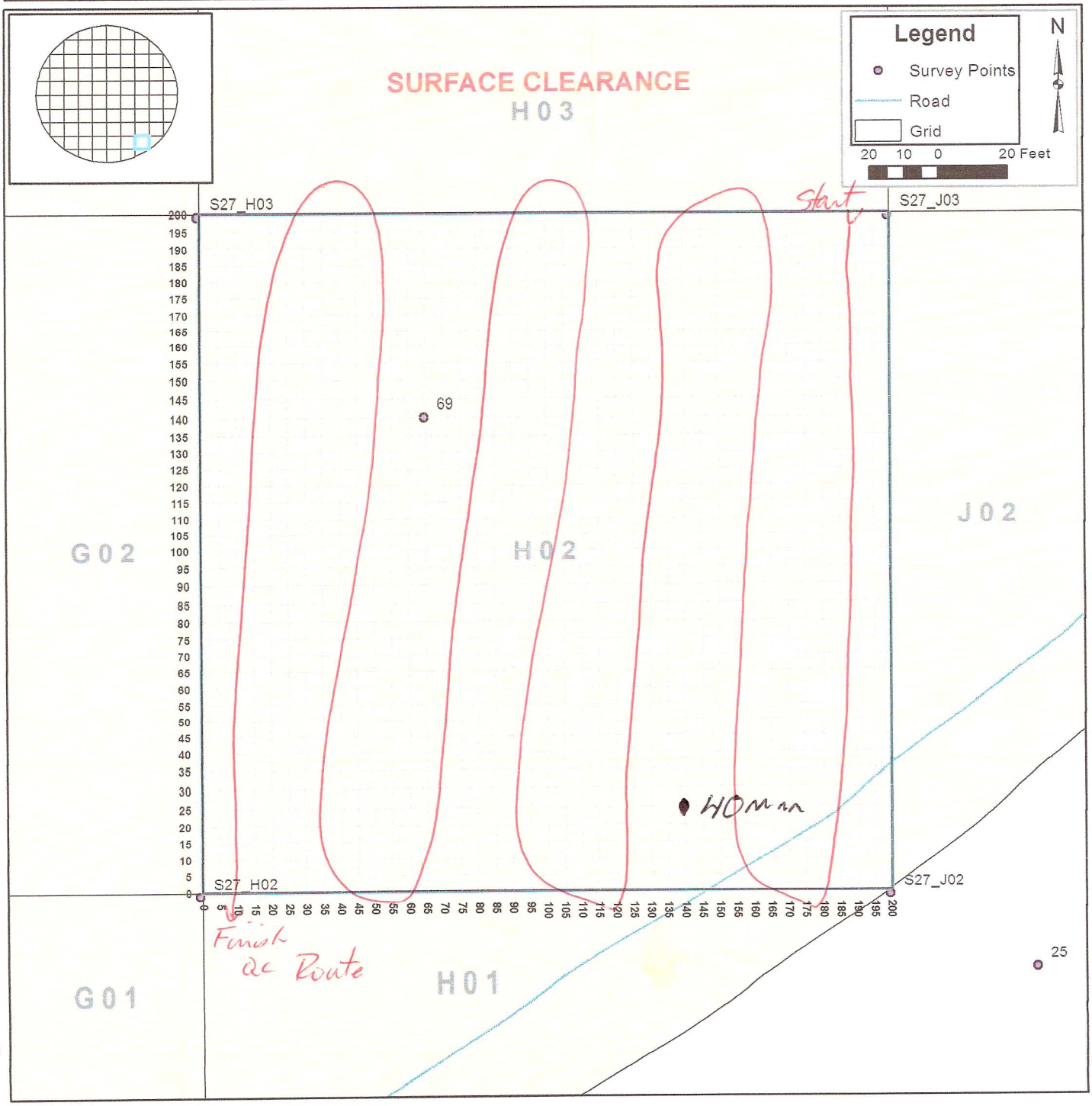
Digs: NA
MEC #: 1
MEC Debris: 45065
Scrap Metal: NA

Seed:
X: 140
Y: 25

	P	F	Date
QC :	☒	☐	9/17/08
QA :	☐	☐	9/17/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099761

S27 J-02

Team : 1 (2) 3

Date Started: 9-16-08

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-16-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 100lbs

Scrap Metal: NA

Seed:

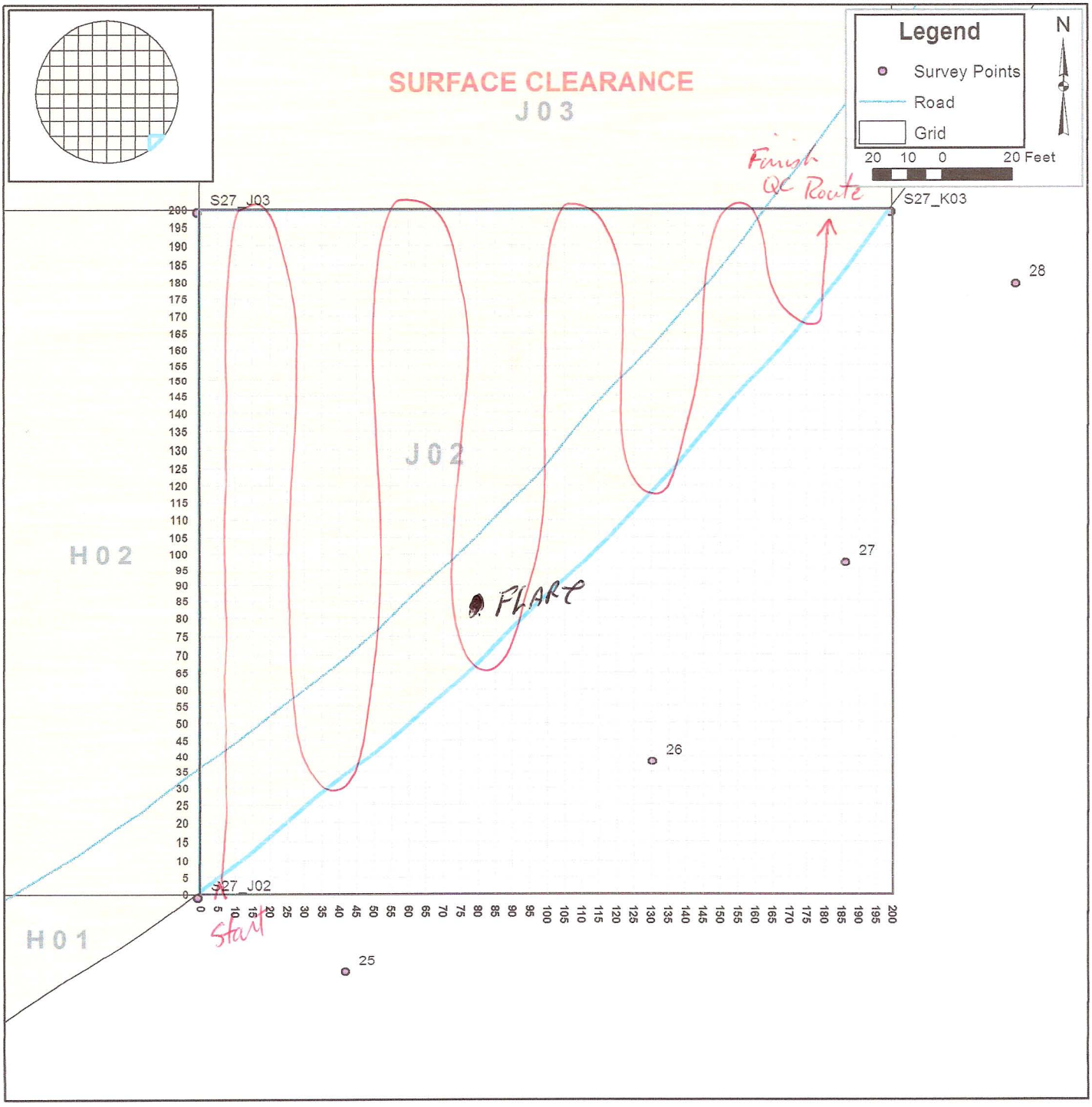
X: 79

Y: 79

	P	F	Date
QC :	☒	☐	9/17/08
QA :	☑	☐	9/17/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099762

S27 B-02 Team : 1 2 3

Date Started: 9-17-08 Soil:

Date Surveyed: NA ☐-Clay

Date Grubbed: NA ☐-Limestone

Date Finished: 9-17-08 ☐-Loam

☒-Sand

Digs: NA

MEC #: NA

MEC Debris: 3063

Scrap Metal: —

Seed:

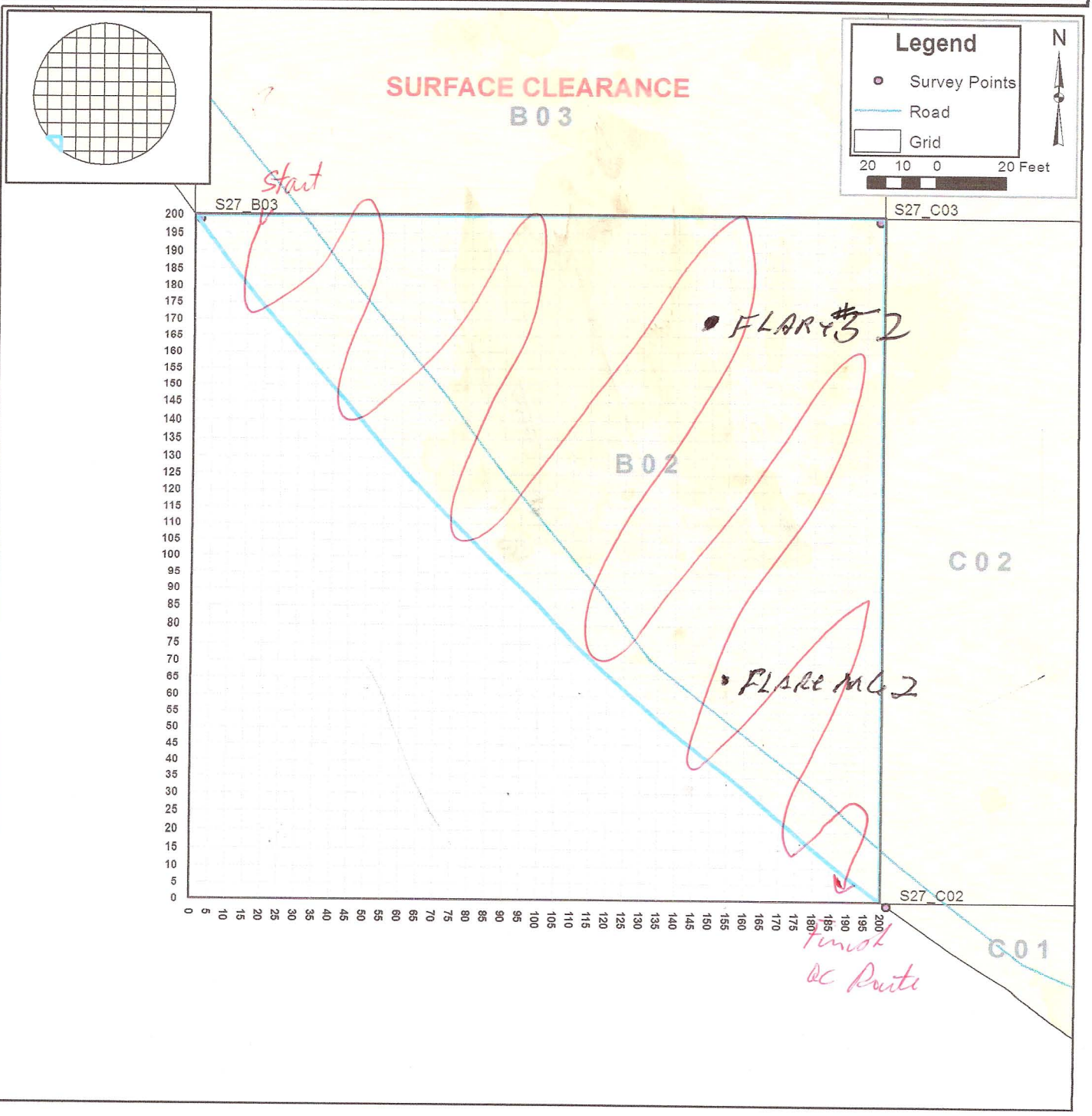
X: 150

Y: 175

	P	F	Date
QC :	☒	☐	9/18/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler
1		M62 FLARE	illum



00099763

S27 C-02

Team : 1 (2) 3

Date Started: 9-17-08

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-17-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 30lbs

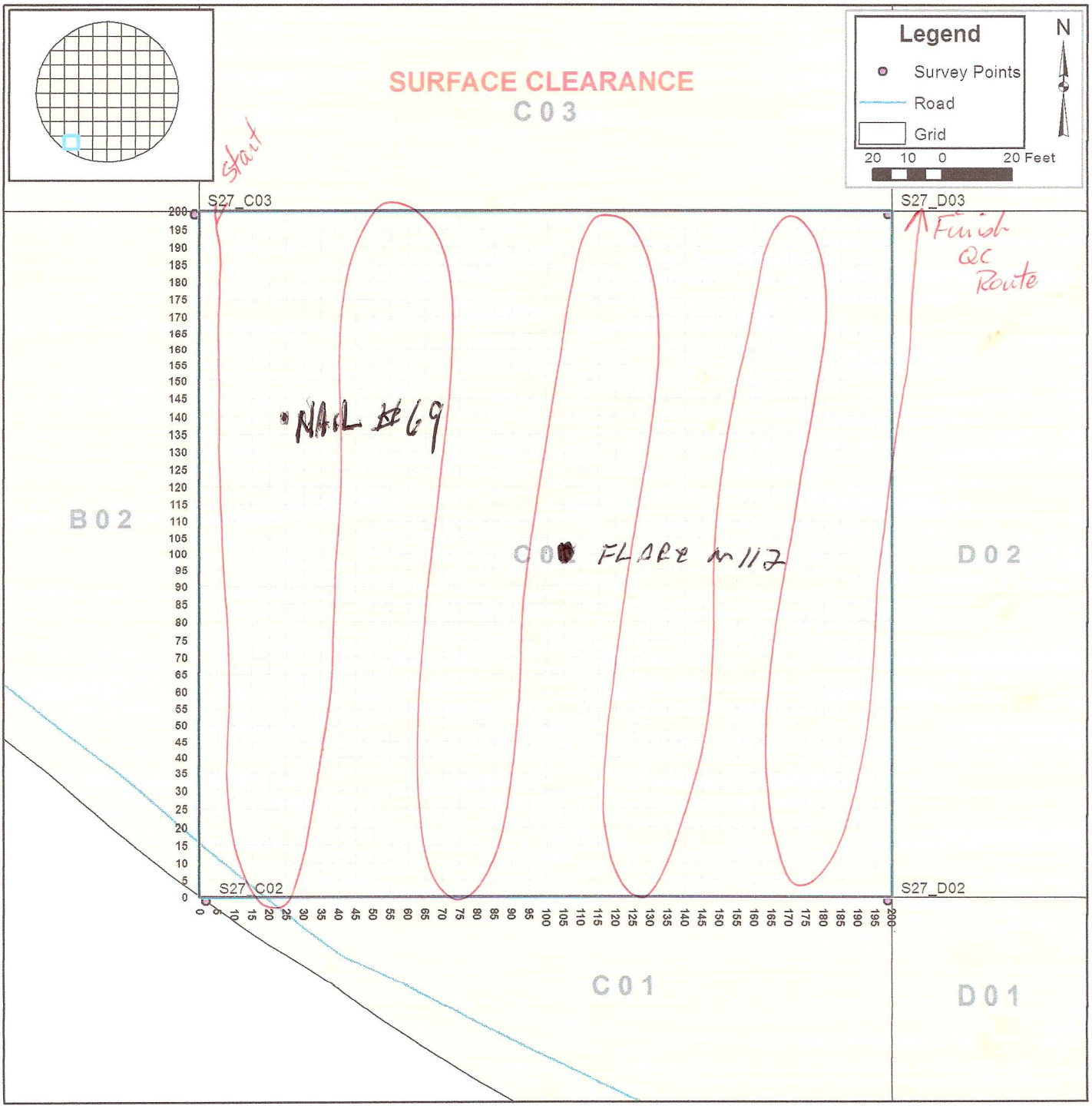
Scrap Metal: —

Seed:
X: 30
Y: 140

	P	F	Date
QC :	☒	☐	9/15/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler
7	0	FLARE/M112	illum



00099764

S27 D-02

Team : 1 (2) 3

Date Started: 9-17-08

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-17-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 100lb

Scrap Metal: —

Seed:

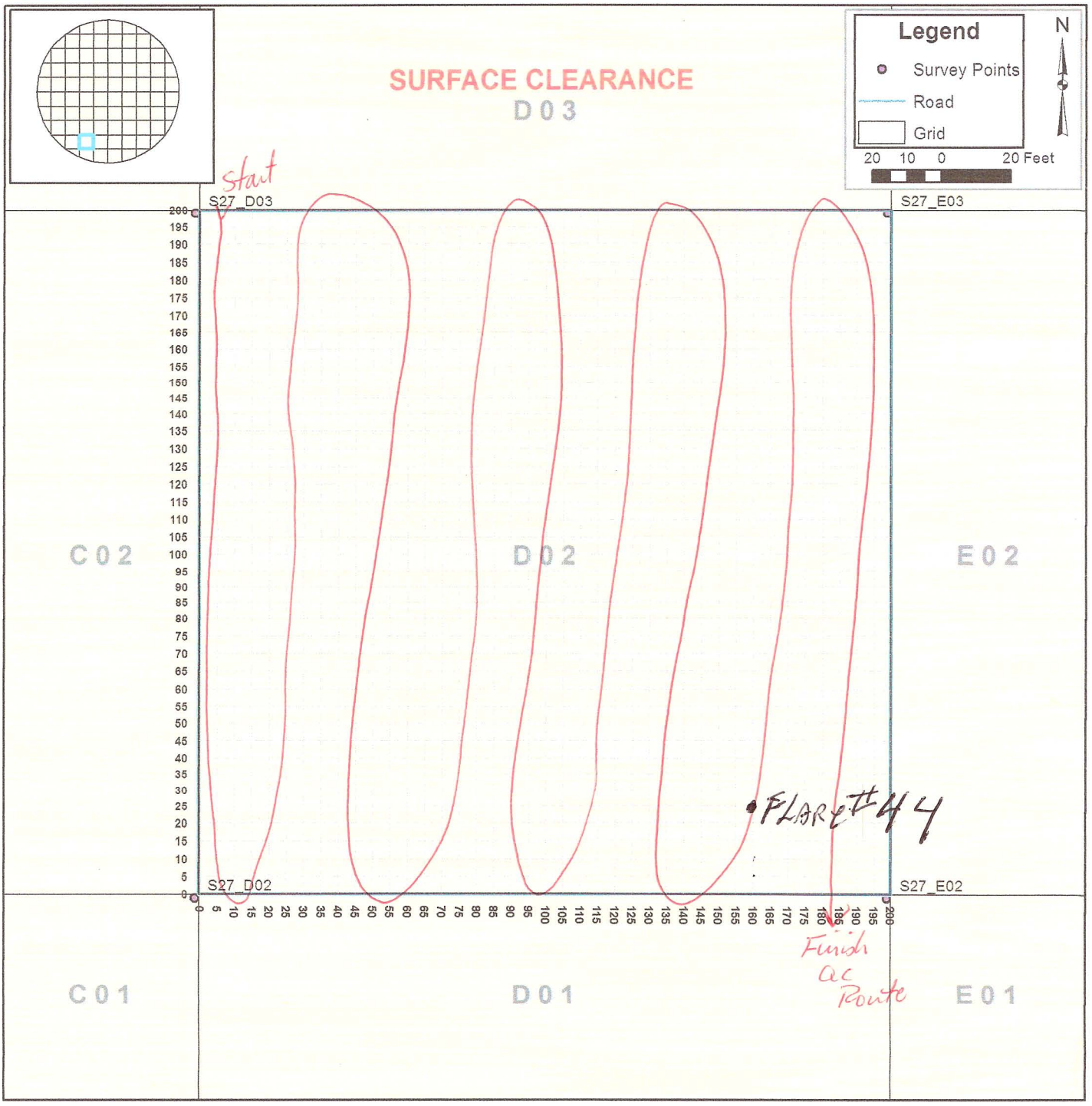
X: 160

Y: 25

	P	F	Date
QC :	☒	☐	9/15/08
QA :	☒	☐	

Comments: —

Qty	Depth(in)	Nomenclature	Filler



00099765

S27 E-02

Team : 1 2 3

Date Started: 9-17-08

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-17-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 1.50lb

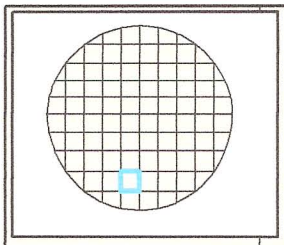
Scrap Metal: NA

Seed:
X: 45
Y: 12

	P	F	Date
QC :	X		9/18/08
QA :	X		

Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

E 0 3

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S27_E03

S27_F03

S27_E02

S27_F02

145

106

143

104

• NAIL #45

Start

Finish QC Route

D 0 2

E 0 2

F 0 2

D 0 1

E 0 1

F 0 1

00099766

S27 F-02

Team : 1 (2) 3

Date Started: 9-17-08
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-17-08

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

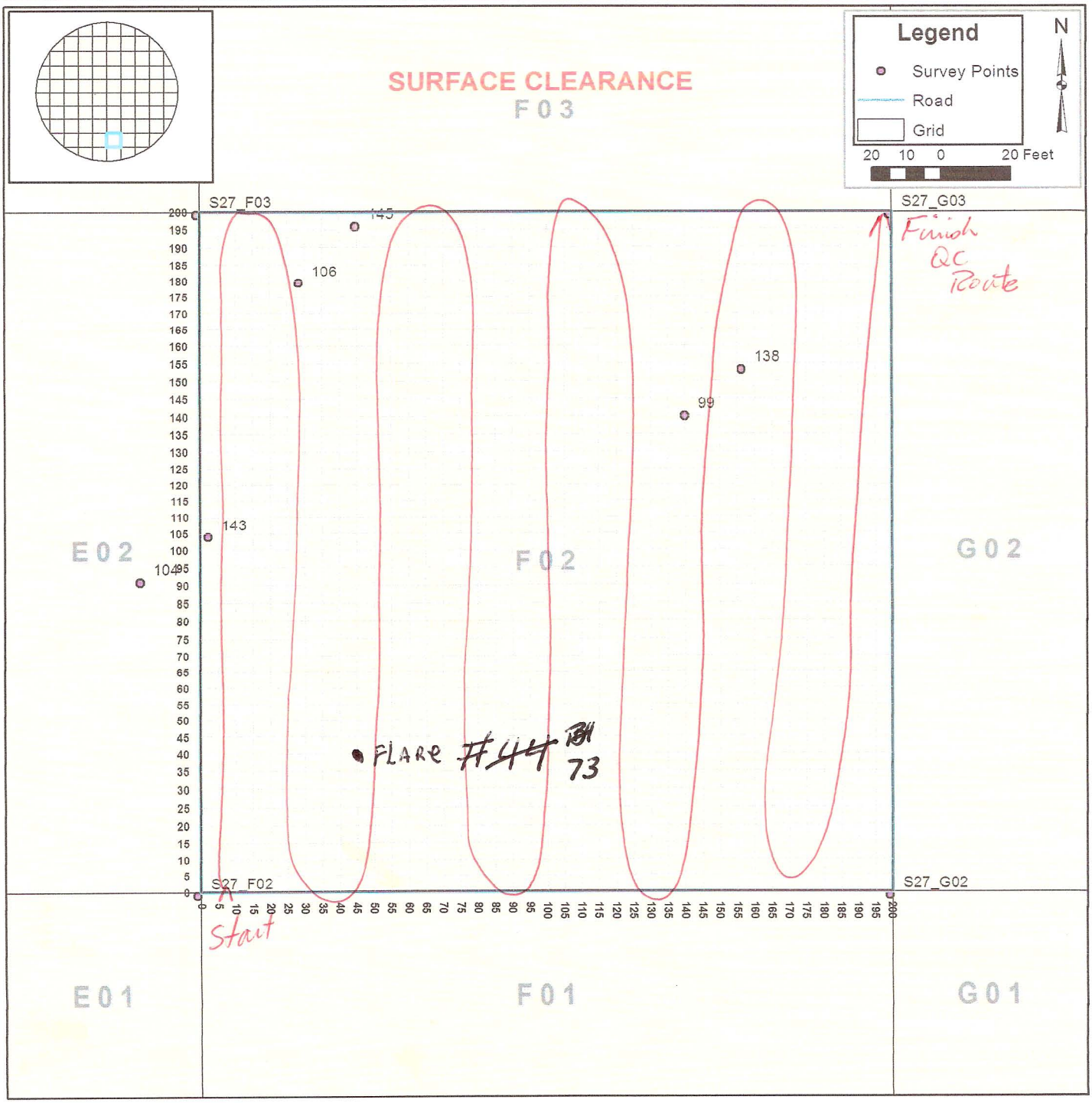
Digs: NA
MEC #: NA
MEC Debris: 200 lbs
Scrap Metal: —

Seed:
X: 94
Y: 39

	P	F	Date
QC :	☒	☐	9/18/08
QA :	☒	☐	

Comments: Flare (QC Seed) #44 reported in error. Confirmed seed item #44 in D02 & #73 located in F02 TEH

Qty	Depth(in)	Nomenclature	Filler



00099767

S27 A-03

Team : 1 (2) 3

Date Started: 9-18-08

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-18-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 5 Cl

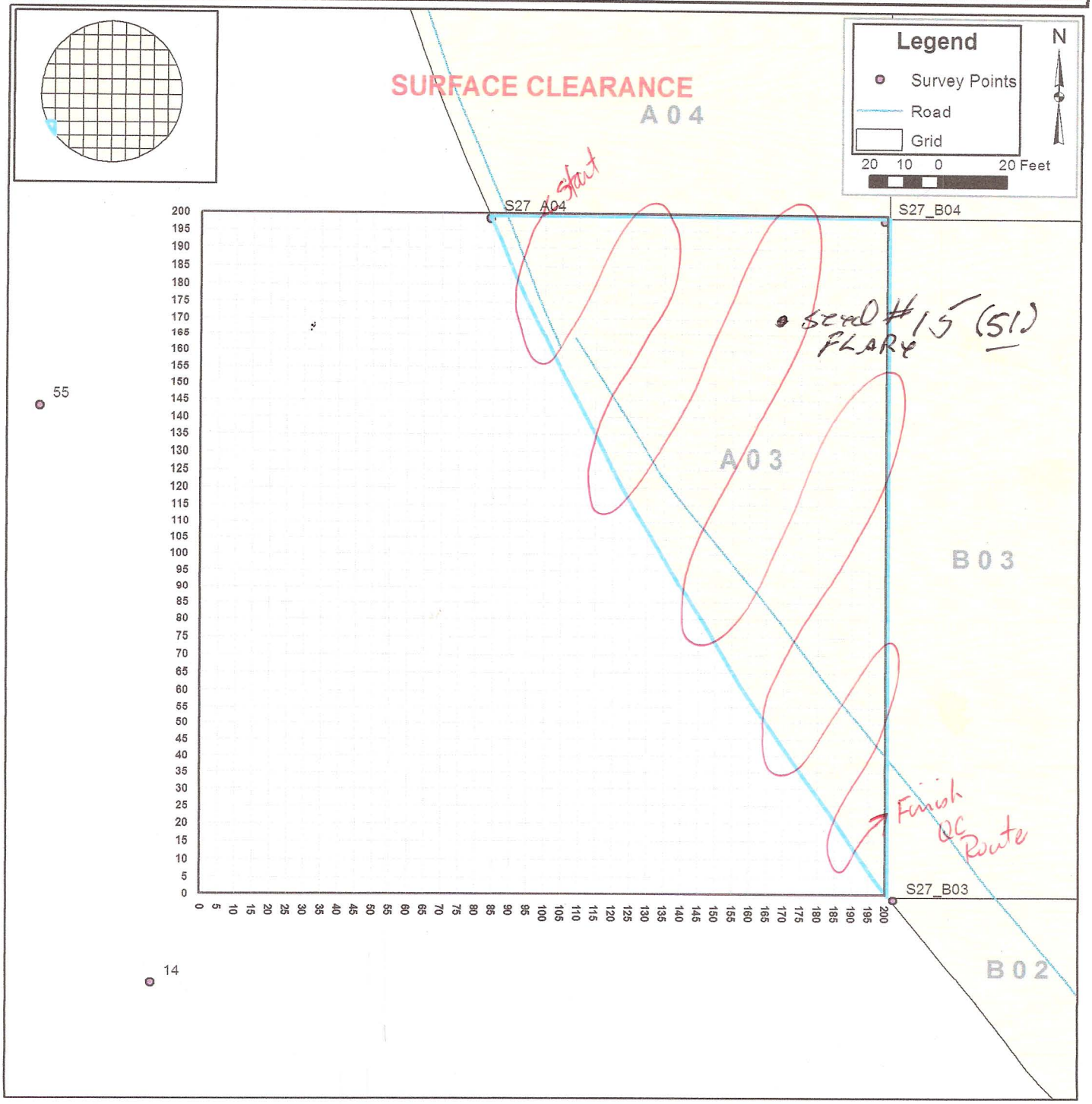
Scrap Metal: —

Seed:
X: 170
Y: 170

	P	F	Date
QC :	X	☐	9/22/08
QA :	X	☐	9/22/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099768

S27 B-03

Team : 1 (2) 3

Date Started: 9-18-08

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-18-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☐ ~~Sand~~

Digs: NA

MEC #: NA

MEC Debris: 206

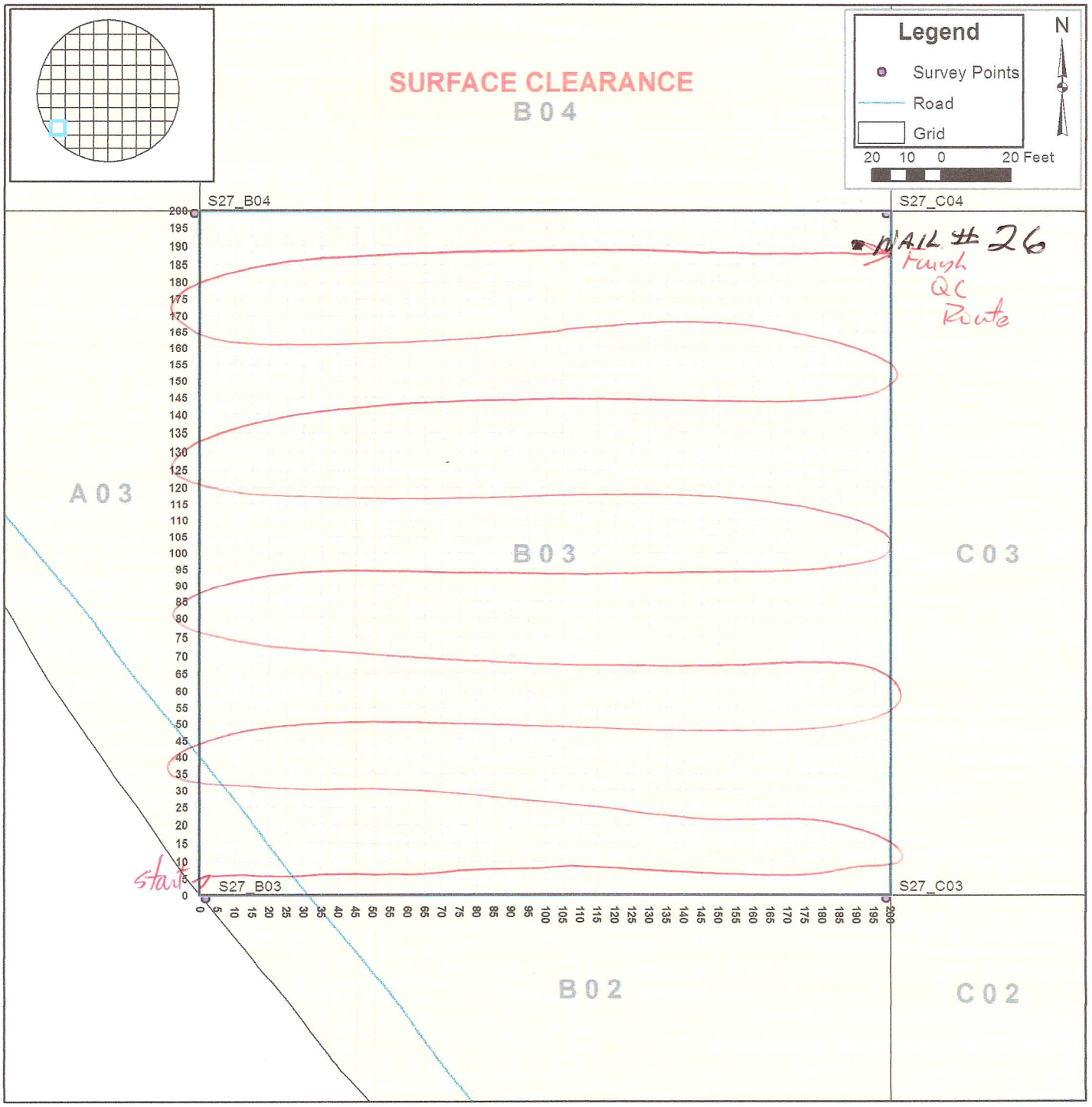
Scrap Metal: 16

Seed:
X: 190
Y: 190

	P	F	Date
QC :	☒	☐	9/22/08
QA :	☒	☐	9/22/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099769

S27 C-03

Team : 1 2 3

Date Started: 9-18-08
Date Surveyed: N/A
Date Grubbed: N/A
Date Finished: 9-18-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: N/A
MEC #:
MEC Debris: 20lb
Scrap Metal: 1lb

Seed:
X: 60
Y: 163

	P	F	Date
QC :	X		9/22/08
QA :	X		9/22/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0	Flare M62	Illuminate

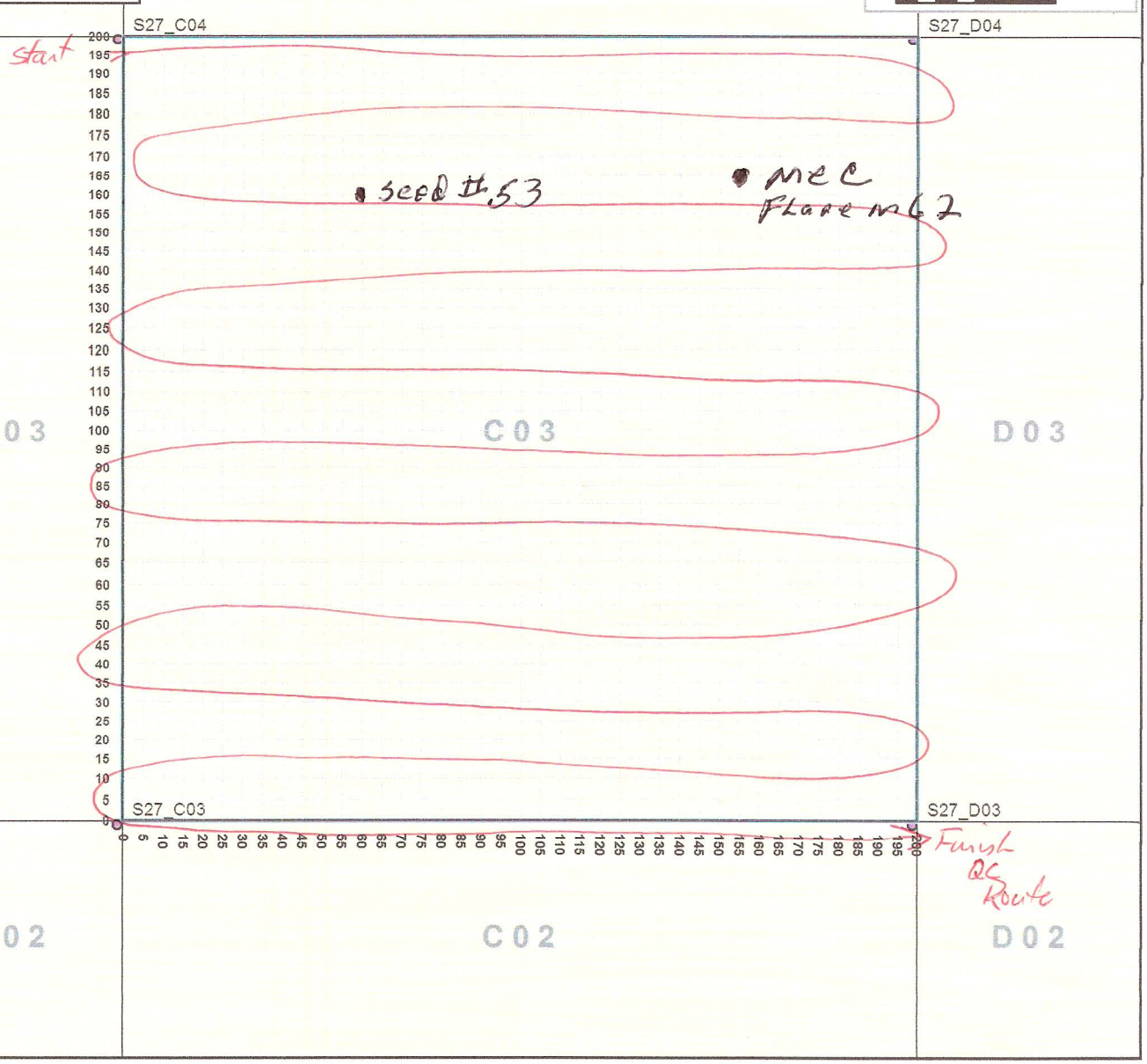
SURFACE CLEARANCE

C04

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099770

S27 D-03 Team : 1 (2) 3

Date Started: 9-18-08
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-18-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

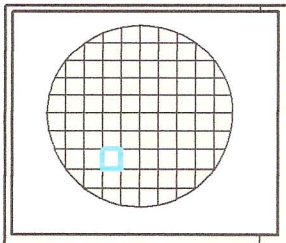
Digs: NA
MEC #: NA
MEC Debris: 204
Scrap Metal: 16

Seed:
X: 25
Y: 175

	P	F	Date
QC :	X	☐	9/22/08
QA :	X	☐	9/22/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0	FLARE M62	Ammonite
1	0	FLARE M62	"



SURFACE CLEARANCE
D04

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S27_D04 S27_E04

Finish QC Route

Seed #20

② • MEC FLARE M62

① • MEC FLARE M62

Start

S27_D03 S27_E03

C03 D03 E03

C02 D02 E02

00099771

S27 F-06

Team (1) 2 3

Date Started: 9-18-2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-18-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: 6 Items

MEC Debris: 20 lbs

Scrap Metal: 380 lbs

Seed:

X: 193'

Y: 37'

	P	F	Date
QC :	☒	☐	9/22/08
QA :	☒	☐	9/22/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
5	0"	M62 FLARE	Illuminate

SURFACE CLEARANCE

F07

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S27_F07 S27_G07 S27_F06 S27_G06

start

1 X M62

2 X M62

3 X M62

4 X M62

5 X M62

6 X M62

157

118 WELL

TELEPHONE POLE

X NAIL #72

Finish & Route

E06 F06 G06

E05 F05 G05

00099772

S27 E-03

Team : 1 (2) 3

Date Started: 9-19-08

Date Surveyed: N A

Date Gru:bbed: N A

Date Finished: 9-22-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N A

MEC #: N A

MEC Debris: 200 lbs

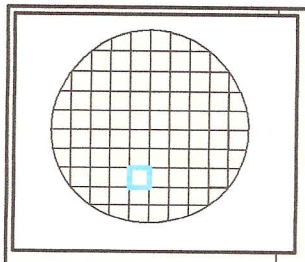
Scrap Metal: —

Seed:
X: 185
Y: 175

	P	F	Date
QC :	☒	☐	9/23/08
QA :	☒	☐	9/23/08

Comments:

	Qty	Depth(in)	Nomenclature	Filler
①	1	—	FLARE M112	illuminate
②	1	—	FLARE M112	"
③	1	—	FLARE M112	"
④	1	—	FLARE M112	"
⑤	1	—	FLARE M112	"



SURFACE CLEARANCE

E04

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S27_E04 S27_F04 S27_E03 S27_F03

2 M112
1 M112
3 M112
4 M112
M112 5
Seed #3
FLART
Finish
QC Route
7 M112
6 M112
Start

D03 E03 F03

D02 E02 F02

145
106

⑥ Flare M112 illuminate

⑦ Flare M112

00099773

S27 F-03 Team : 1 (2) 3

Date Started: 9-22-08
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-22-08

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

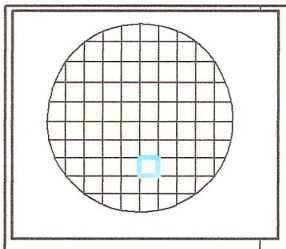
Digs: NA
MEC #: NA
MEC Debris: 2200
Scrap Metal: —

Seed:
X: 40
Y: 180

	P	F	Date
QC :	☒	☐	9/23/08
QA :	☐	☐	9/23/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0	Flare M62	illuminate



SURFACE CLEARANCE

F04

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S27_F04 S27_G04

Finish QC Route

Scrap

Flare

M62

start

S27_F03 S27_G03

E03 F03 G03

106

E02 F02 G02

138

99

00099774

S27 G-03

Team : 1 2 3

Date Started: 9-22-08

Date Surveyed: NA

Date Grubbed: NA

Date Finished: NA

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: NA

MEC #: NA

MEC Debris: 400 lb

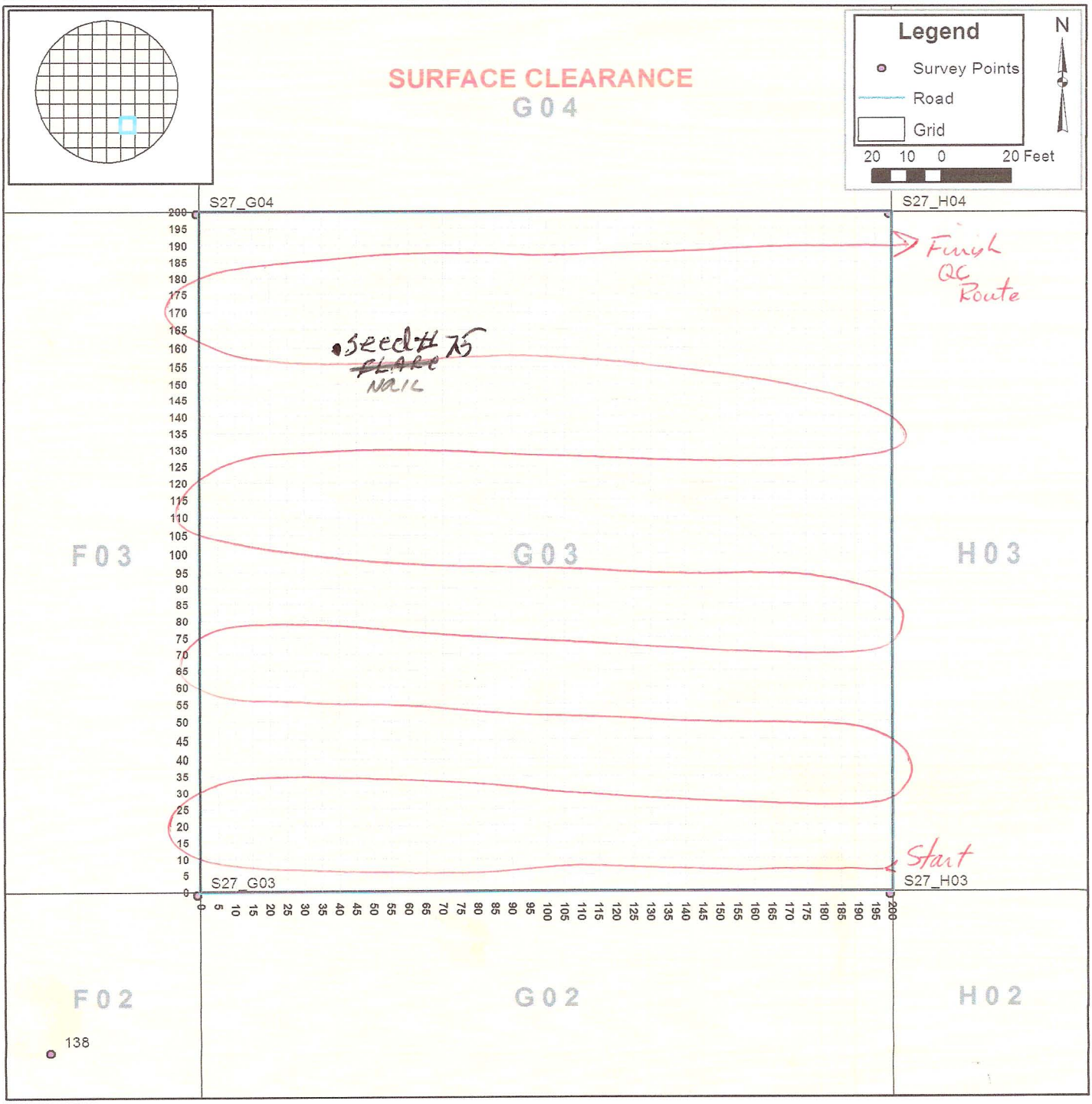
Scrap Metal: NP

Seed:
X: 40
Y: 160

	P	F	Date
QC :	☒	☐	9/23/08
QA :	☒	☐	9/23/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099775

S27 G-06 Team (1) 2 3

Date Started: 9-22-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-22-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

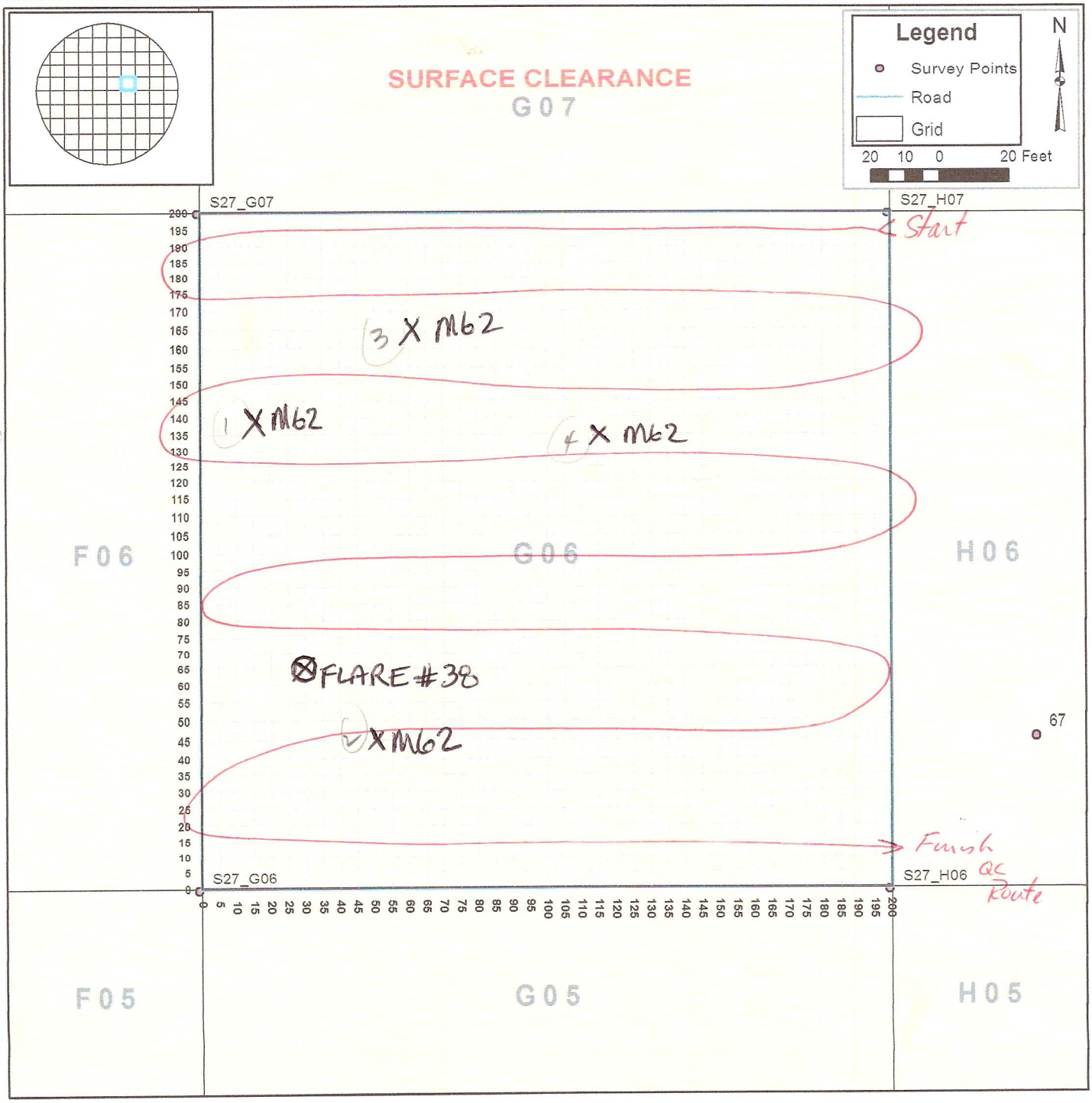
Digs: NA
MEC #: 04
MEC Debris: 370 lbs
Scrap Metal: 30 lbs

Seed:
X: 30'
Y: 65'

	P	F	Date
QC :	☒	☐	9/23/08
QA :	☒	☐	9/23/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
4	0"	M62 FLARE	Illuminant



00099776

S27 H-03

Team : 1 2 3

Date Started: 9-22-08

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-22-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☐ -Sand

Digs: NA

MEC #: NA

MEC Debris: 150

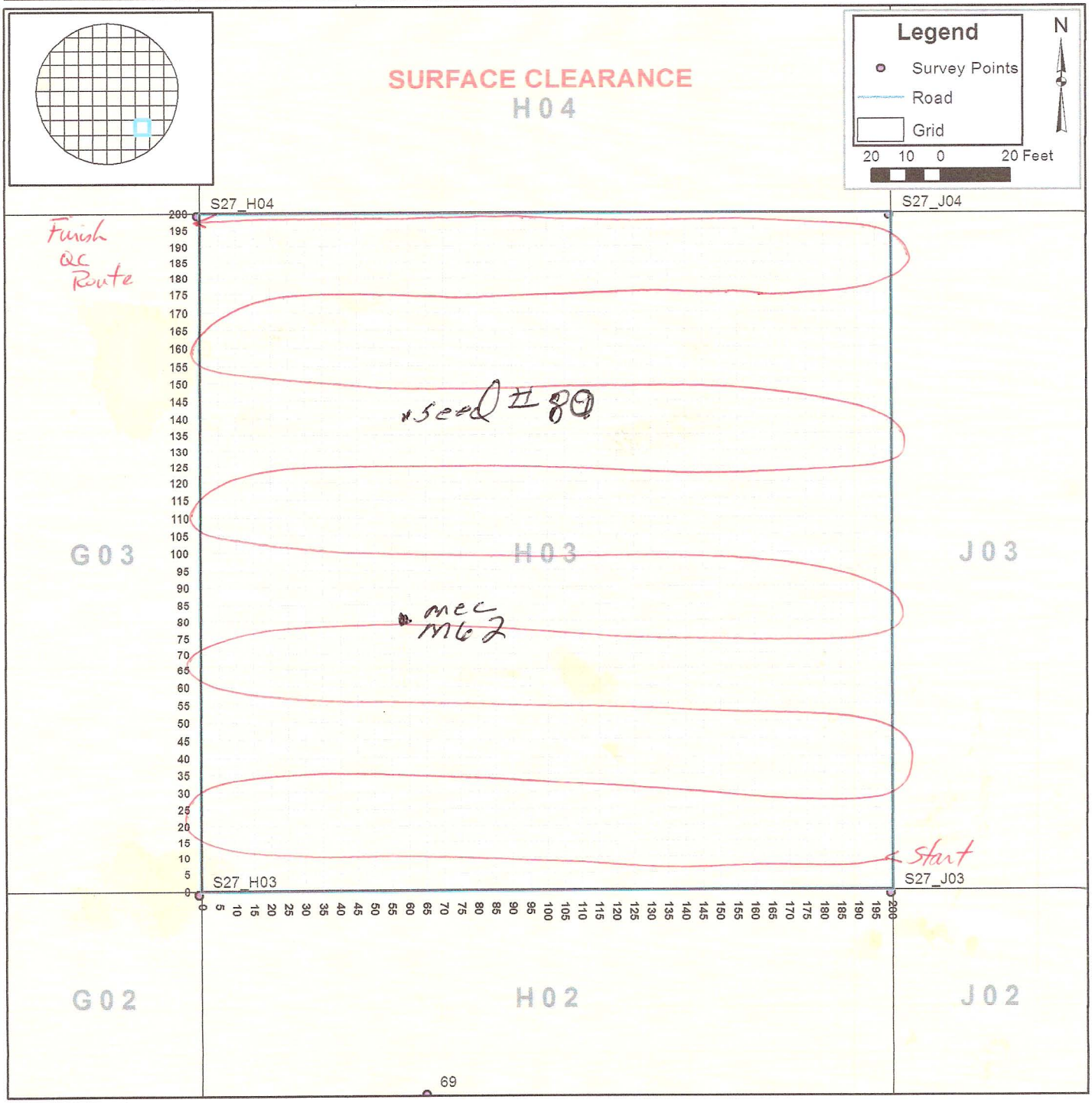
Scrap Metal: 5

Seed:
X: 60
Y: 89

	P	F	Date
QC :	X	☐	9/23/08
QA :	X	☐	9/23/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0	Flare+M62	illuminate



00099777

S27 H-06

Team (1) 2 3

Date Started: 9-22-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-22-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: Ø1

MEC Debris: 185 lbs

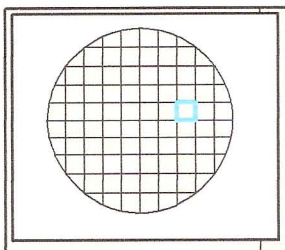
Scrap Metal: 60 lbs

Seed:
X: 181'
Y: 72'

	P	F	Date
QC :	☒	☐	9/23/08
QA :	☒	☐	9/23/08

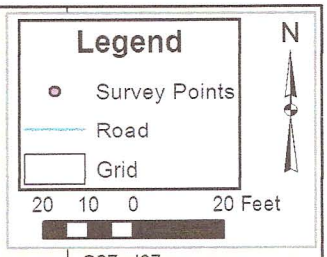
Comments:

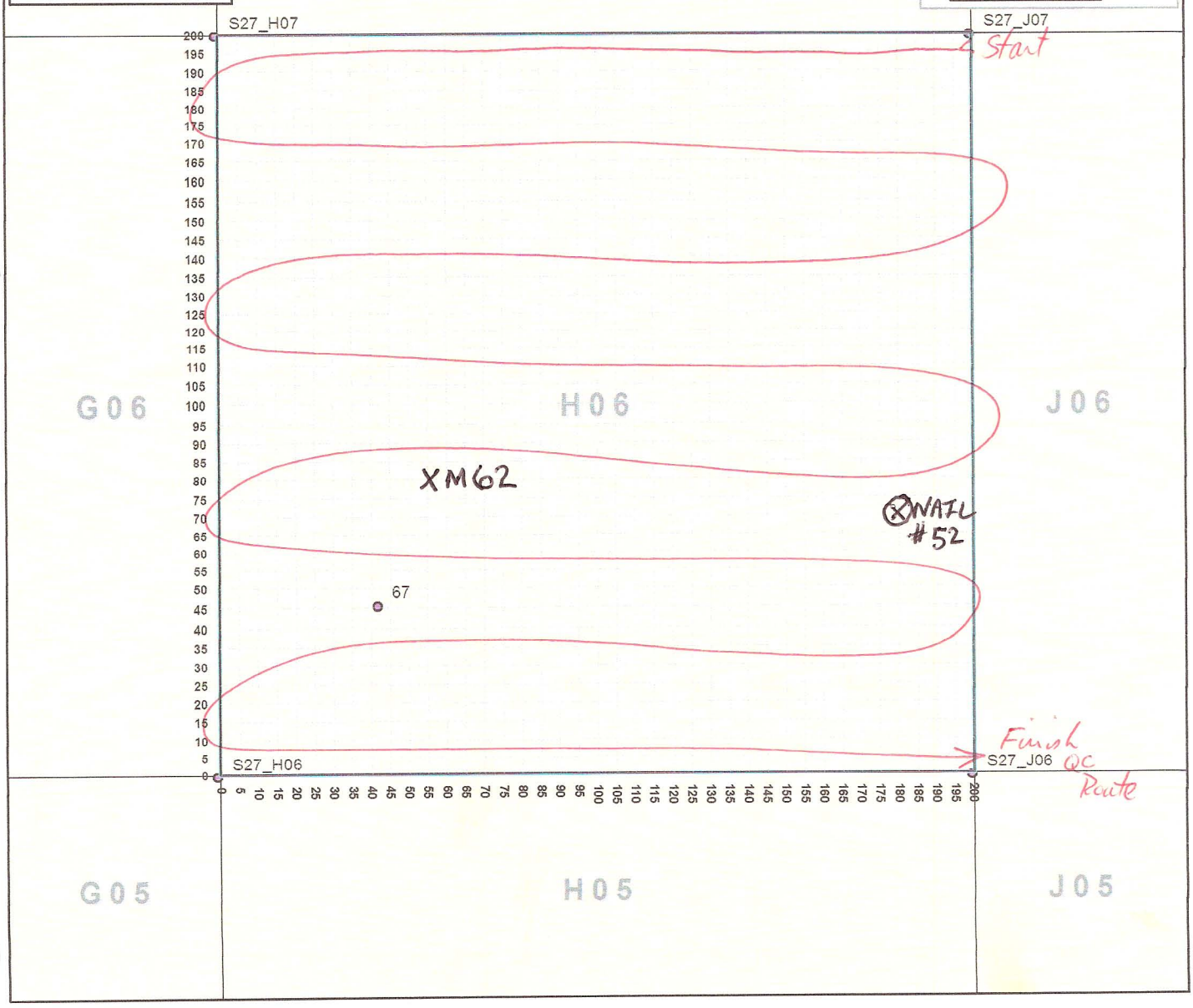
Qty	Depth(in)	Nomenclature	Filler
1	0"	M62 FLARE	Illuminant



SURFACE CLEARANCE

H07





00099778

S27 J-06 Team : (1) 2 3

Date Started: 9-22-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-22-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

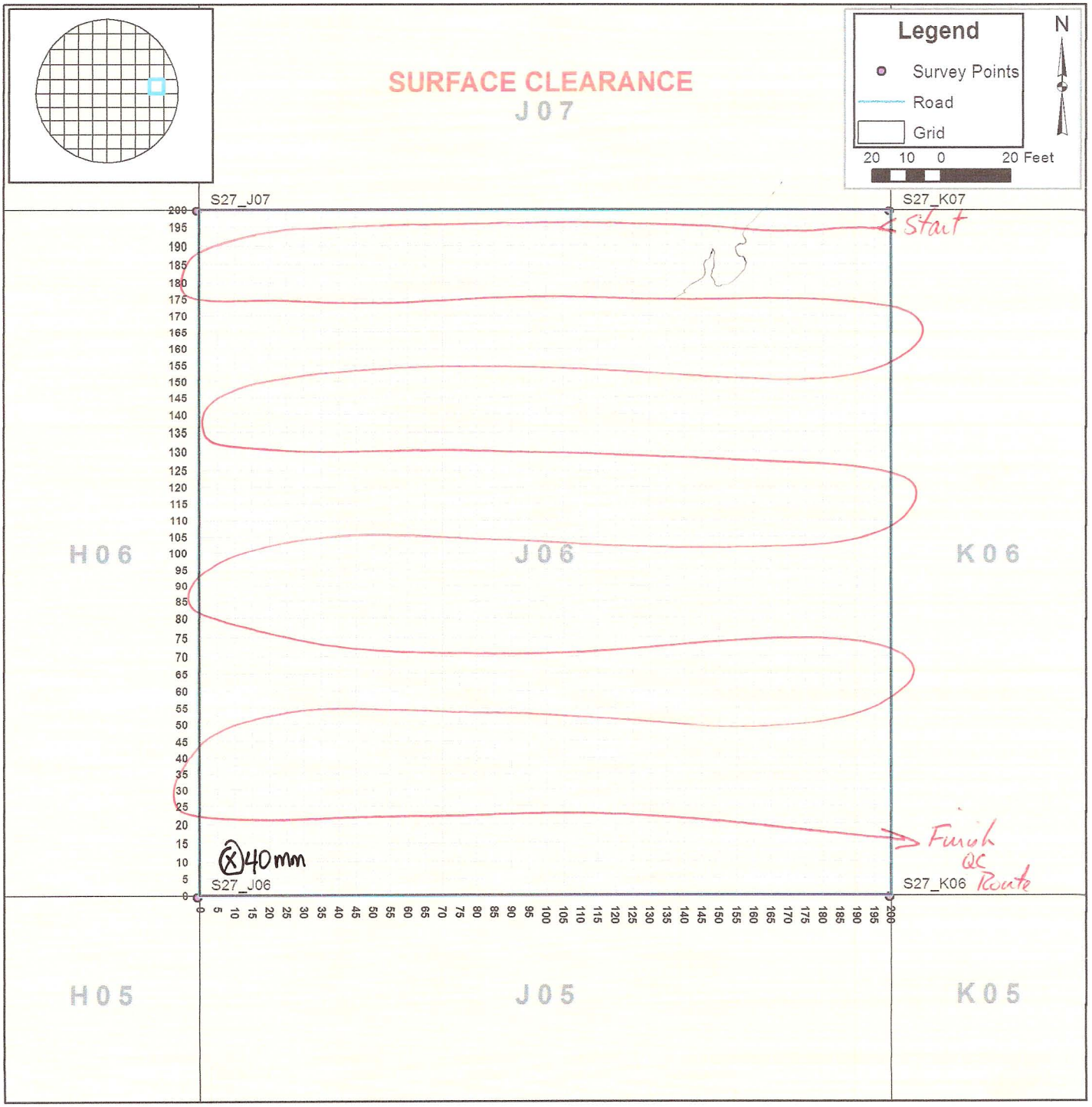
Digs: NA
MEC #: NA
MEC Debris: 30 lbs
Scrap Metal: ~~30~~ lbs

Seed:
X: 8'
Y: 10'

	P	F	Date
QC :	☒	☐	9/23/08
QA :	☒	☐	9/23/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099779

S27 K-03

Team: 1 2 3

Date Started: 9-22-08

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-22-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 5

Scrap Metal: —

Seed:

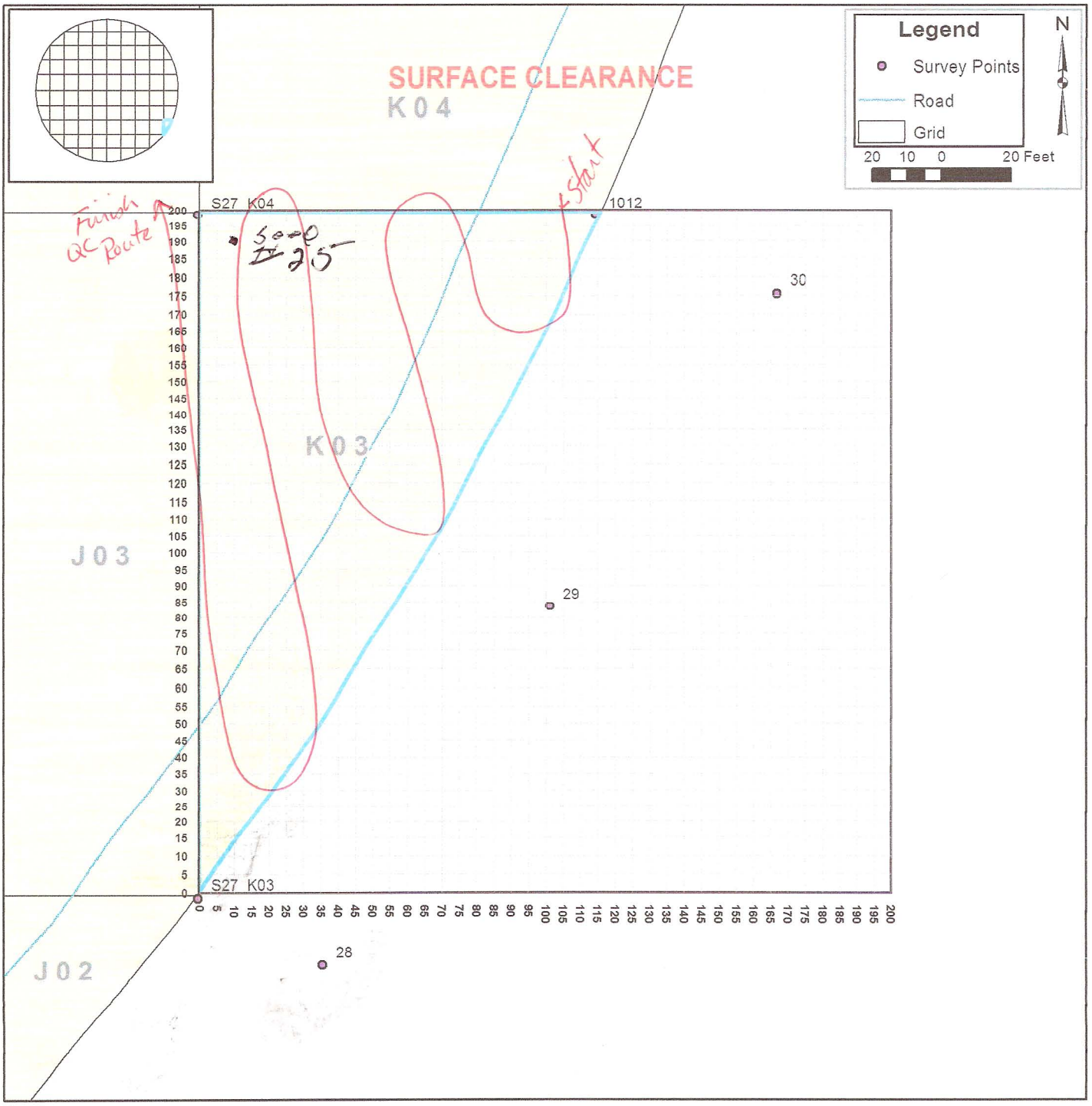
X: 190

Y: 190

	P	F	Date
QC:	☒	☐	9/23/08
QA:	☒	☐	9/23/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099780

S27 K-06 Team: 1 2 3

Date Started: 9-22-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-22-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 120 lbs

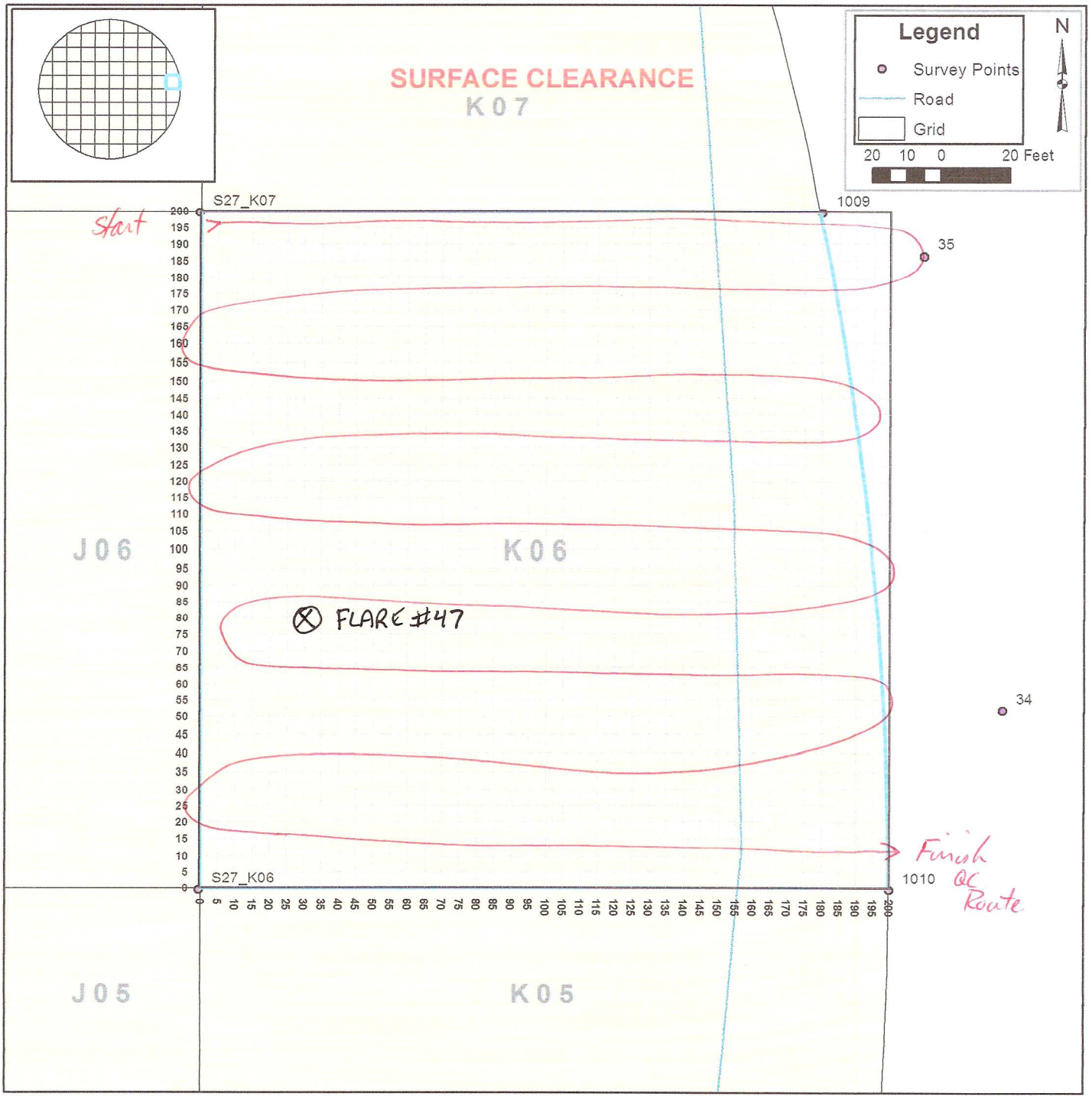
Scrap Metal: ~~100~~ lbs

Seed:
X: 30'
Y: 80'

	P	F	Date
QC:	☒	☐	9/23/08
QA:	☒	☐	9/23/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099781

S27 H-04 Team : 1 (2) 3

Date Started: _____
Date Surveyed: _____
Date Gru:bbed: _____
Date Finished: _____

Soil:
☐-Clay
☐-Limestone
☐-Loam
☐-Sand

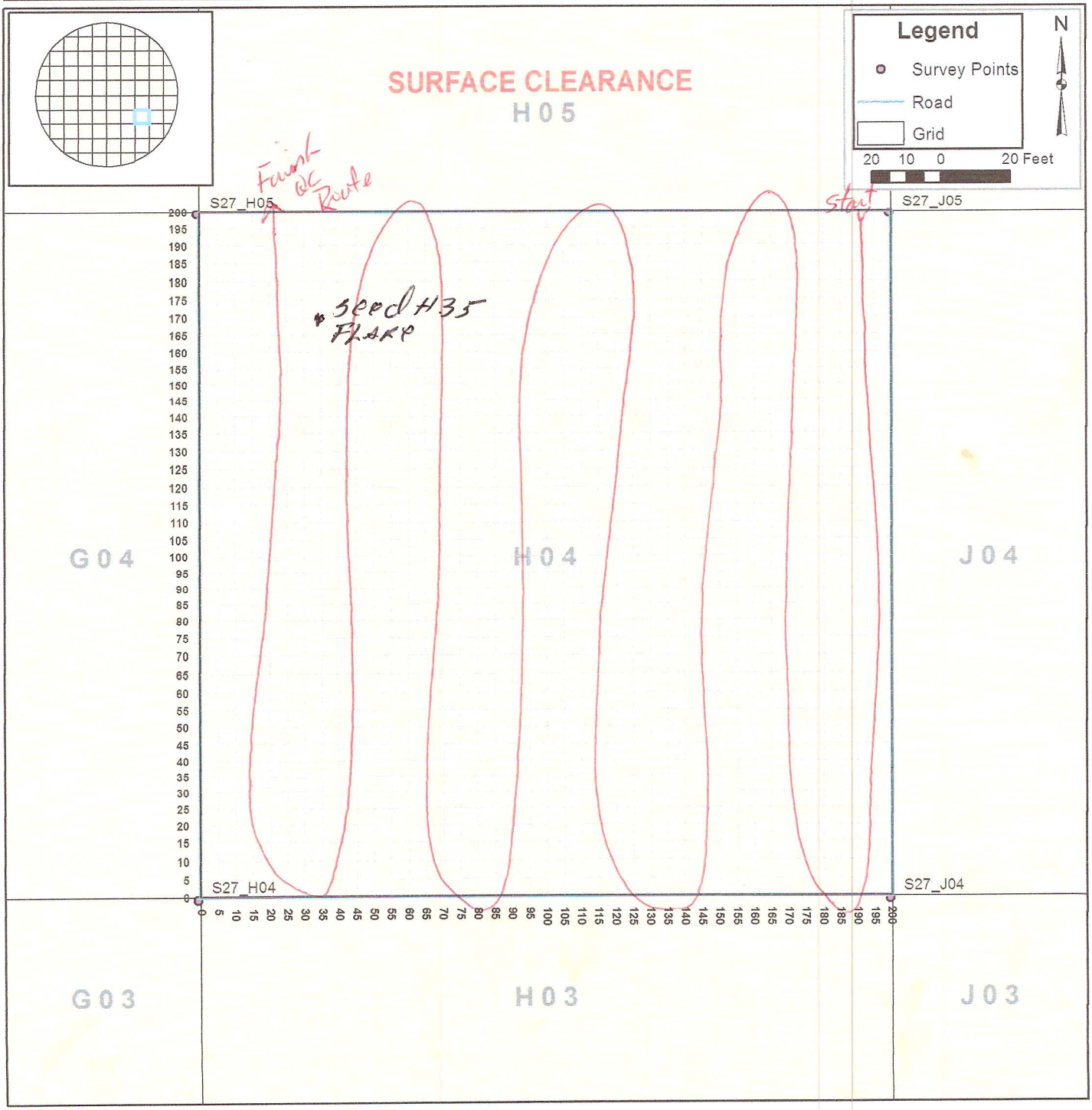
Digs: NA
MEC #: NA
MEC Debris: 2008
Scrap Metal: NA

Seed:
X: 35
Y: 167

	P	F	Date
QC :	X		9/24/08 ✓
QA :	X		✓

Comments: _____

Qty	Depth(in)	Nomenclature	Filler



00099782

S27 H-08 Team: 1 2 3

Date Started: 9-23-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-23-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

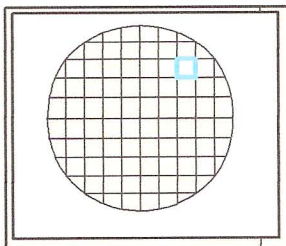
Digs: NA
MEC #: NA
MEC Debris: 310 lbs
Scrap Metal: Ø lbs

Seed:
X: 3'
Y: 27'

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	

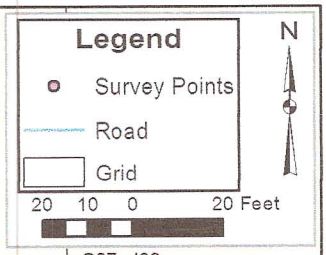
Comments:

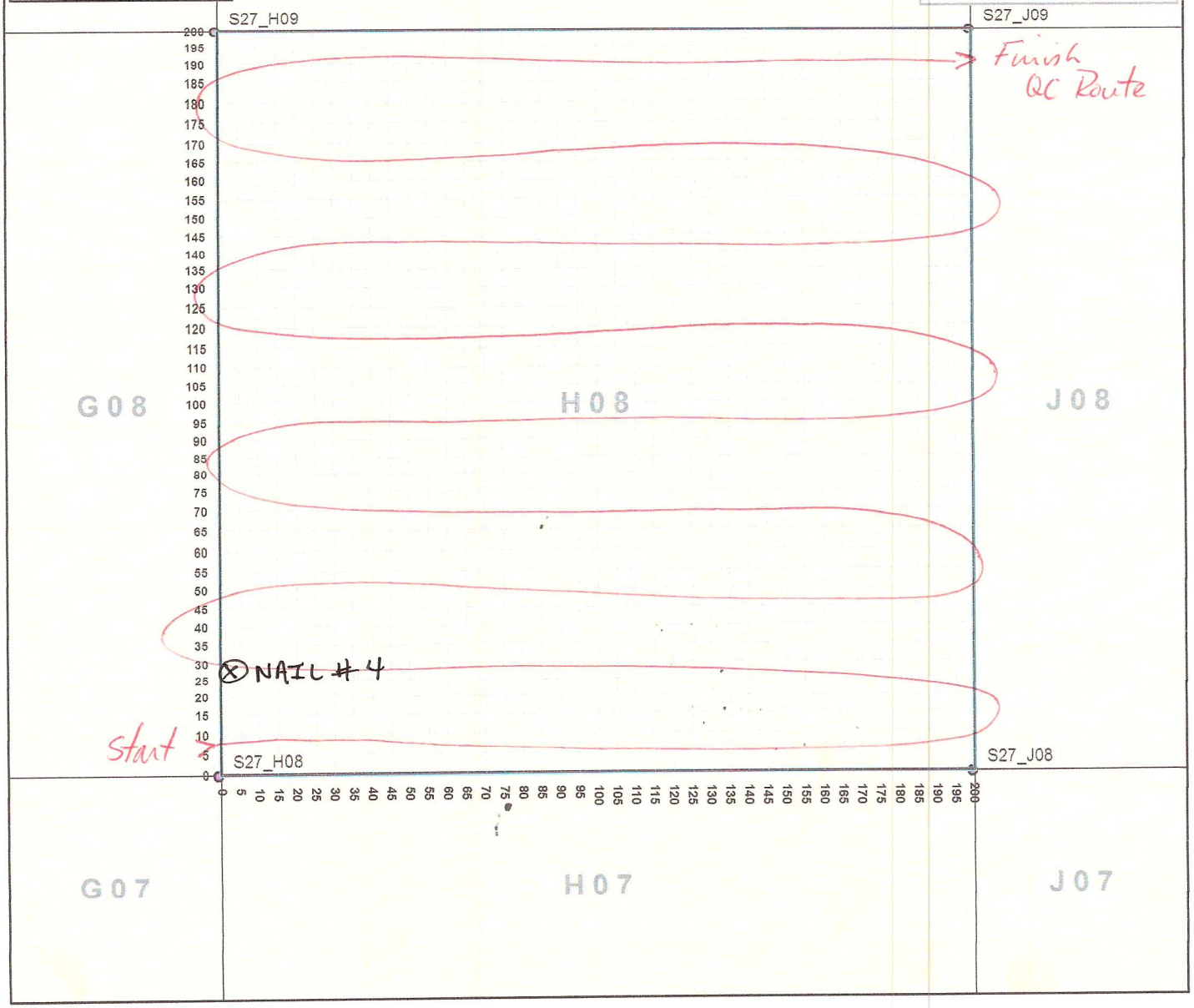
Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

H09





00099783

S27 J-03

Team : 1 (2) 3

Date Started: 9-22-08

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-22-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 2565

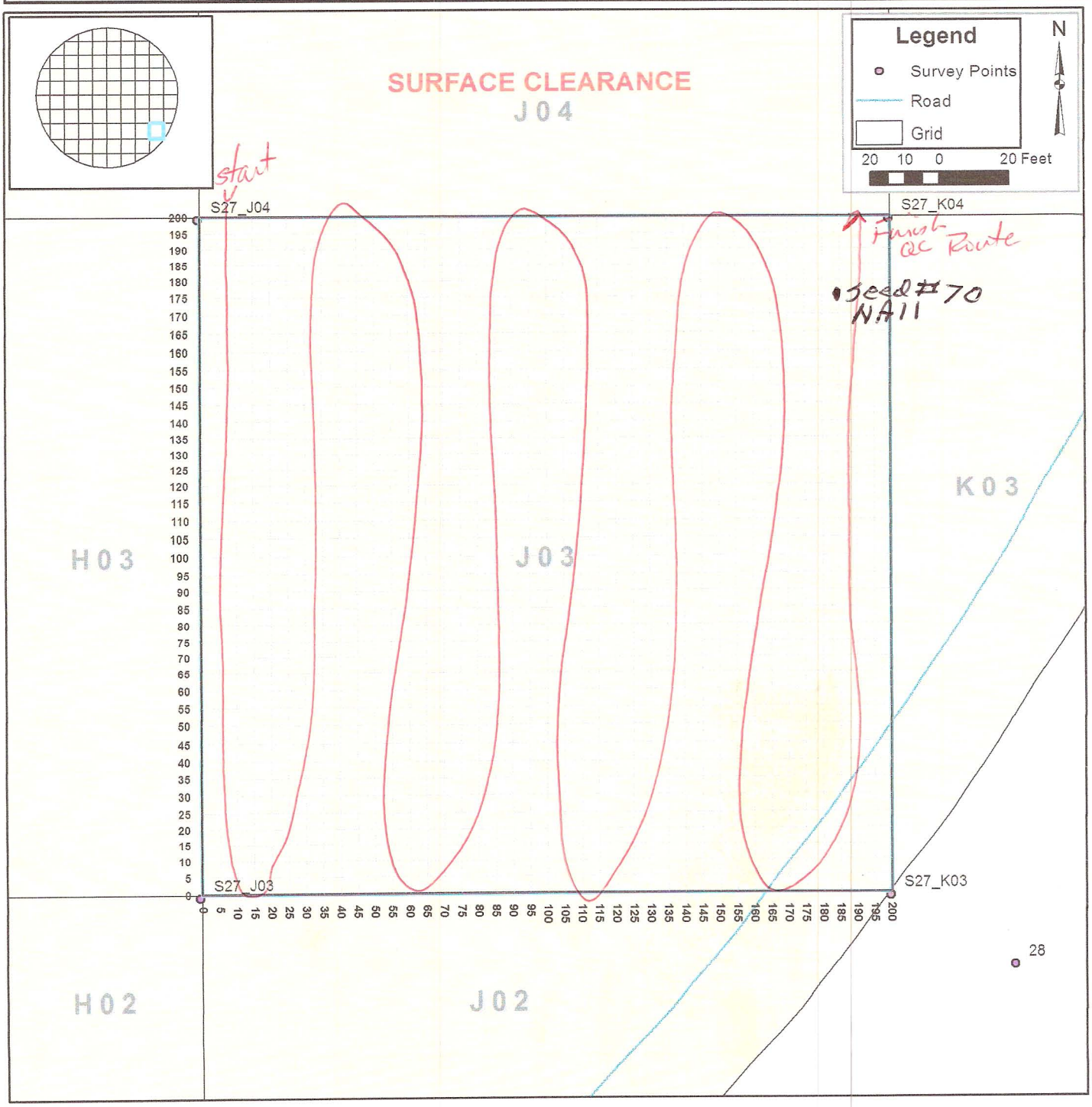
Scrap Metal: —

Seed:
X: 185
Y: 170

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099784

S27 J-04

Team : 1 2 3

Date Started: 9-22-08

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-23-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☐ -Sand

Digs: NA

MEC #: NA

MEC Debris: 2500lbs

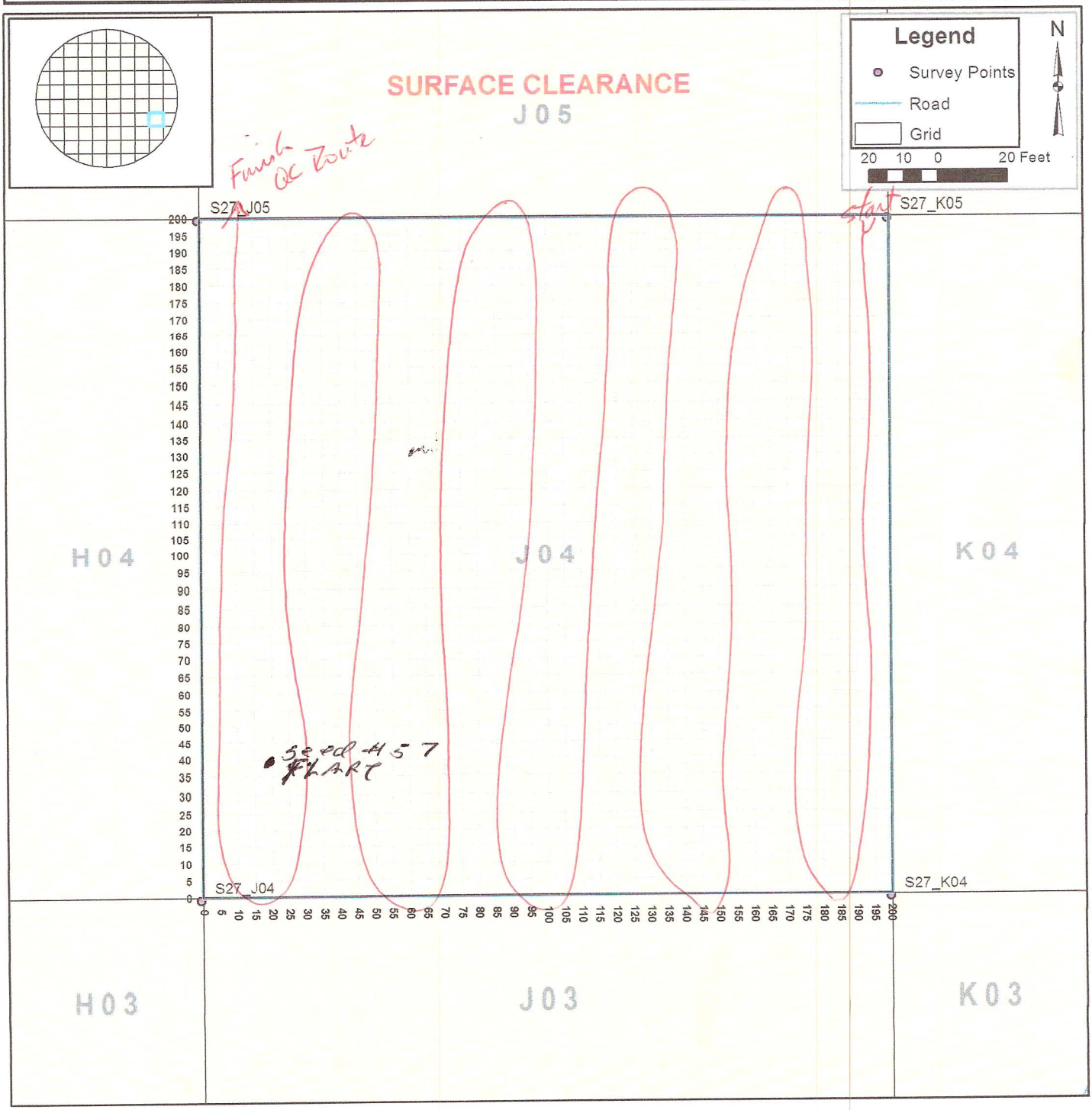
Scrap Metal: NA

Seed: X: 20 Y: 40

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099785

S27 J-08 Team (1) 2 3

Date Started: 9-23-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-23-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA
MEC #: NA
MEC Debris: 2351bs
Scrap Metal: Ø lbs

Seed:
X: 191'
Y: 11'

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE

J09

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S27_J09 S27_K091007

Finish QC Route

H08 J08 K08

FLARE #7

start

S27_J08 S27_K08

H07 J07 K07

00099786

S27 K-04

Team : 1 (2) 3

Date Started: 9-23-08

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-23-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 150lb

Scrap Metal: NA

Seed:

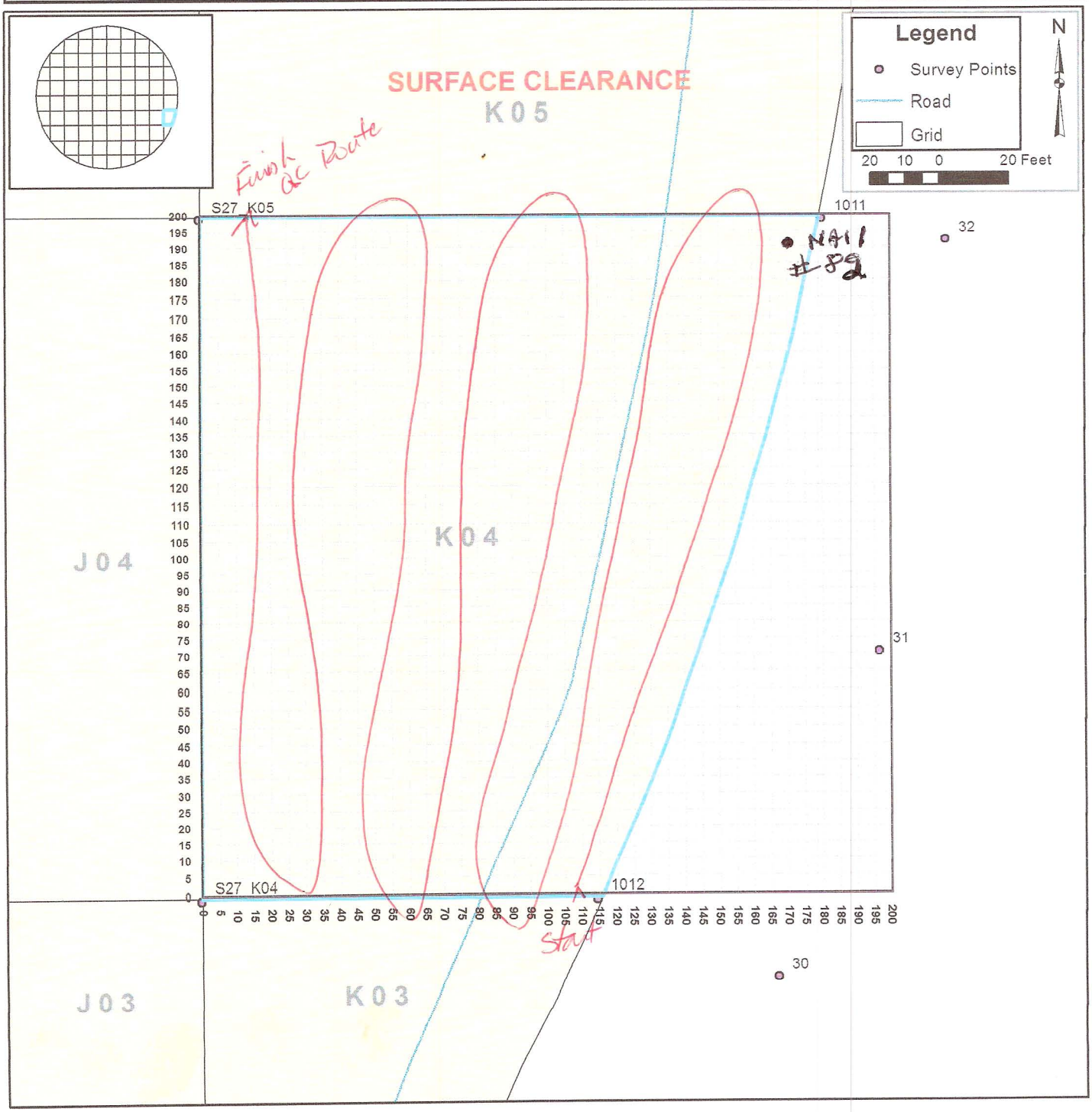
X: ~~45~~ 165

Y: 10

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099787

S27 K-07 Team : 1 2 3

Date Started: 9-23-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-23-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

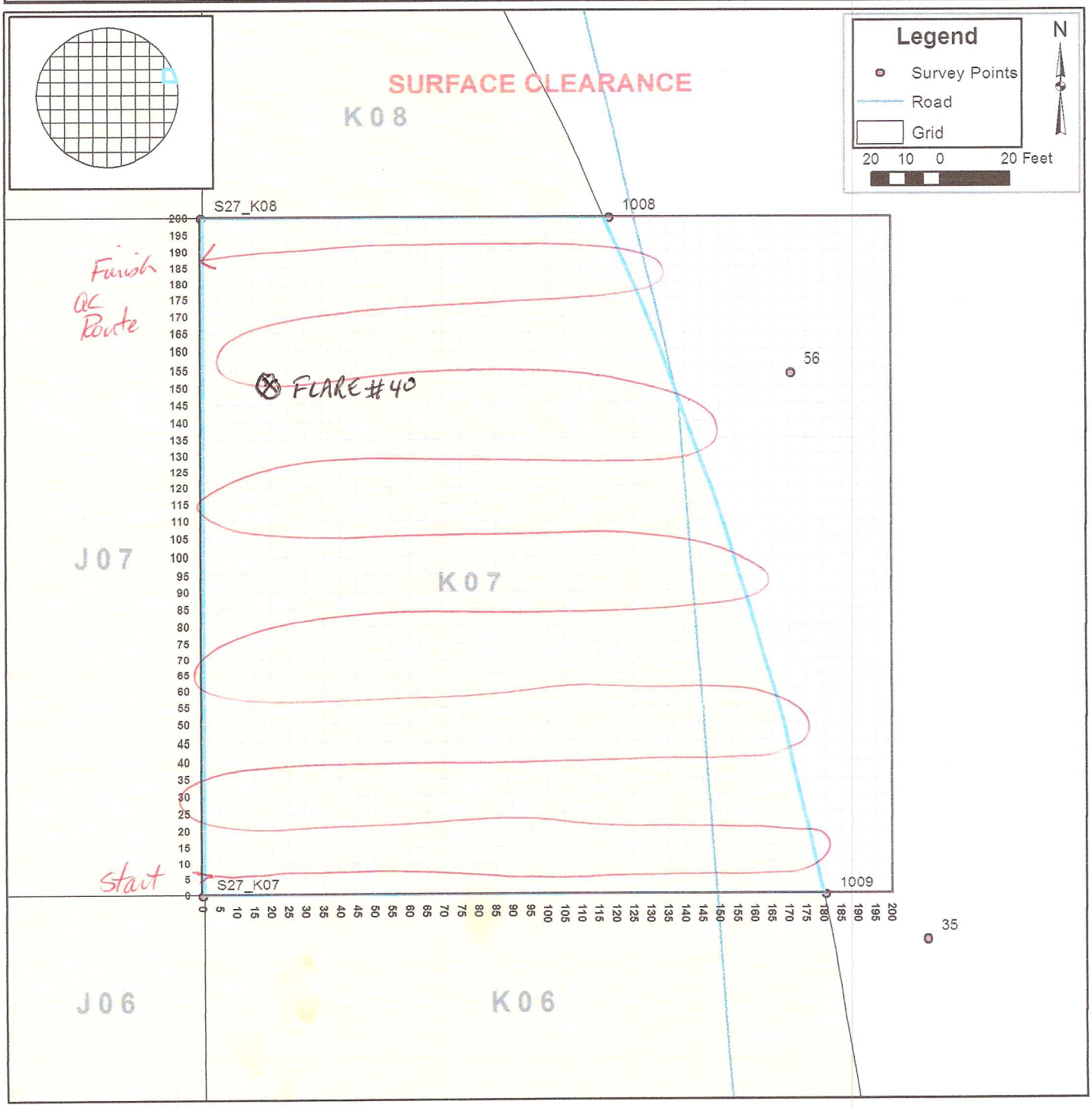
Digs: NA
MEC #: NA
MEC Debris: 120 165
Scrap Metal: 0

Seed:
X: 20'
Y: 152

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099788

S27 K-08 Team : 1 2 3

Date Started: 9-23-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-23-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

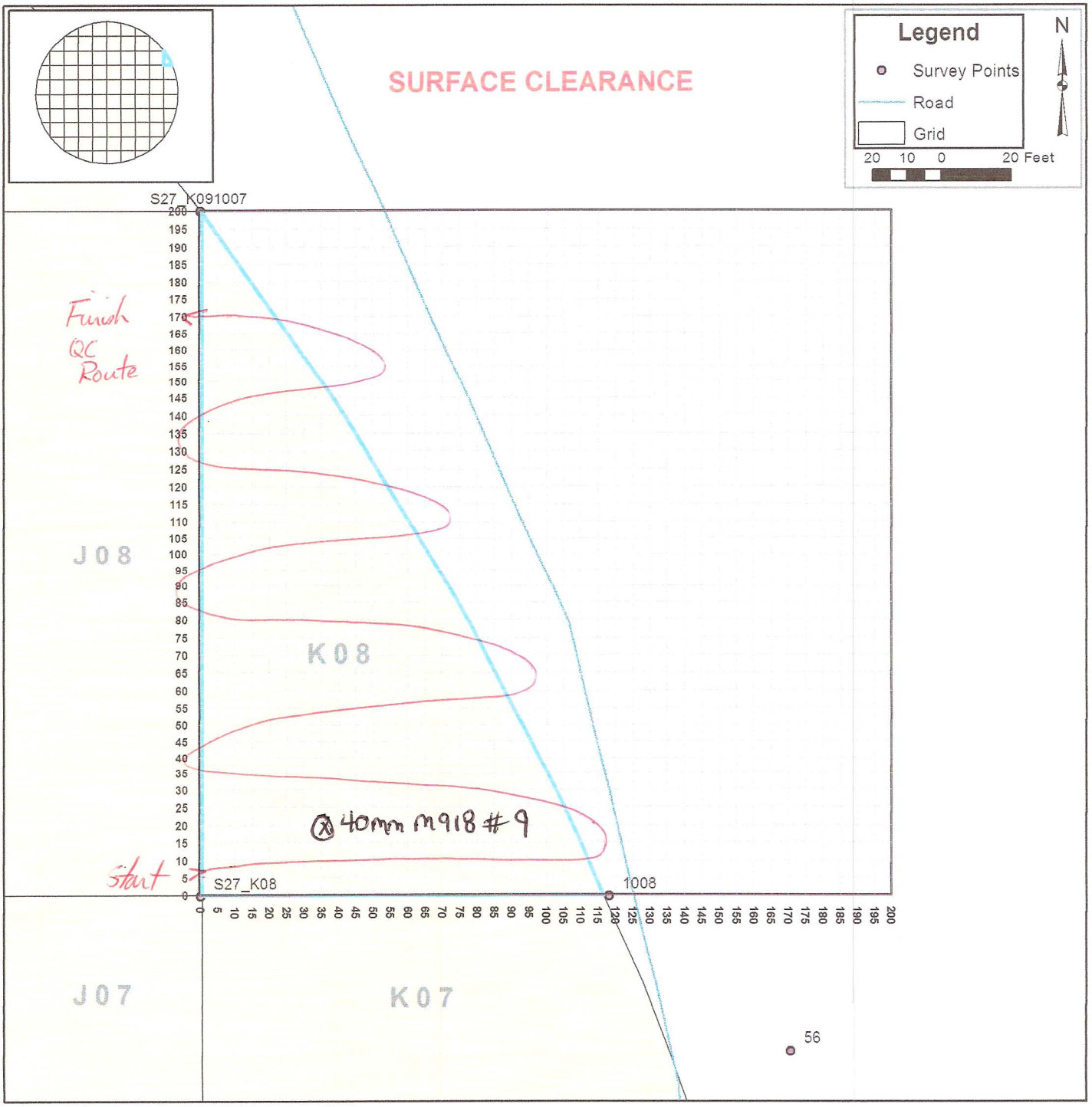
Digs: NA
MEC #: NA
MEC Debris: 10 lbs
Scrap Metal: 0 lbs

Seed:
X: 36'
Y: 21'

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099789

S27 H-09 Team (1) 2 3

Date Started: 9-23-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-23-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

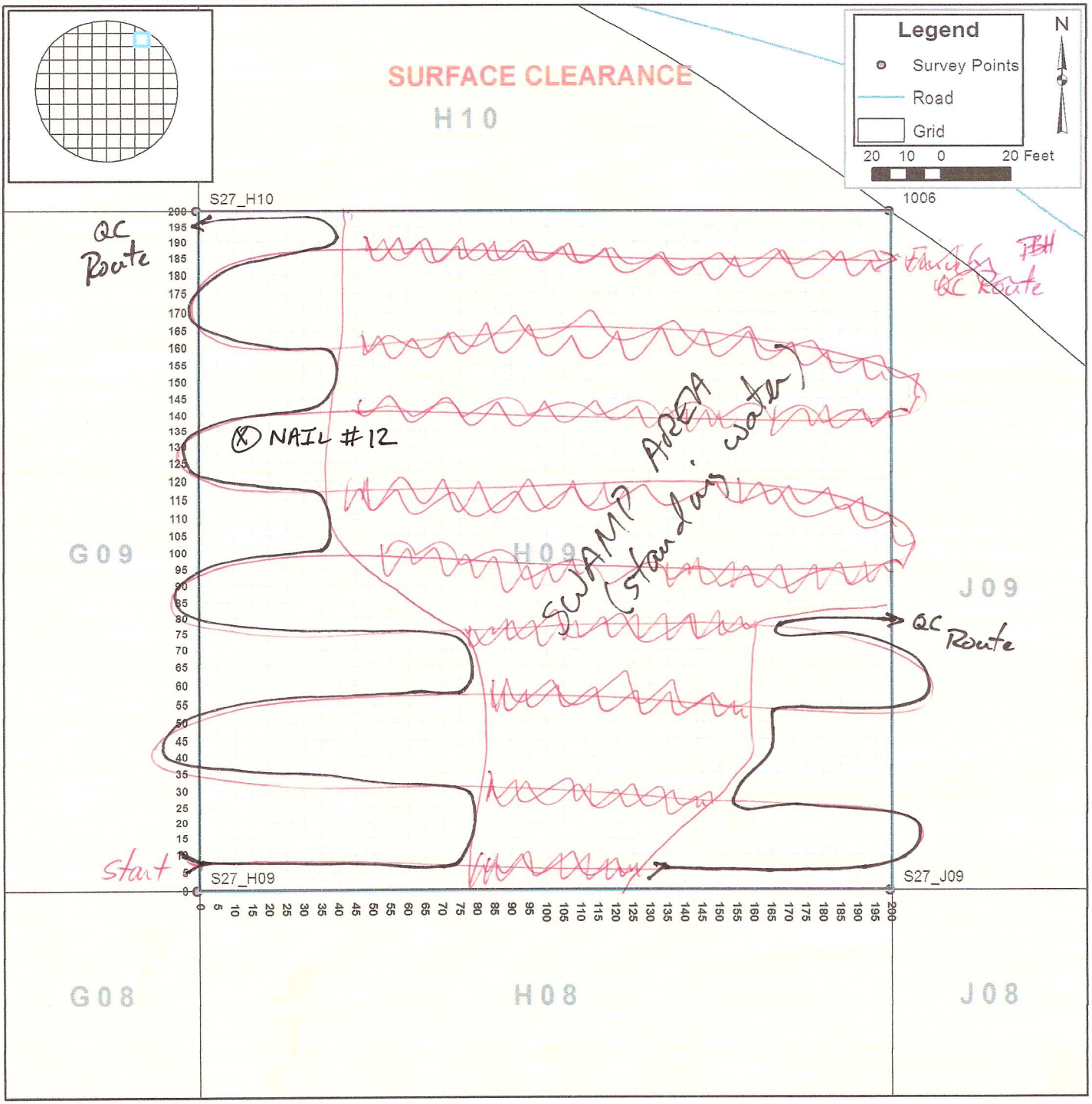
Digs: NA
MEC #: NA
MEC Debris: 75 lbs
Scrap Metal: Ø lbs

Seed:
X: 12'
Y: 134'

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099790

S27 H-10 Team : 1 2 3

Date Started: 9-23-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-23-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA
MEC #: NA
MEC Debris: 15 lbs
Scrap Metal: Ø lbs

Seed:
X: 16'
Y: 26'

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	

Comments:

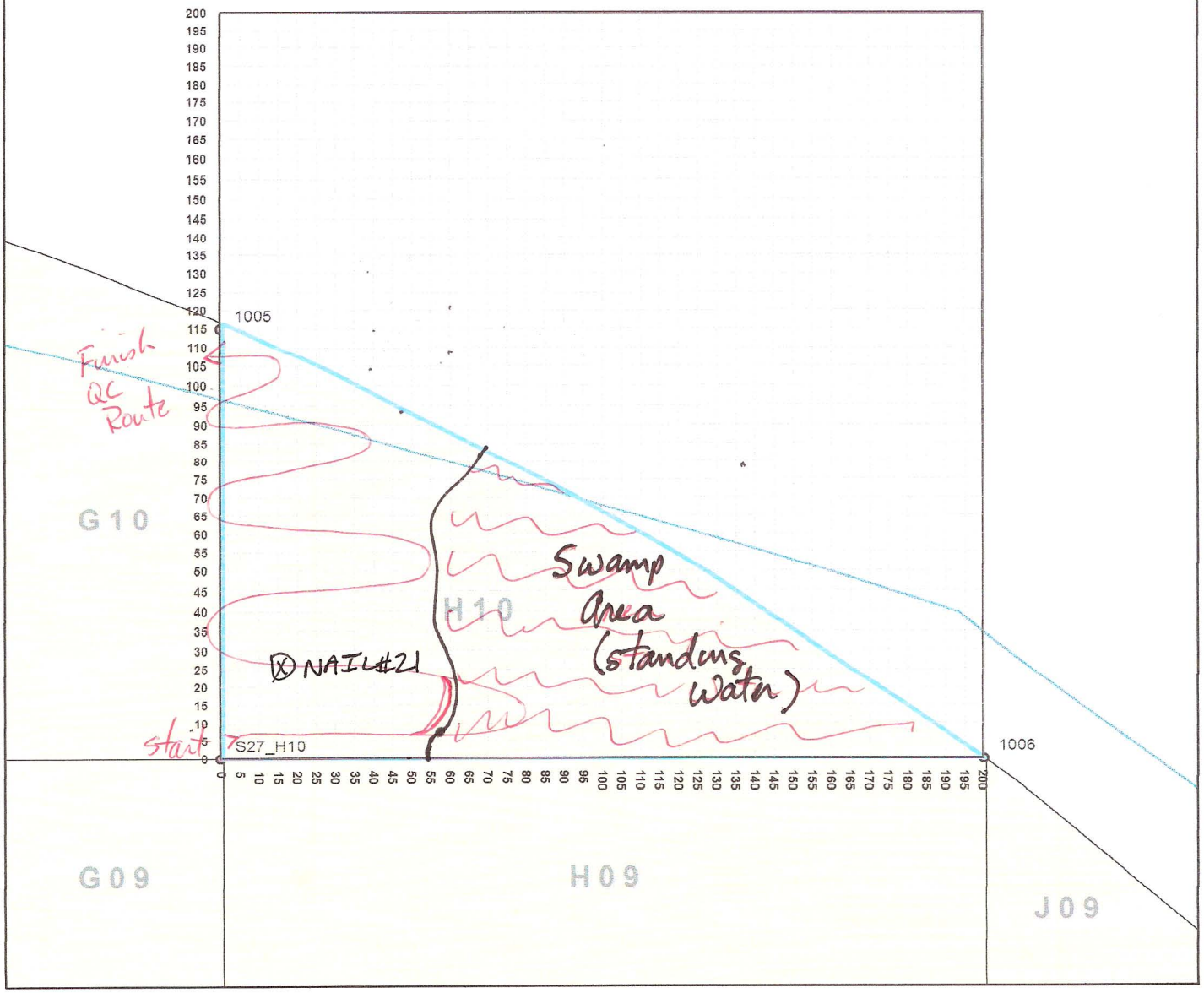
Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099791

S27 J-09 Team ① 2 3

Date Started: 9-23-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-23-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

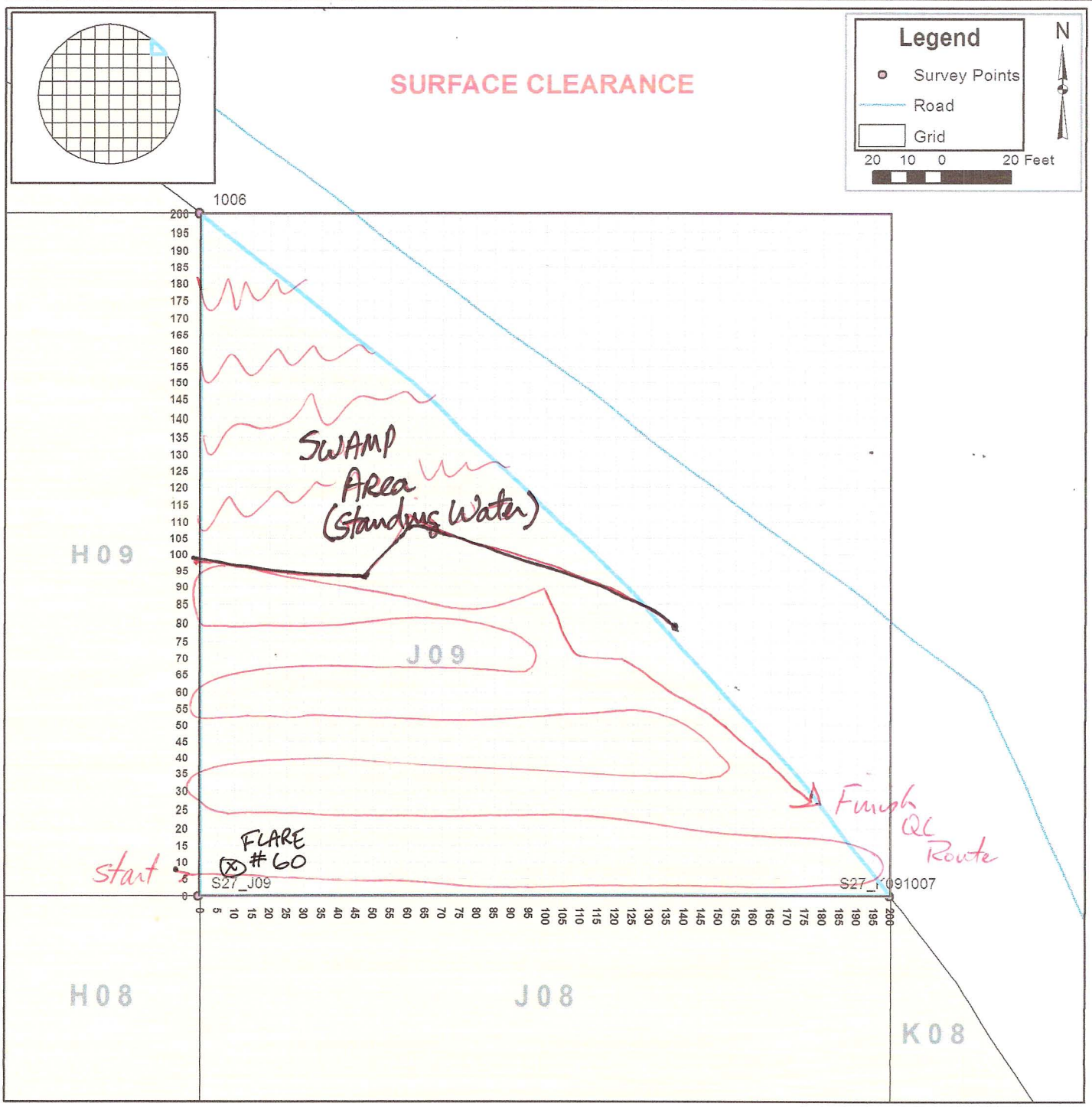
Digs: NA
MEC #: NA
MEC Debris: 35165
Scrap Metal: Ø 165

Seed:
X: 8'
Y: 8'

	P	F	Date
QC :	☒	☐	9/24/08
QA :	☒	☐	

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099792

S27 G-04

Team : 1 (2) 3

Date Started: 9-23-08

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-24-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 3.50 lb

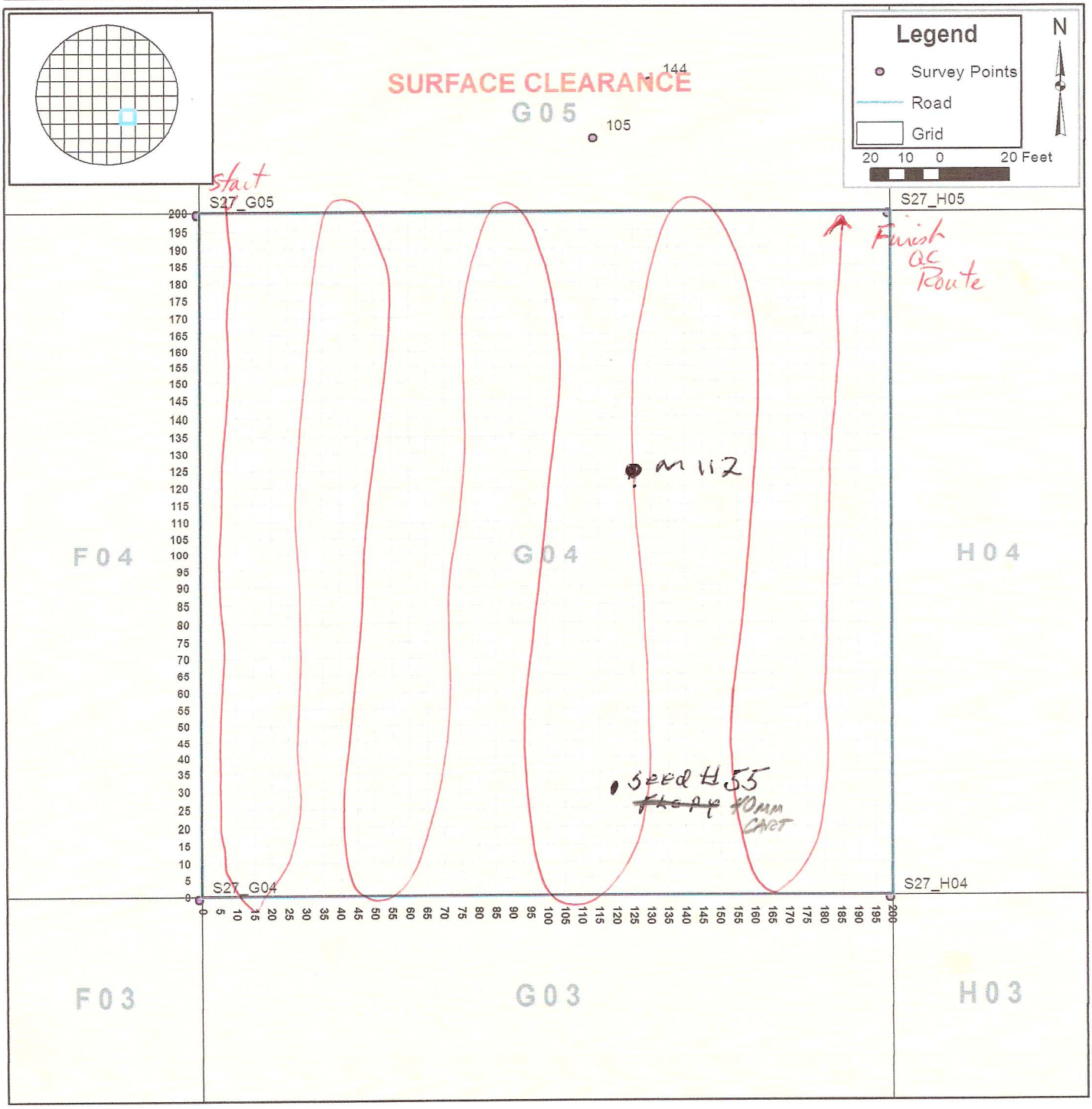
Scrap Metal: —

Seed:
X: 120
Y: 30

	P	F	Date
QC :	☒	☐	9/25/08
QA :	☒	☐	9/25/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	8	M112	



00099793

S27 E-04

Team : 1 (2) 3

Date Started: 9-24-08

Date Surveyed: NA

Date Grubbed: NA

Date Finished: NA 9-24

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: NA

MEC #: NA

MEC Debris: 150

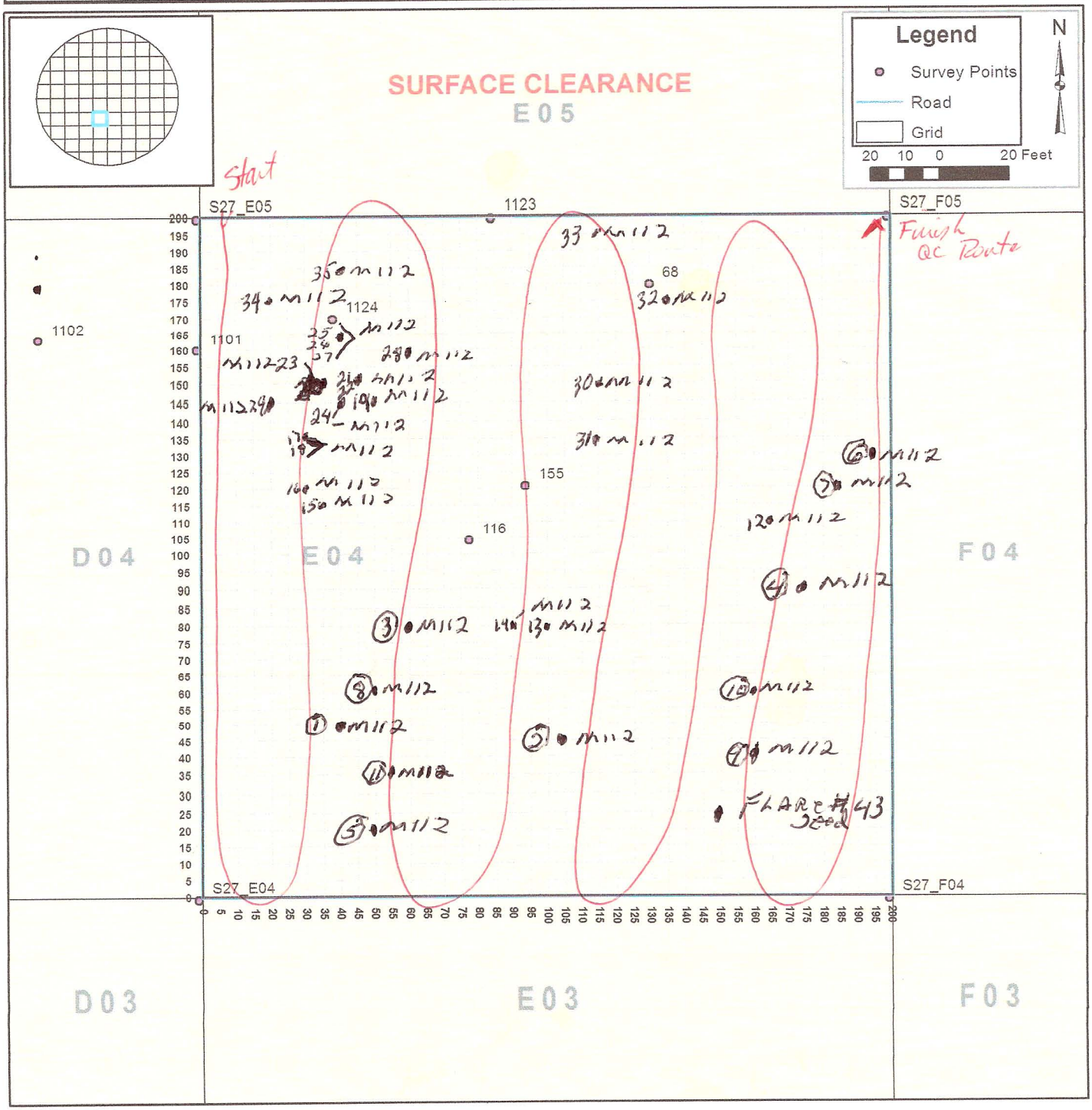
Scrap Metal: —

Seed:
X: 150
Y: 25

	P	F	Date
QC :	☒	☐	9/25/08
QA :	☒	☐	9/25/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099794

S27 G-08 Team : 1 2 3

Date Started: 9-23-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-24-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA
MEC #: 2
MEC Debris: 185 lbs
Scrap Metal: ϕ lbs

Seed:
X: 167'
Y: 39'

	P	F	Date
QC :	☒	☐	9/25/08 ✓
QA :	☒	☐	9/25/08 ✓

Comments:

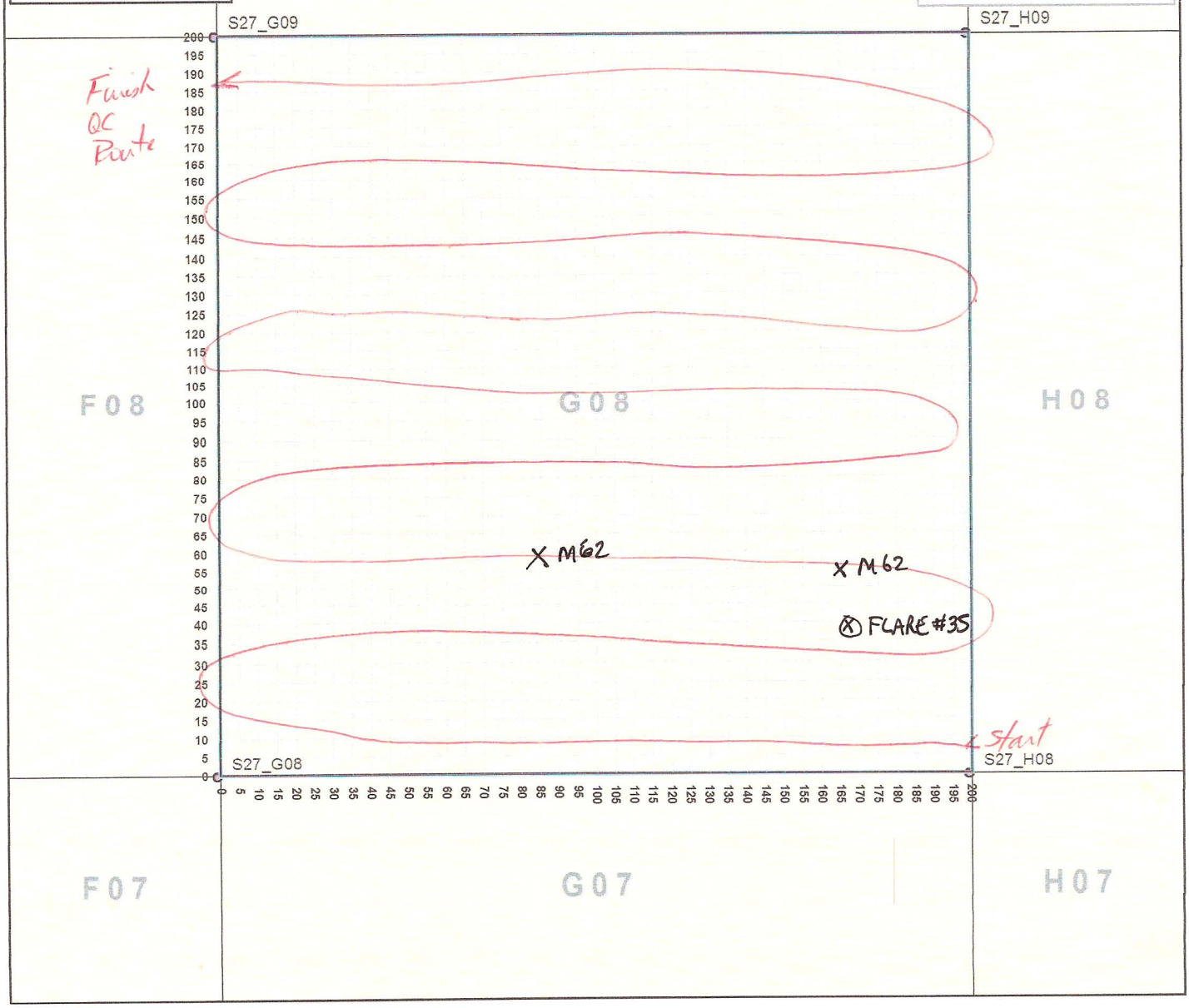
Qty	Depth(in)	Nomenclature	Filler
2	0"	M62 FLARE	Illuminant

SURFACE CLEARANCE
G09

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099795

S27 G-09 Team (1) 2 3

Date Started: 9-24-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-24-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

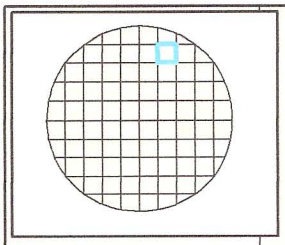
Digs: NA
MEC #: NA
MEC Debris: 165 lbs
Scrap Metal: Ø lbs

Seed:
X: 16'
Y: 144'

	P	F	Date
QC :	☒	☐	9/25/08
QA :	☒	☐	9/25/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



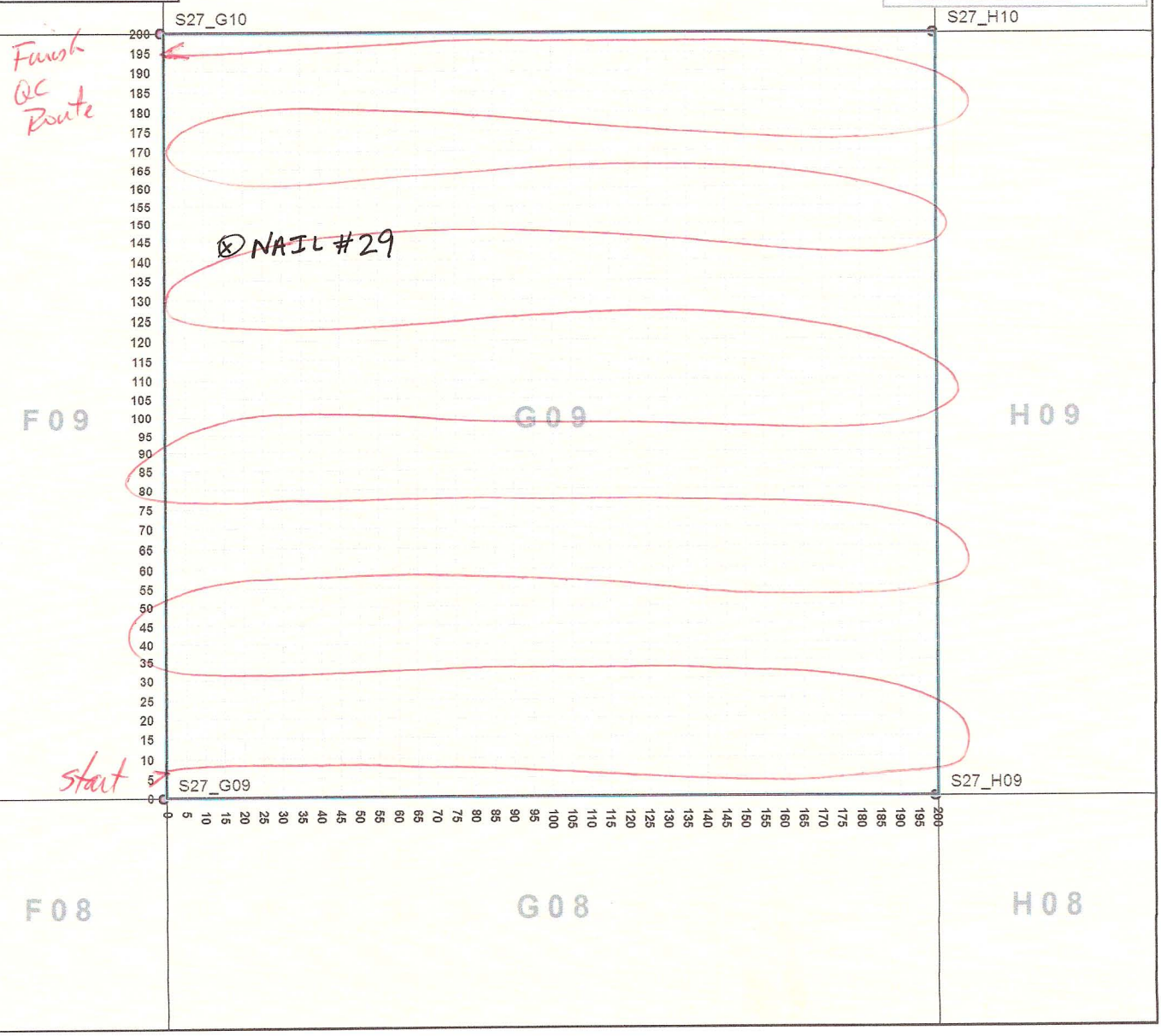
SURFACE CLEARANCE

G10

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099796

S27 G-10 Team (1) 2 3

Date Started: 9-24-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-24-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

Digs: NA
MEC #: NA
MEC Debris: Ø lbs
Scrap Metal: Ø lbs

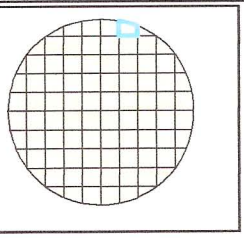
Seed:
X: 25'
Y: 36'

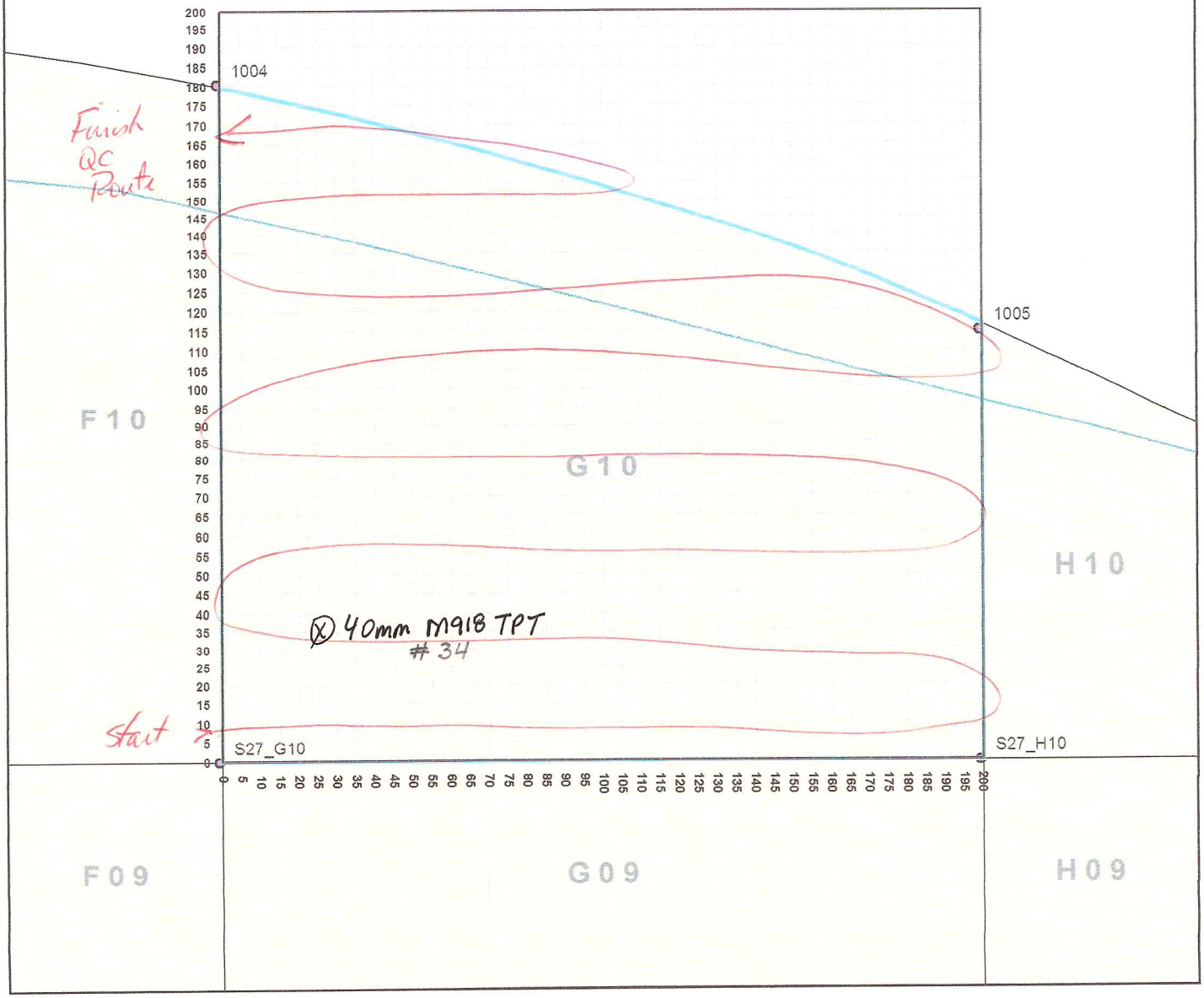
	P	F	Date
QC :	☒	☐	9/25/08
QA :	☒	☐	9/25/08

Comments:

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE





00099797

S27 H-07 Team (1) 2 3

Date Started: 9-24-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: _____

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

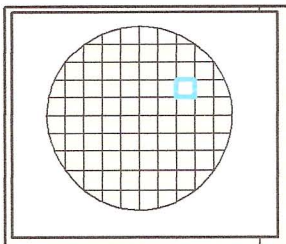
Digs: NA
MEC #: 2
MEC Debris: 145 lbs
Scrap Metal: Ø lbs

Seed:
X: 26'
Y: 147'

	P	F	Date
QC :	☒	☐	9/25/08 ✓
QA :	☒	☐	9/25/08 ✓

Comments: _____

Qty	Depth(in)	Nomenclature	Filler
2	0"	M62 FLARE	Illuminant

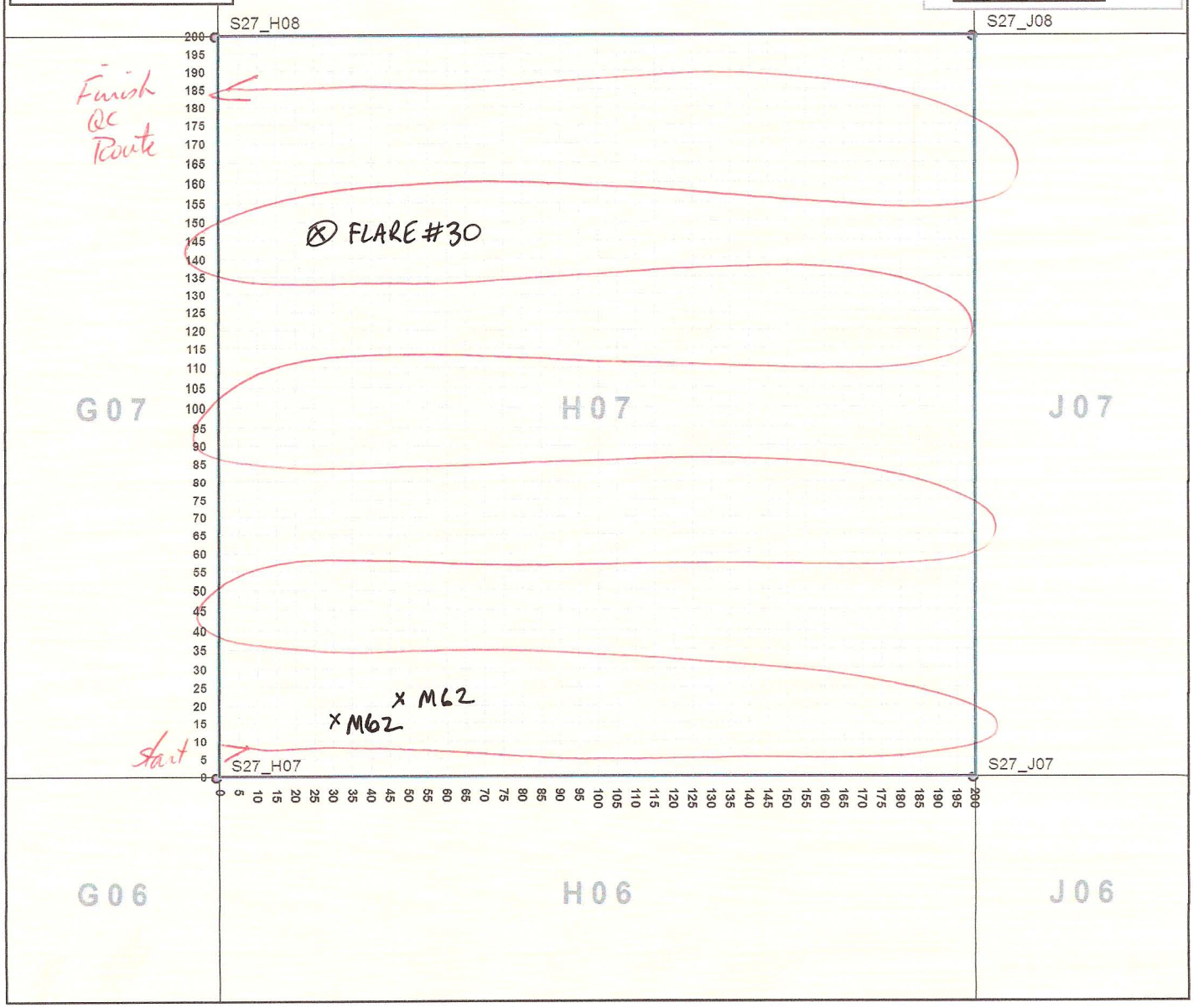


SURFACE CLEARANCE
H08

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099798

S27 J-07

Team (1) 2 3

Date Started: 9-24-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-24-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 90 lbs

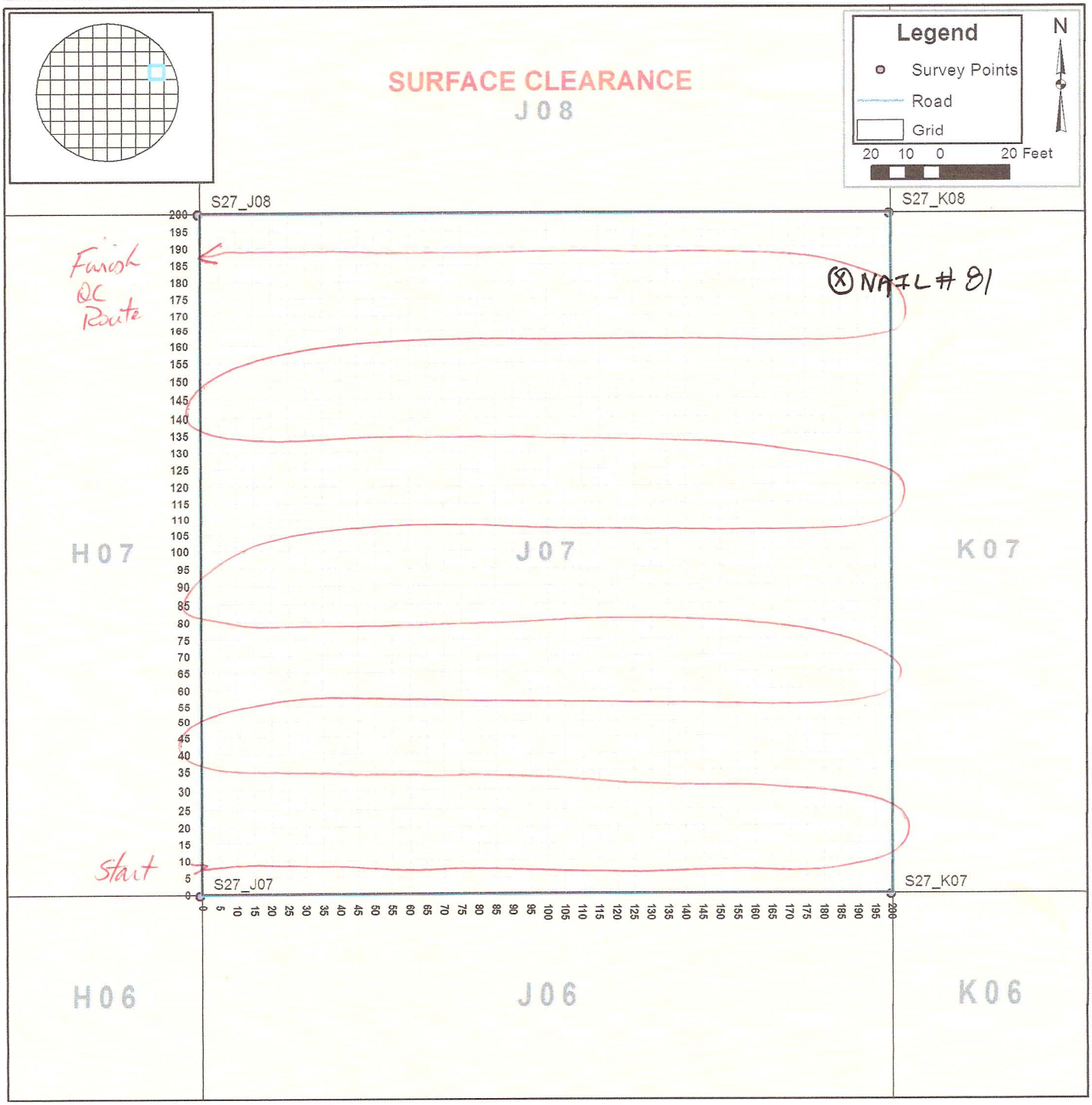
Scrap Metal: 0 lbs

Seed:
X: 185'
Y: 181'

	P	F	Date
QC:	☒	☐	9/25/08
QA:	☒	☐	9/25/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099799

S27 A-09 Team (1) 2 3 Soil:

Date Started: 9-25-2008 ☐-Clay

Date Surveyed: NA ☐-Limestone

Date Gru:bbed: NA ☐-Loam

Date Finished: 9-25-2008 ☒-Sand

Digs: NA

MEC #: NA

MEC Debris: 0 lbs

Scrap Metal: 0 lbs

Seed:

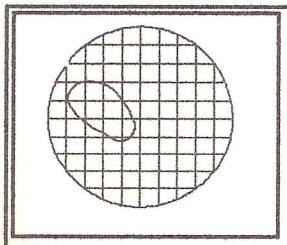
X: NA

Y: NA

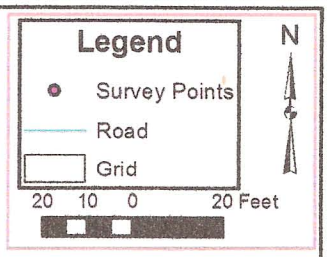
	P	F	Date
QC :	☒	☐	9/25/08
QA :	☒	☐	9/25/08

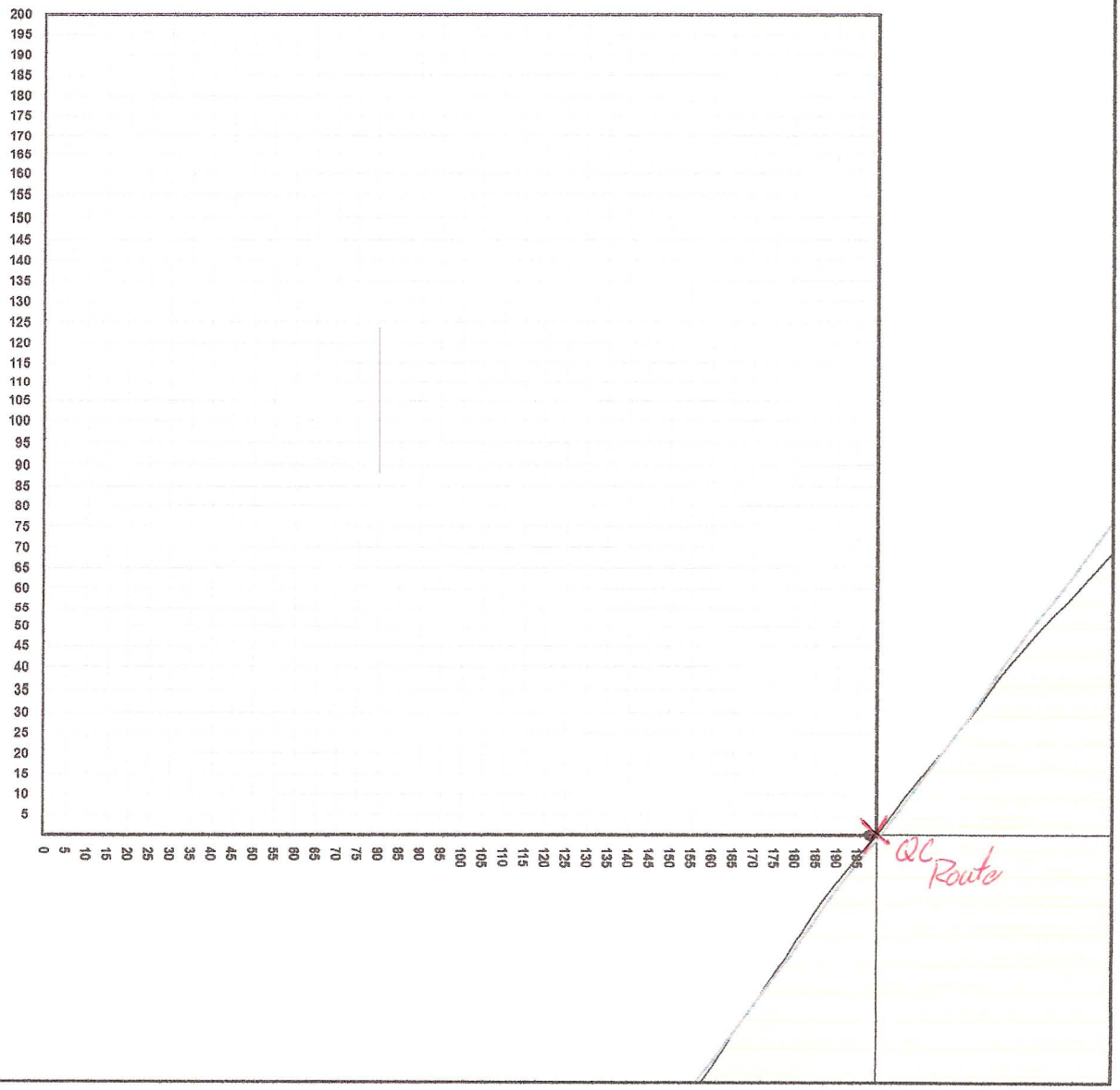
Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE





00099800

S27 B-10 Team : 1 2 3

Date Started: 9-25-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-25-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

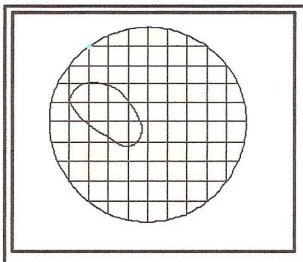
Digs: NA
MEC #: NA
MEC Debris: Ø lbs
Scrap Metal: Ø lbs

Seed:
X: NA
Y: NA

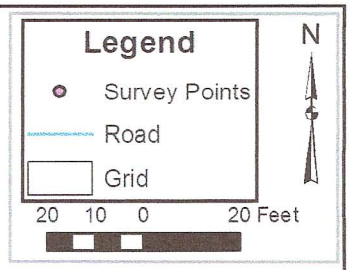
	P	F	Date
QC :	☒	☐	9/25/08
QA :	☒	☐	9/25/08

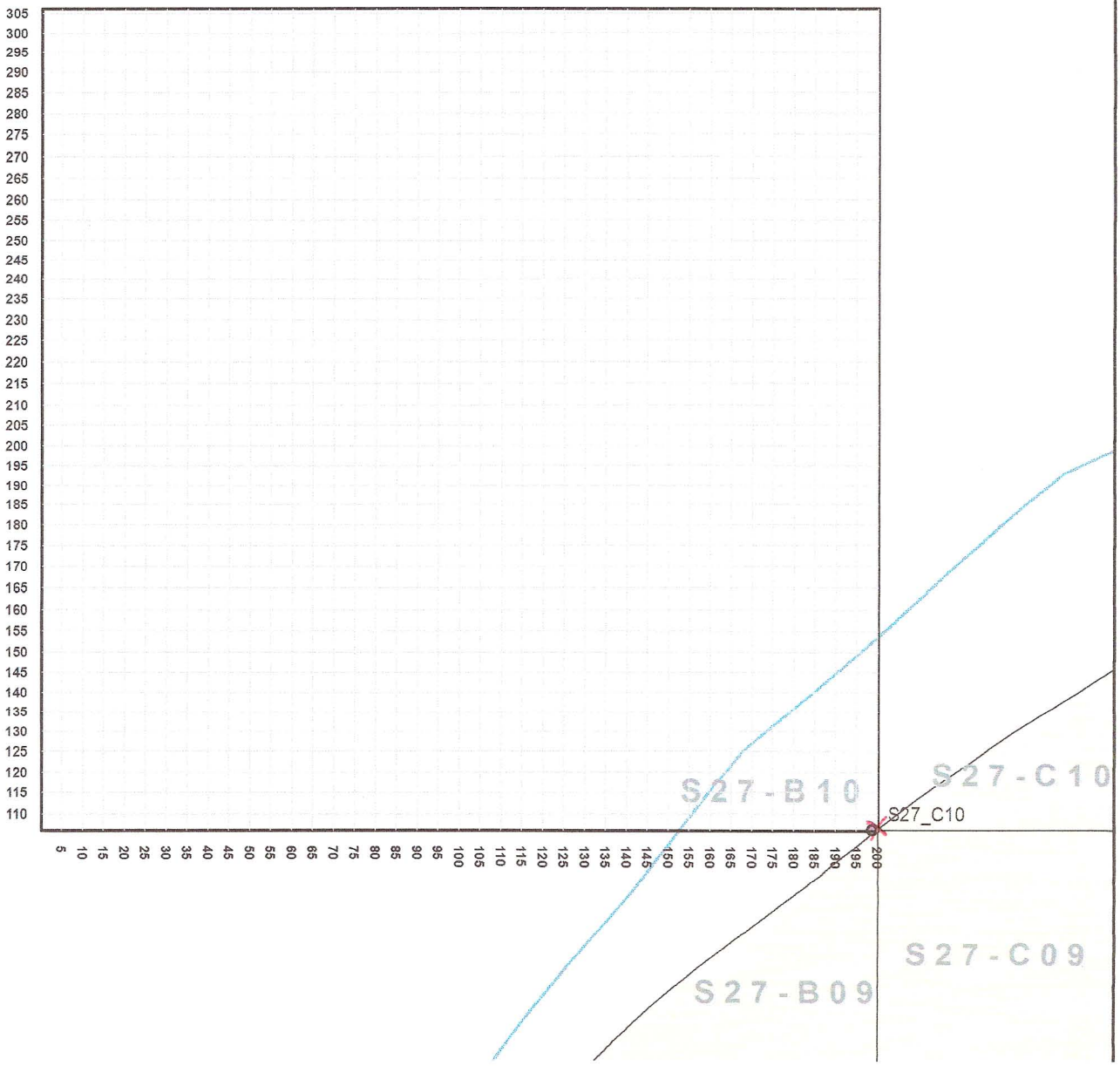
Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE





00099801

S27 E-05 Team: (1) 2 3

Date Started: 11/4/2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 11/7/2008

Soil:
- [X] -Clay
- [ ] -Limestone
- [ ] -Loam
- [ ] -Sand

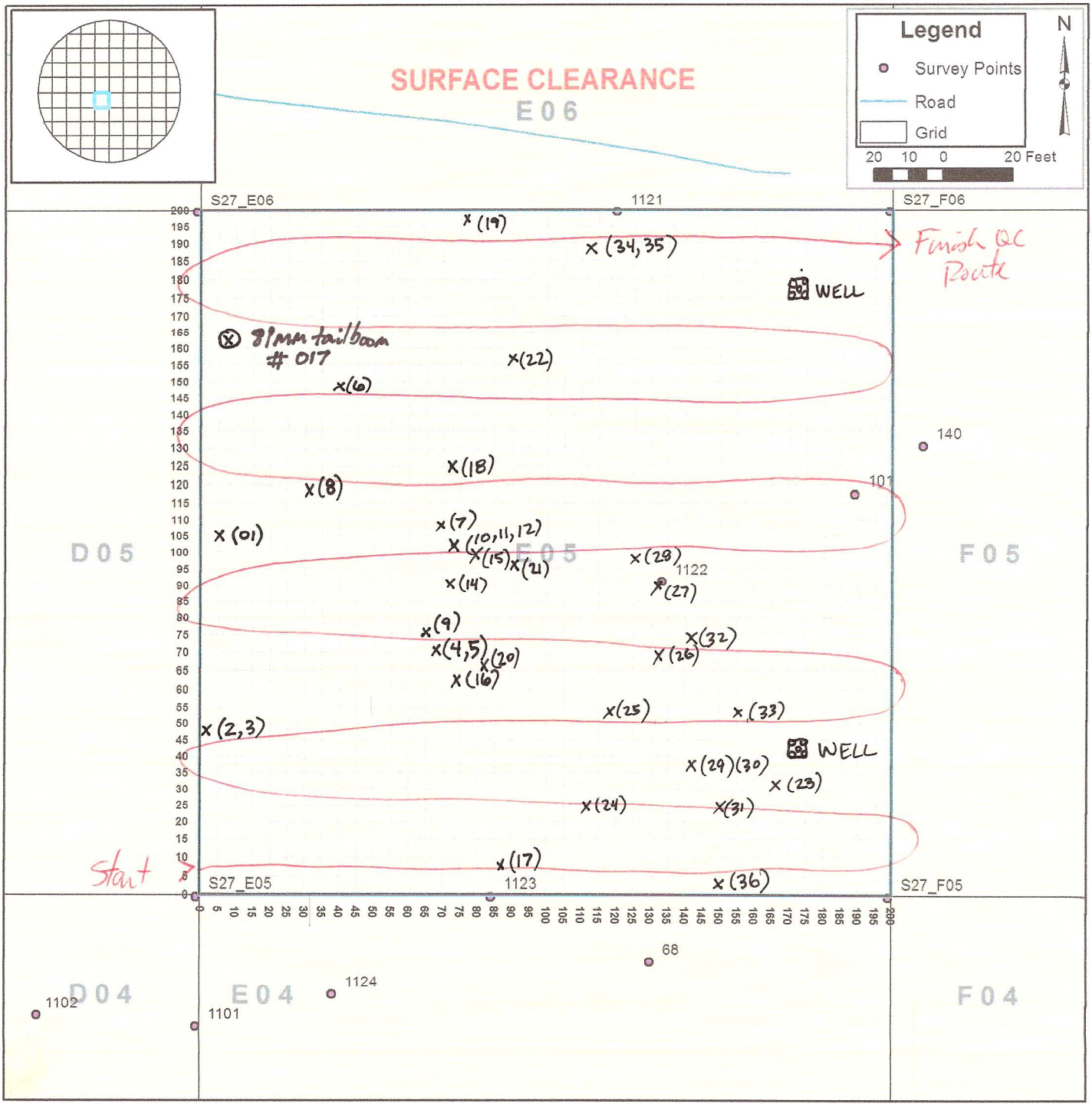
Digs: 5,213 ✓
MEC #: 36
MEC Debris: 825 lbs
Scrap Metal: 190 lbs

Seed:
X: 8'
Y: 163'
Z: 1'

	P	F	Date
QC:	[X]	[ ]	11/12/08 ✓
QA:	[X]	[ ]	11/13/08 ✓

Comments:

Qty	Depth(in)	Nomenclature	Filler
Ø3	0"	M112 FLARE	~~PHOTOFLASH~~ illuminate
24	2"	M112 FLARE	~~PHOTOFLASH~~ illuminat
Ø9	3"	M112 FLARE	~~PHOTOFLASH~~ illuminate



00099802

S27 D-04

Team (1) 2 3

Date Started: 9-24-08

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 10-1-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: 11 Items

MEC Debris: 125 lbs

Scrap Metal: 0 lbs

Seed:

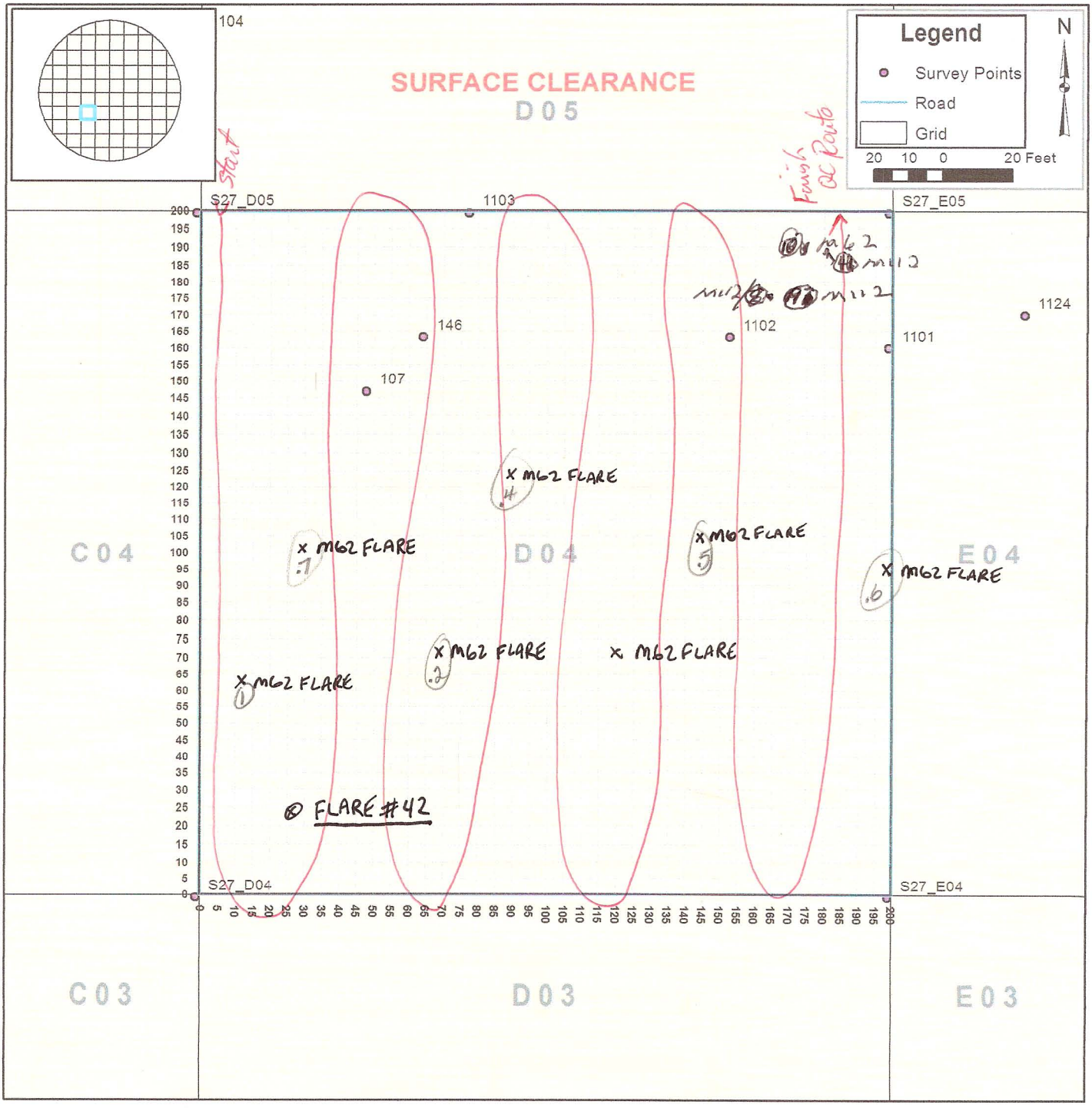
X: 26'

Y: 23'

	P	F	Date
QC:	☒	☐	10/02/08
QA:	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	M112 (.8)	Illuminant
1	0"	M112 (.9)	Illuminant
1	0"	M62 (.10)	Illuminant
1	0"	M112 (.11)	Illuminant
7	0"	M62 FLARES (.1-.7)	Illuminant



00099803

S27 D06

Team (1) 2 3

Date Started: 10/30/2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 11/3/2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

Digs: 4,332 ✓
MEC #: 21 ✓
MEC Debris: 1,030 lbs
Scrap Metal: 65 lbs

Seed:
X: 1'
Y: 1'
Z: 3'

	P	F	Date
QC:	☒	☐	11/5/08 ✓
QA:	☒	☐	11/6/08

Comments:

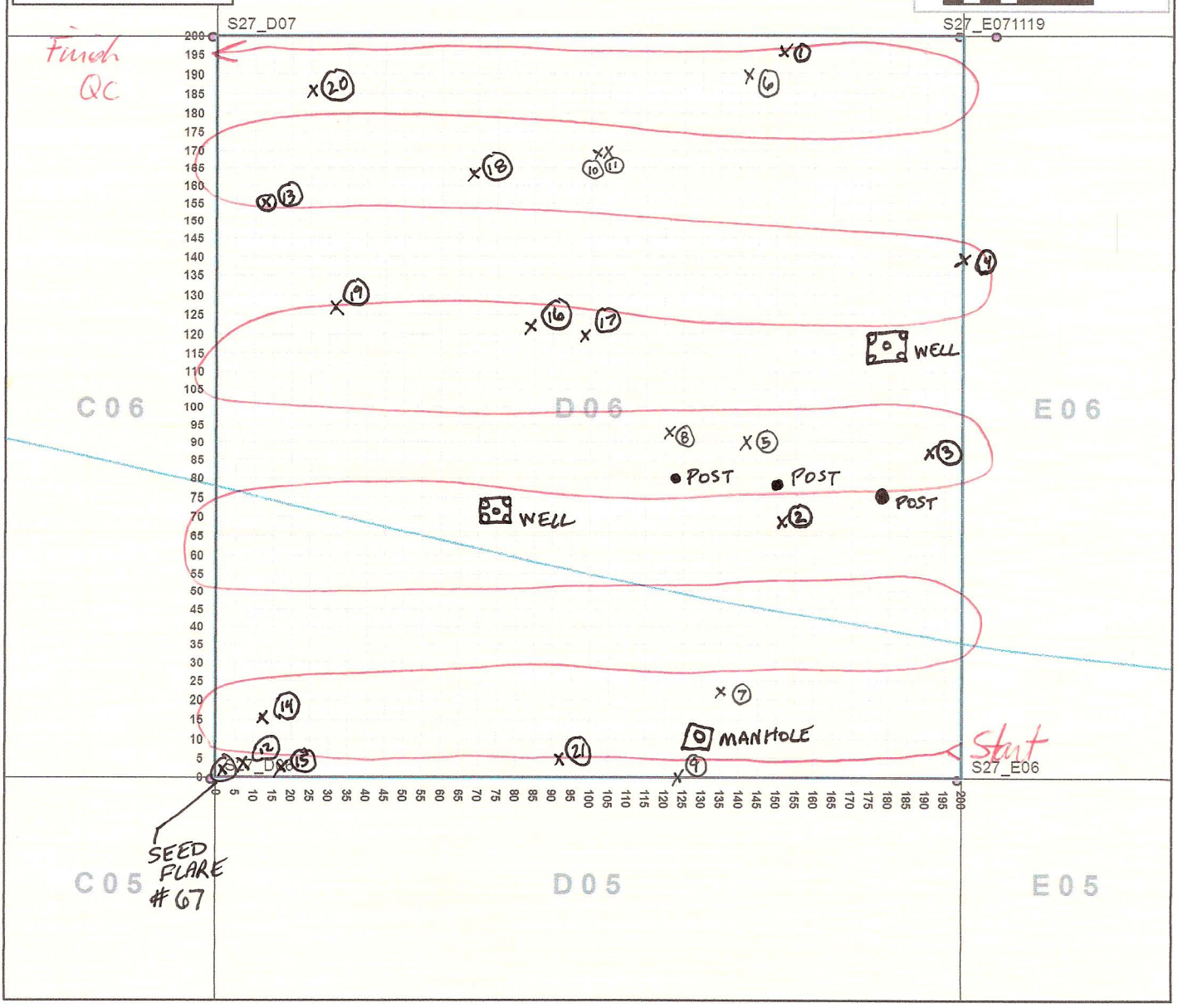
Qty	Depth(in)	Nomenclature	Filler
15	2"	M112 FLARE	Illuminant
6	3"	M112 FLARE	Illuminant

SURFACE CLEARANCE
D07

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099804

S27 G-02

Team : 1 2 3

Date Started: 9-16-08

Date Surveyed: N A

Date Gru:bbed: N A

Date Finished: 9-16-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

Digs: N A

MEC #:

MEC Debris: 150

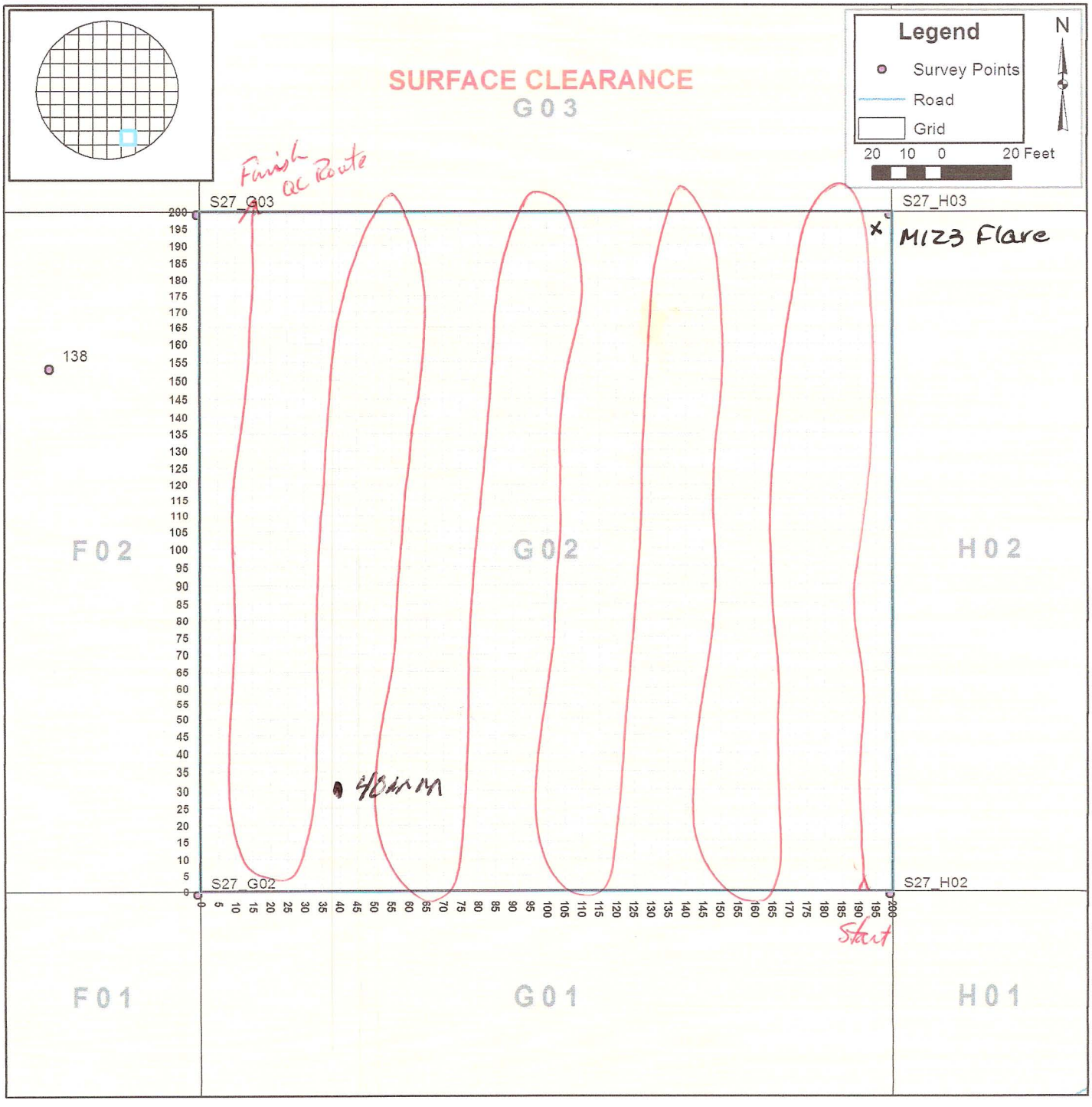
Scrap Metal: —

Seed:
X: 40
Y: 30

	P	F	Date
QC :	☒	☐	9/17/08
QA :	☒	☐	9/17/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	M123 Flare X195 Y195	illum



00099805

S54 B-06

Team : (1) 2 3

Date Started: 9-4-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-5-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: 01, 02, 03

MEC Debris: 15 lbs

Scrap Metal: Ø lbs

Seed:

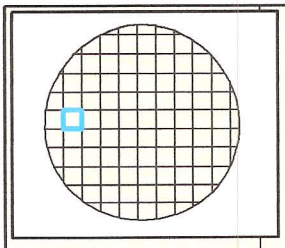
X: 128'

Y: 139'

	P	F	Date
QC :	☒	☐	9/8/08
QA :	☒	☐	9/8/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



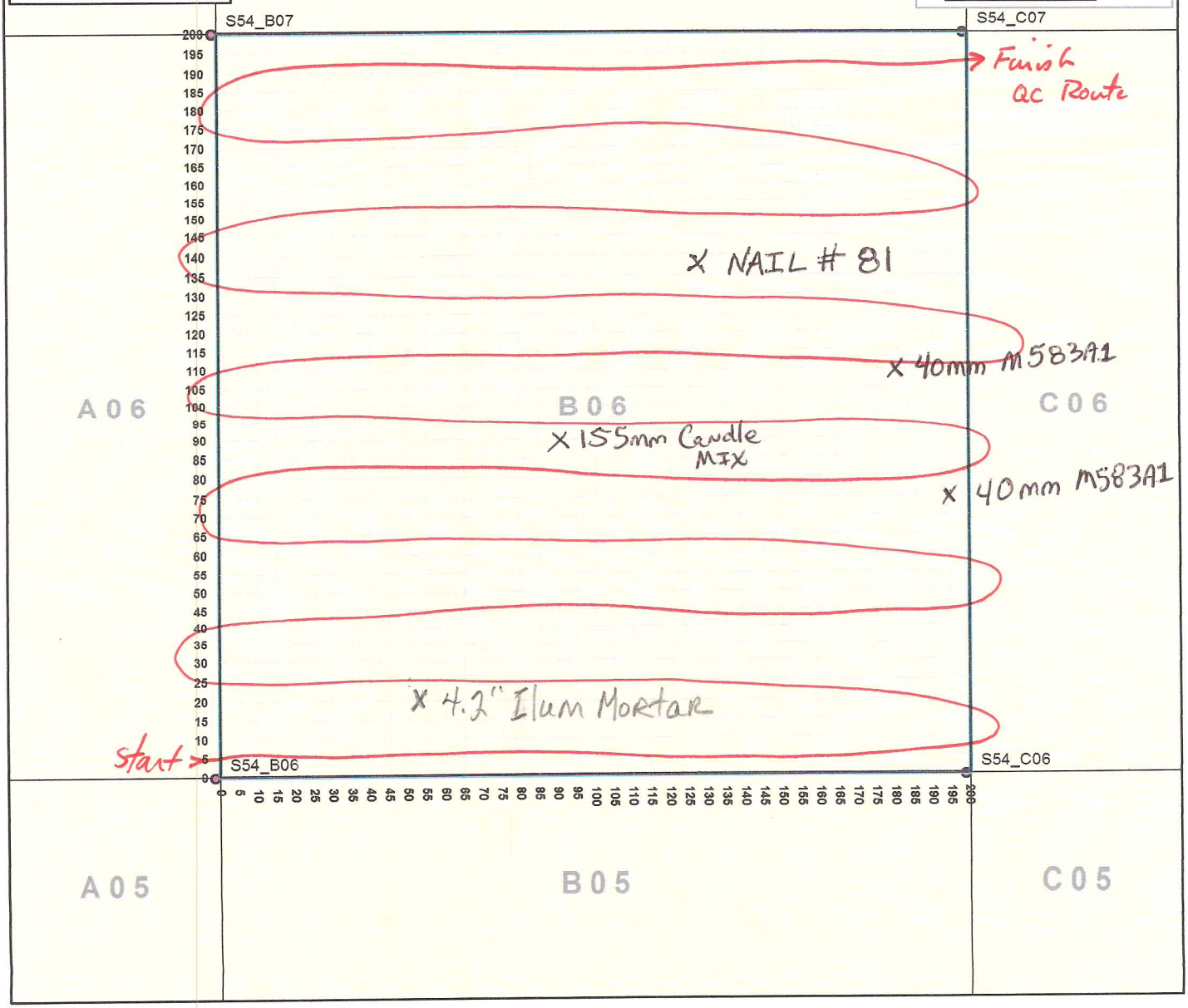
SURFACE CLEARANCE

B 0 7

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099806

S54 B-06

Team : (1) 2 3

Date Started: 9-4-2008

Date Surveryed: NA

Date Gru:bbed: NA

Date Finished: 9-5-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: 01, 02, 03

MEC Debris: 15 lbs

Scrap Metal: Ø lbs

Seed:

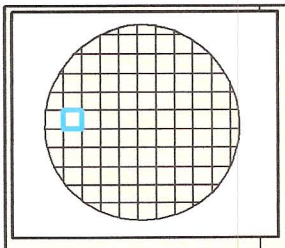
X: 128'

Y: 139'

	P	F	Date
QC :	☒	☐	9/8/08
QA :	☒	☐	9/8/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



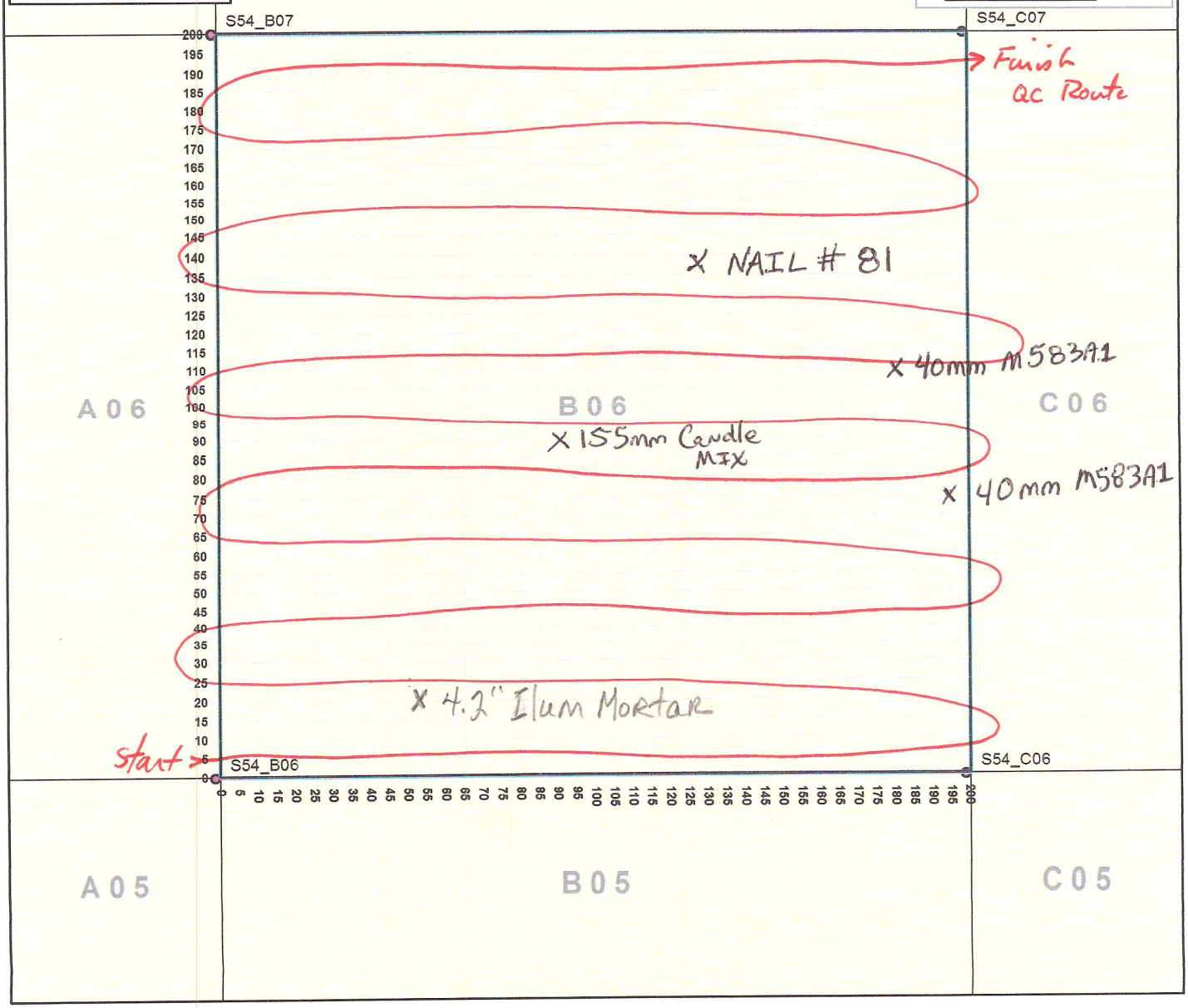
SURFACE CLEARANCE

B 0 7

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099807

S54 C-03 Team : 1 2 (3)

Date Started: 8 Sep 08
Date Surveyed: N/A
Date Gru:bbed:
Date Finished: 8 Sep 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ -Sand

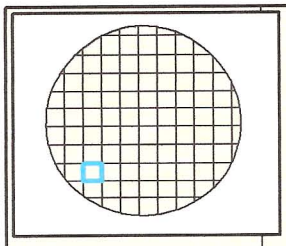
Digs: N/A
MEC #: N/A
MEC Debris: 0.
Scrap Metal: 0.

Seed:
X: 190
Y: 195

	P	F	Date
QC :	☒	☐	9/9/08
QA :	☒	☐	9/9/08

Comments:

Qty	Depth(in)	Nomenclature	Filler

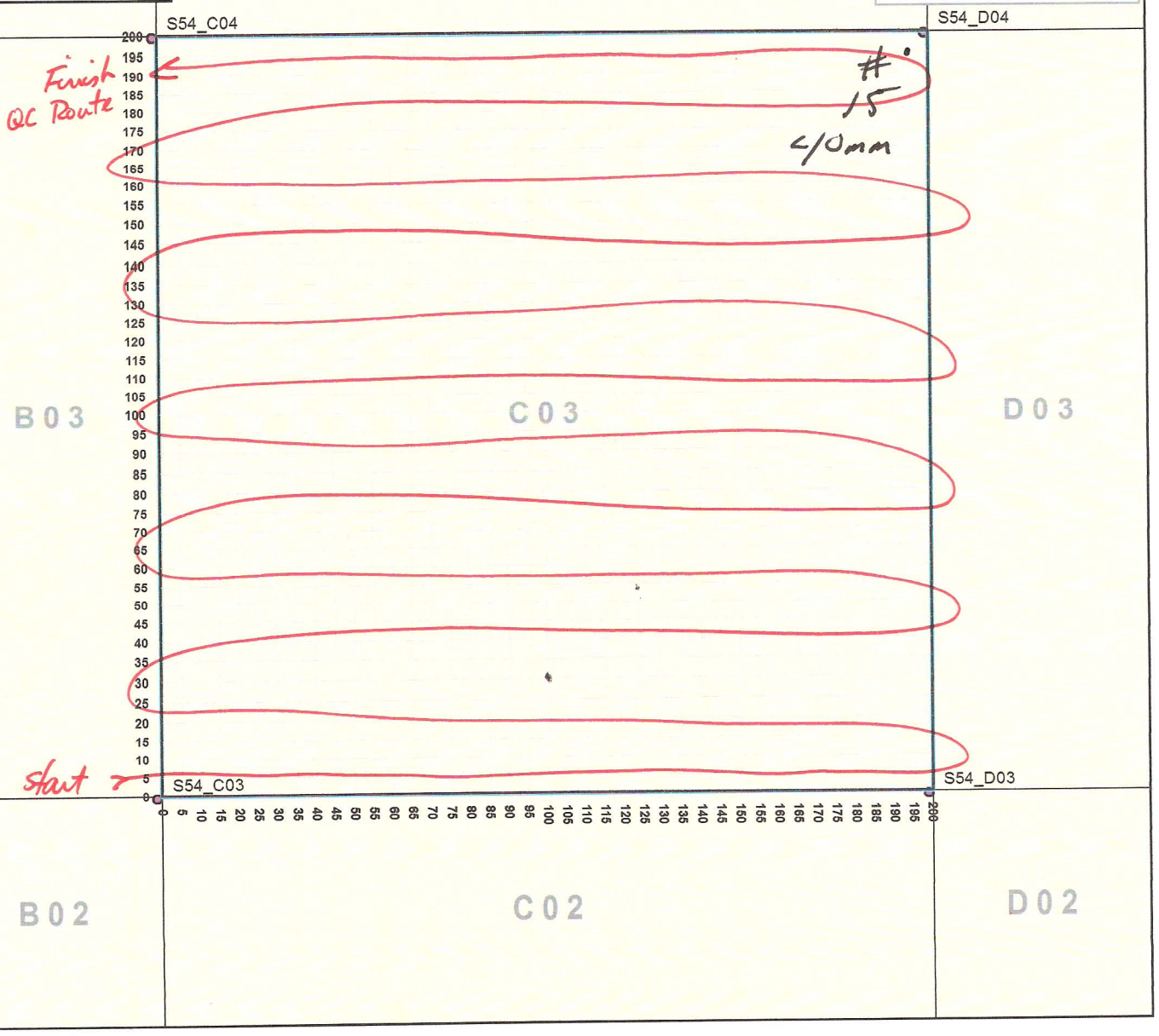


SURFACE CLEARANCE
C 0 4

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099808

EODT DAILY TEAM PRODUCTION REPORT
SURFACE SWEEPS

DATE: 8 Sep 2008	**TEAM:** 3
SITE: LHAAP 54	**Contract:** W912DY-04-0018
Task Order#: 0014 **Project #:** K06TX000503	**Mag Used:** Whites

Grid Data

Grid #	Location (X,Y) Seed	Pounds MEC Scrap	Pounds Non-MEC Scrap
C02	X 100 Y 27	5	100
C03	X 190 Y 198	~~190~~	~~198~~
C04	X 185 Y 20	10	175
C05	X 190 Y 175	10	5
C06	X 195 Y 15	20	5
C07	X 198 Y 198	5	5

Live MEC/MPPEH

Grid #	Quantity	Item Description / Condition	Location	Disposition	Photo

*** Live ordnance is recorded on the Grid Sheet Ordnance Log.**

Remarks:

00099809

S54 E-06

Team : 1 2 3

Date Started: 27AUG08

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: ~~27AUG08~~ 15SEP08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 80 lbs

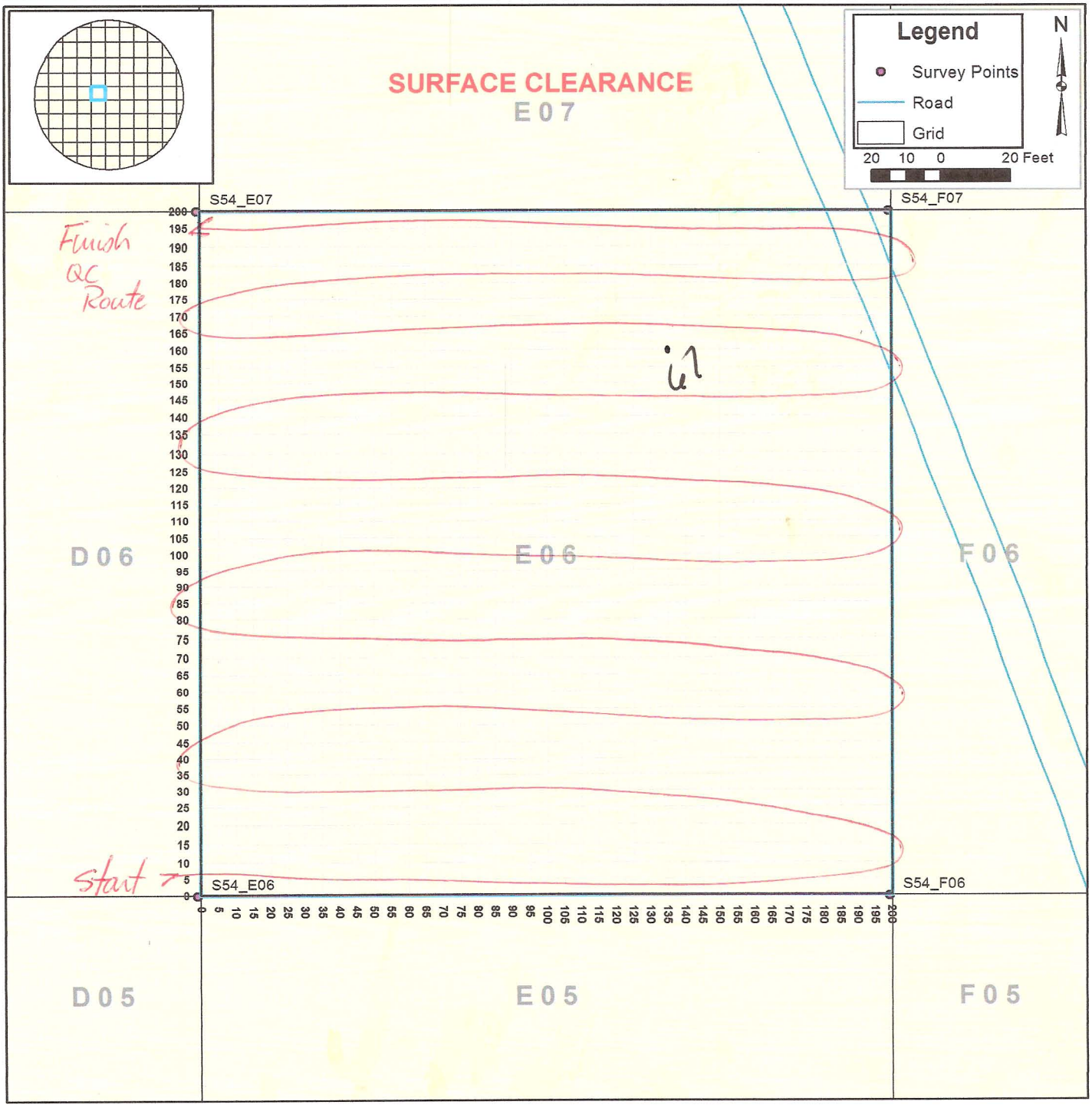
Scrap Metal: 170 lbs

Seed:
X: 135'
Y: 160'

	P	F	Date
QC :	☒	☐	9/16/08
QA :	☒	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099810

S54 F-05

Team (1) 2 3

Date Started: 9-15-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-15-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

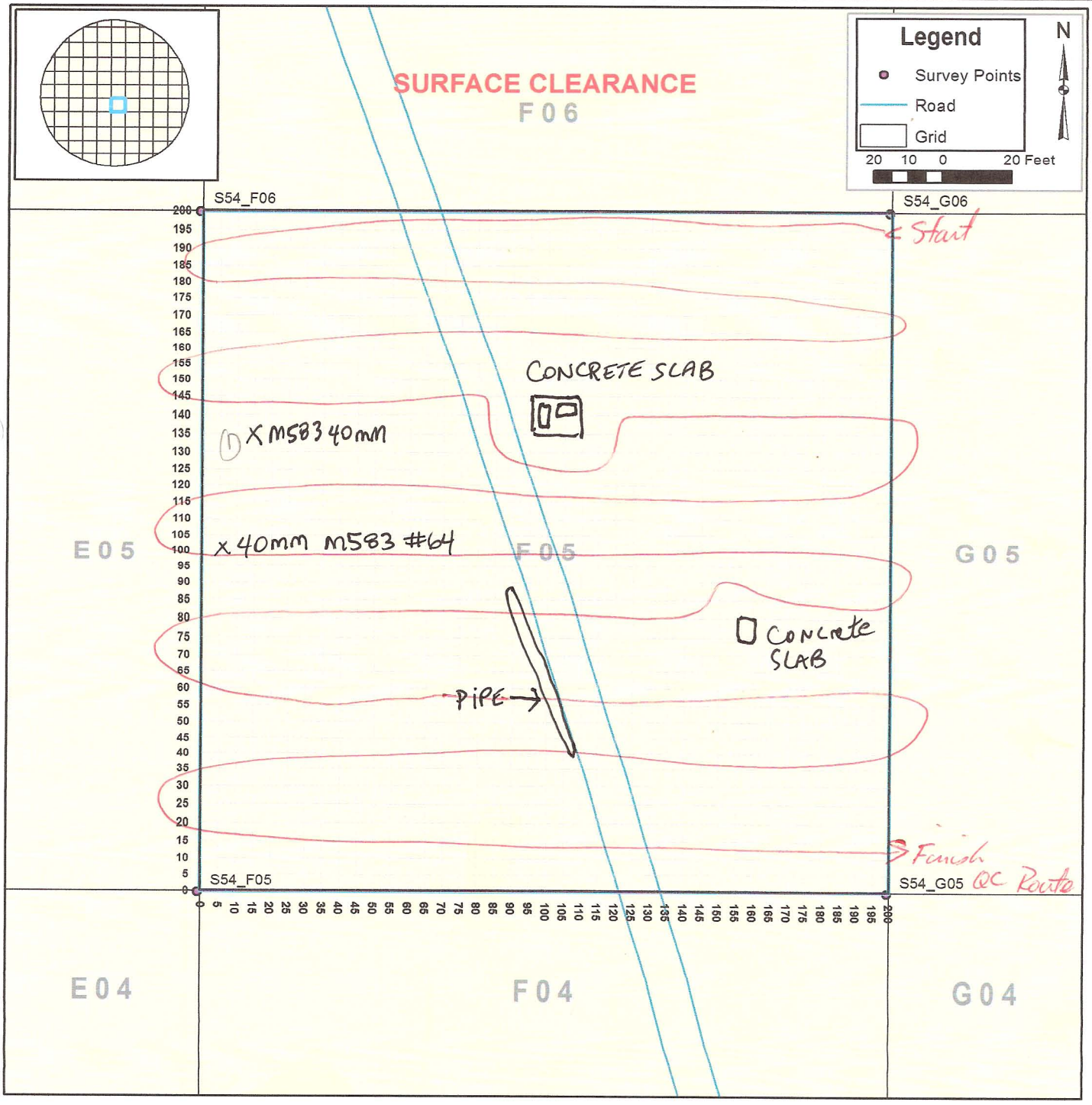
Digs: NA
MEC #: NA
MEC Debris: 75 lbs
Scrap Metal: 200 lbs

Seed:
X: 6'
Y: 101'

	P	F	Date
QC :	☒	☐	9/16/08
QA :	☒	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	M583 40mm	Aluminum



00099811

S54 F-07

Team : (1) 2 3

Date Started: 9-11-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-15-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 260 lbs

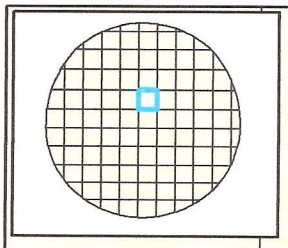
Scrap Metal: 150 lbs

Seed:
X: 160'
Y: 100'

	P	F	Date
QC :	☒	☐	9/16/08
QA :	☒	☐	9/16/08

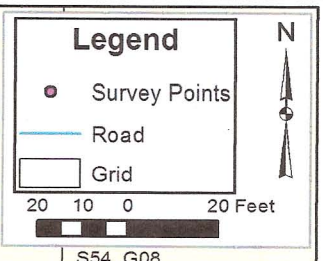
Comments:

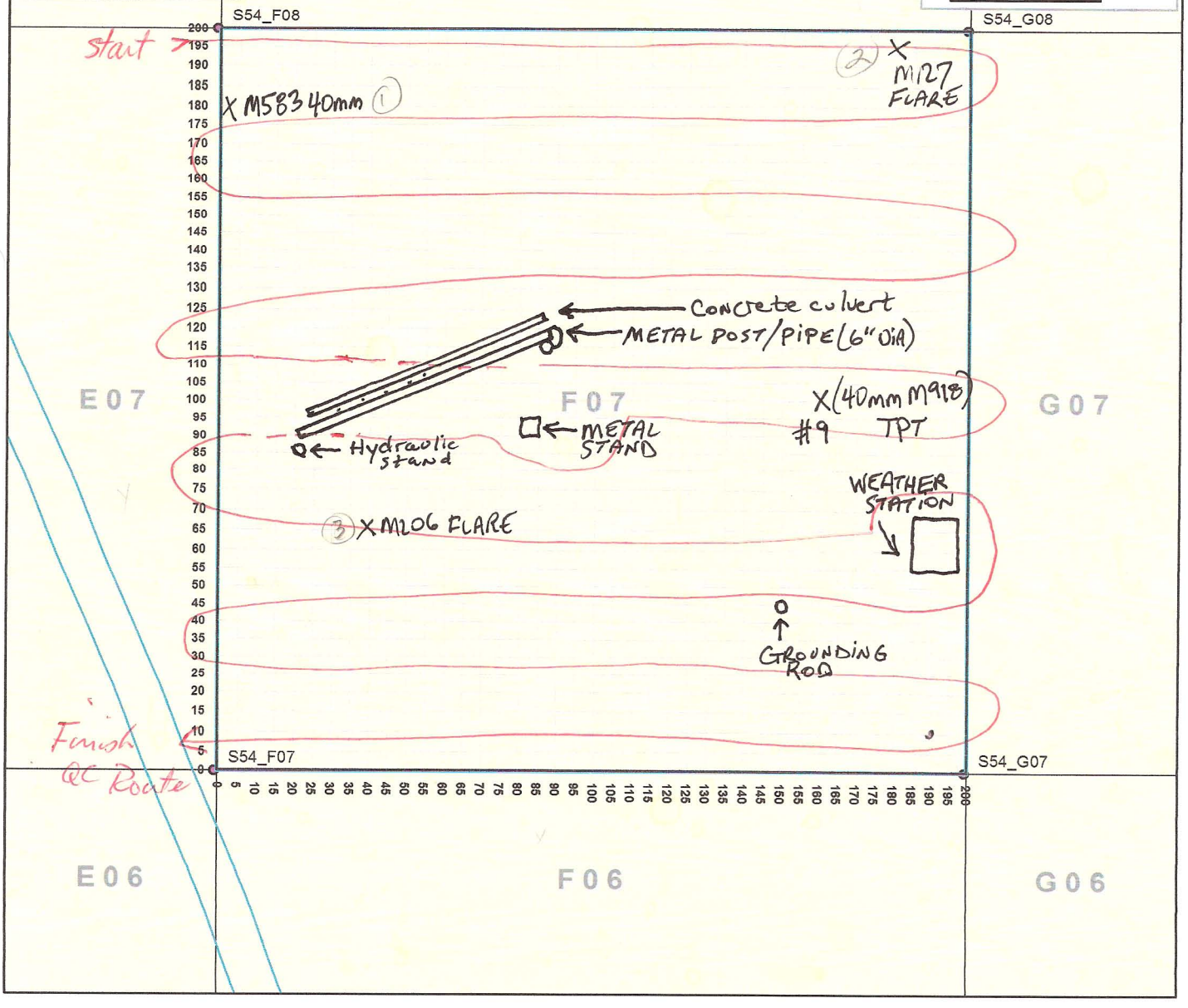
Qty	Depth(in)	Nomenclature	Filler
1	6"	M583 40mm	Illuminant
1	0"	M206 FLARE	Illuminant
1	0"	M127 FLARE	Illuminant



SURFACE CLEARANCE

F08





00099812

S54 F-06

Team (1) 2 3

Date Started: 9-15-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 9-15-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 140 lbs

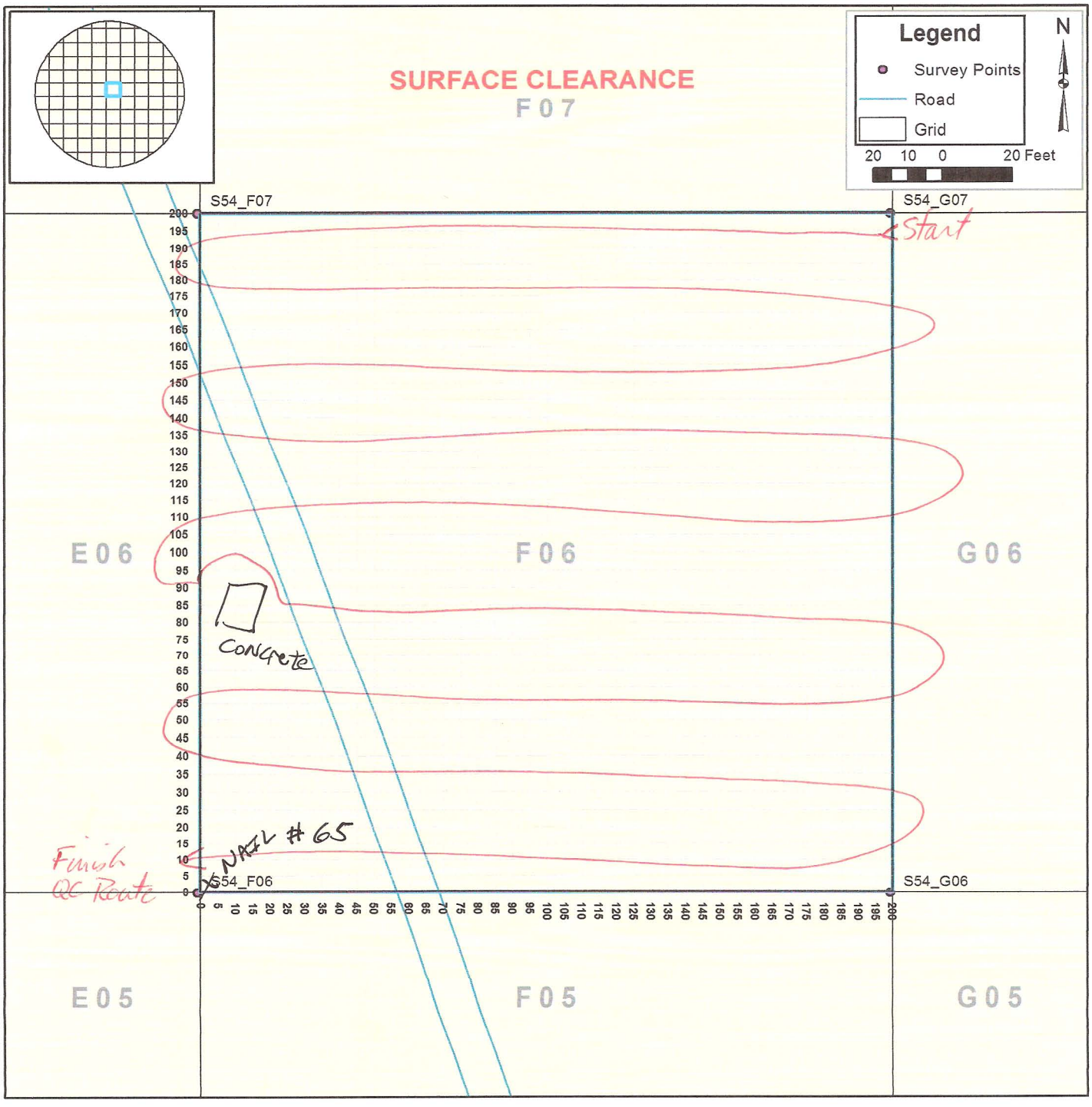
Scrap Metal: 200 lbs

Seed:
X: 1'
Y: 1'

	P	F	Date
QC :	☒	☐	9/16/08
QA :	☐	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099813

S54 G-08 Team : 1 2 (3)

Date Started: 21 Aug 08
Date Surveyed: N/A
Date Grubbed: N/A
Date Finished: 21 Aug 08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☑ ~~-Sand~~

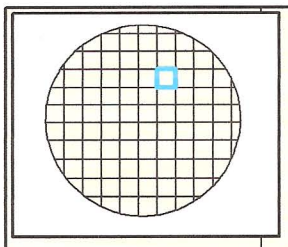
Digs: N/A
MEC #: 0
MEC Debris: 150
Scrap Metal: 25

Seed:
X: 3
Y: 45

	P	F	Date
QC :	☐	☒	8/26/08
QA :	☐	☐	

Comments: QC comments – Grid requires RE-DO. Located too many anomalies within fail criteria.

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE
G09

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S54_G09 S54_H09

GRID Failed QC
Scheduled for RE-DO

F08 G08 H08

11

Watch Tower

S54_G08 S54_H08

F07 G07 H07

Red line = QC ✓ Route

Redo

00099814

S54 G-08 Team #: 1 2 8

Date Started: 9-10-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-11-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

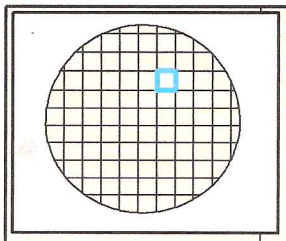
Digs: NA
MEC #: NA
MEC Debris: 800 lbs
Scrap Metal: 20 lbs

Seed:
X: NA
Y: NA

	P	F	Date
QC :	☒	☐	9/15/08
QA :	☒	☐	9/16/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE

G09

Redo G-08

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N

S54_G09 S54_H09

S54_G08 S54_H08

F08 G08 H08

F07 G07 H07

Start

Finish QC Route

Redo

Redo

Re-do

00099815

S27 A-04 Team (1) 2 3

Date Started: 9-30-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-30-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

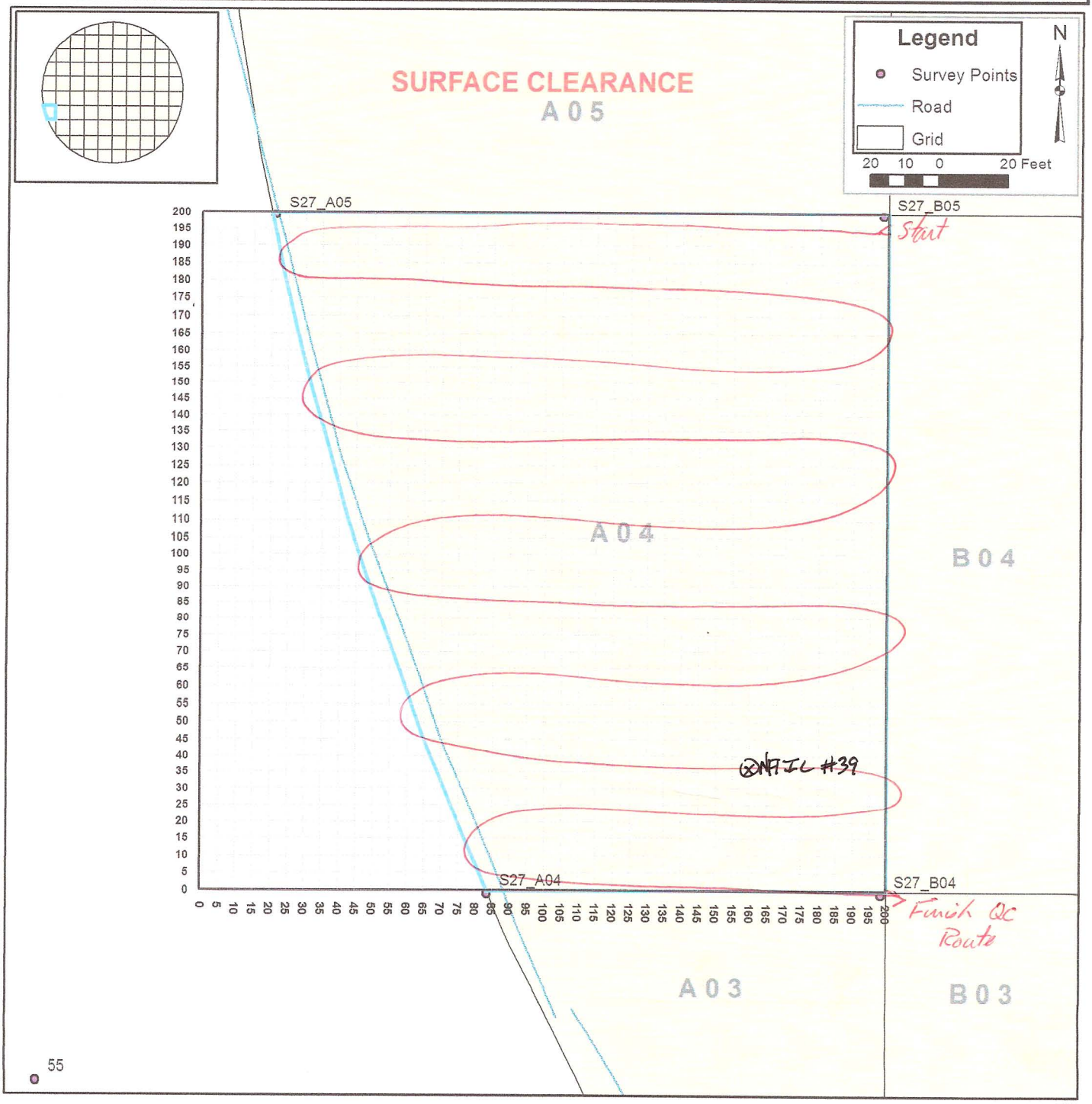
Digs: NA
MEC #: NA
MEC Debris: 20 lbs
Scrap Metal: 0 lbs

Seed:
X: 160'
Y: 36'

	P	F	Date
QC :	☒	☐	10/1/08
QA :	☒	☐	10/2/9

Comments:

Qty	Depth(in)	Nomenclature	Filler



55

00099816

S27 A-05 Team (1) 2 3

Date Started: 9-30-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-30-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

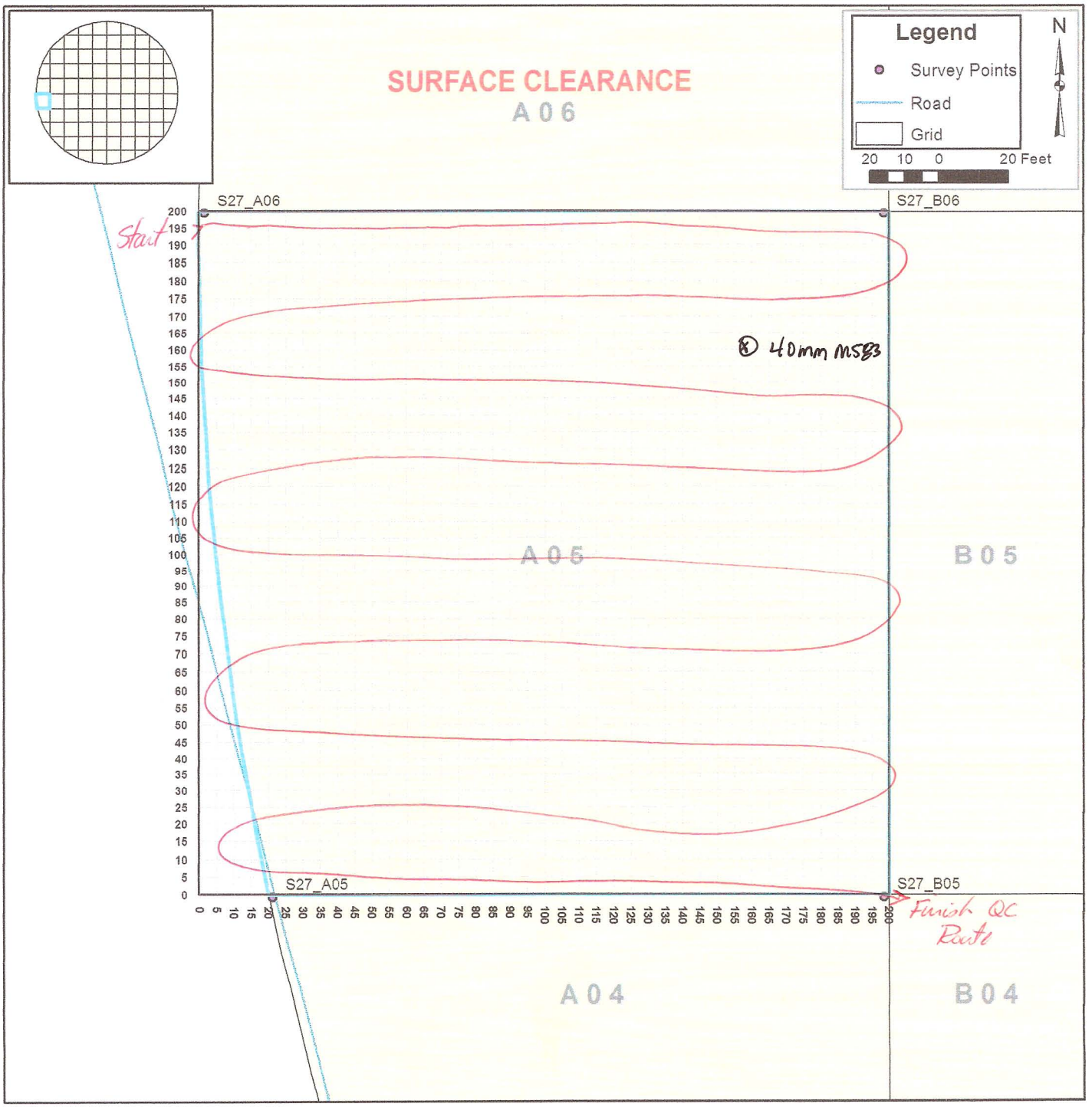
Digs: NA
MEC #: NA
MEC Debris: 25 lbs
Scrap Metal: 30 lbs

Seed:
X: 158'
Y: 1600'

	P	F	Date
QC :	☒	☐	10/01/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099817

S27 A-06

Team (1) 2 3

Date Started: 9-30-2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-30-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 55 lbs

Scrap Metal: 70 lbs

Seed:

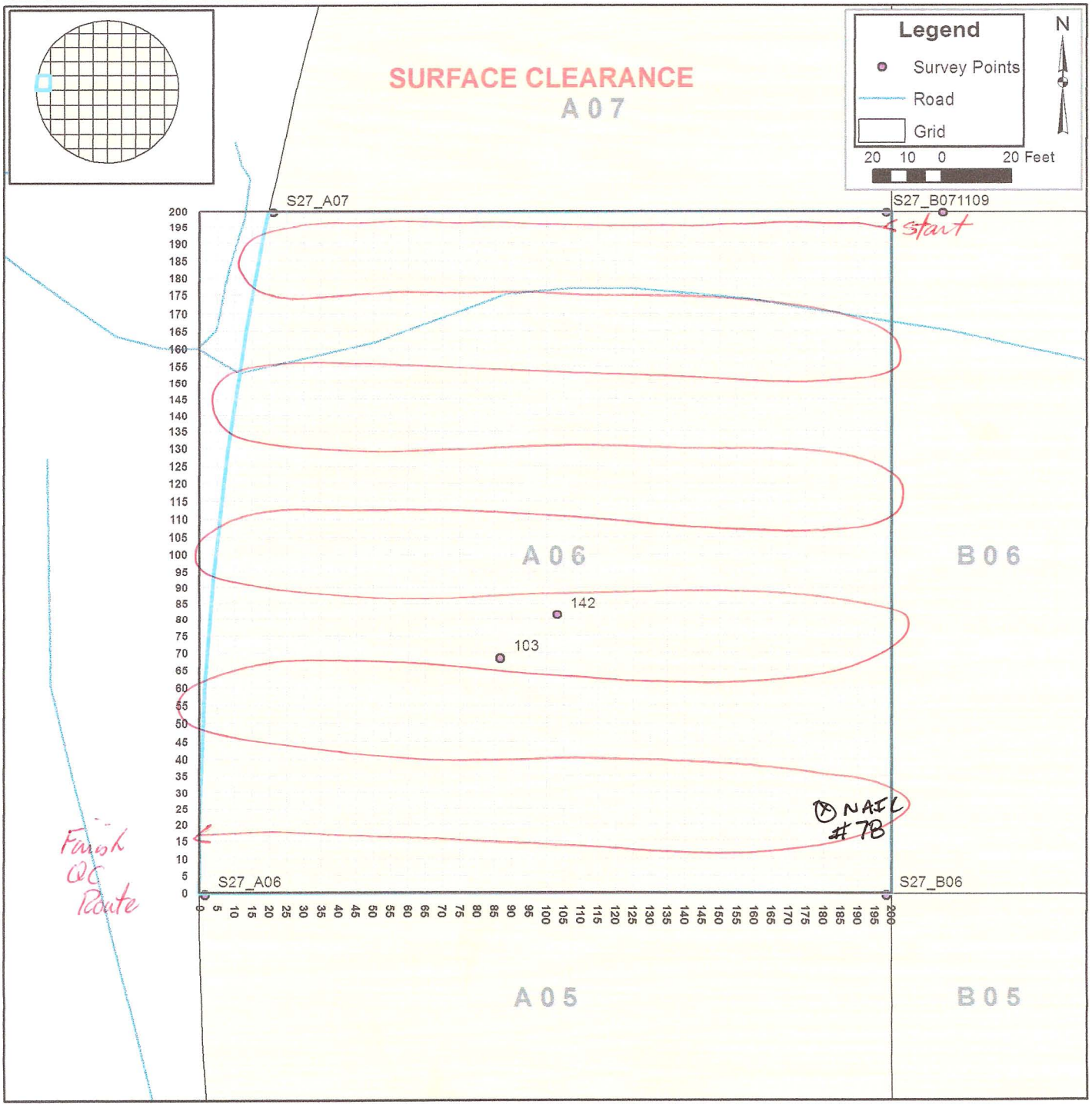
X: 181'

Y: 26'

	P	F	Date
QC :	☒	☐	10/01/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099818

S27 A-07 Team : 1 2 3

Date Started: 9-29-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-29-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA
MEC #: NA
MEC Debris: 65 lbs
Scrap Metal: 5 lbs

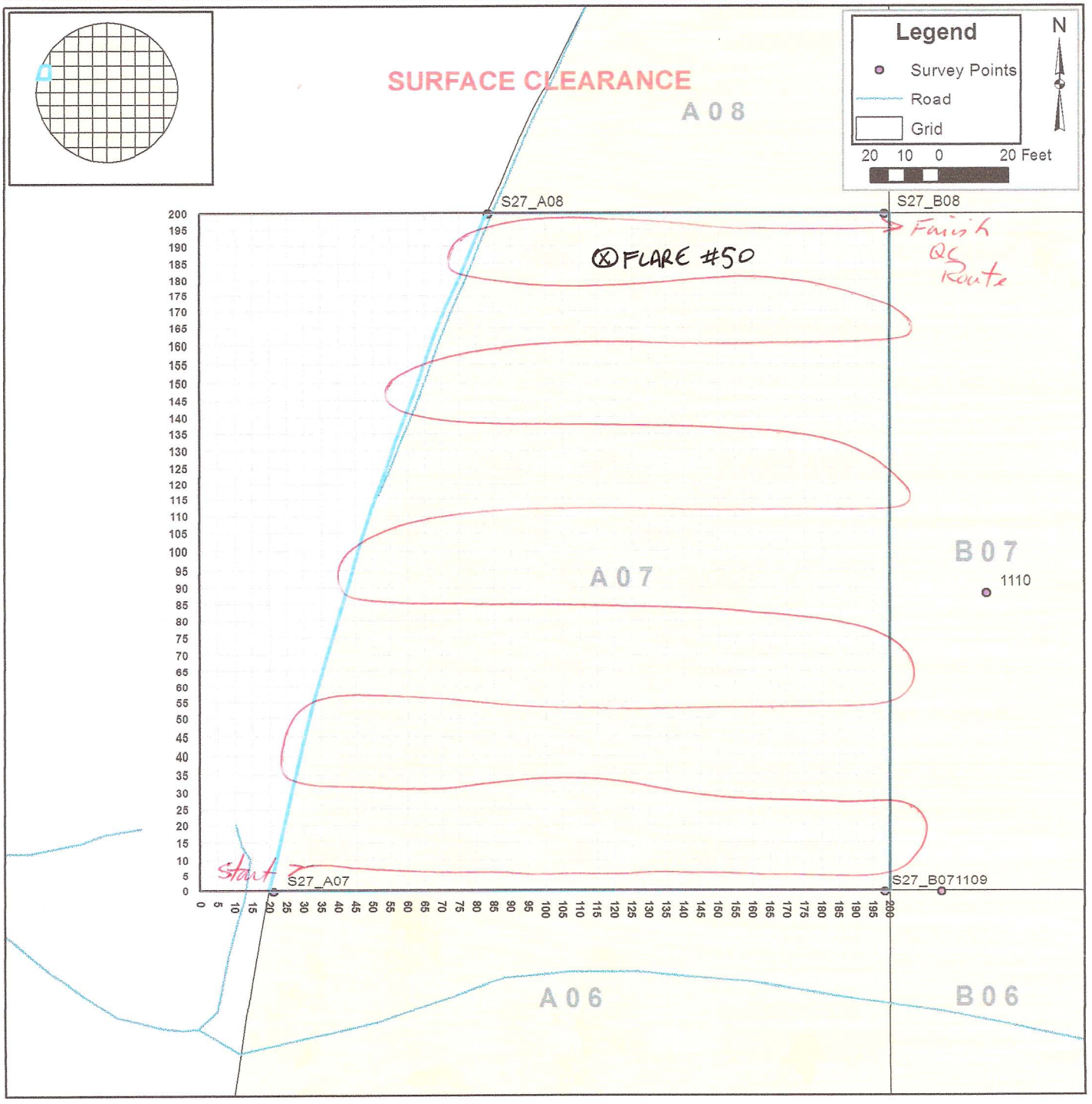
Seed:
X: 118'
Y: 187'

	P	F	Date
QC :	☒	☐	9/30/08
QA :	☒	☐	10/29/08

✓

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099819

S27 A-08 Team ① 2 3

Date Started: 9-29-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-29-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

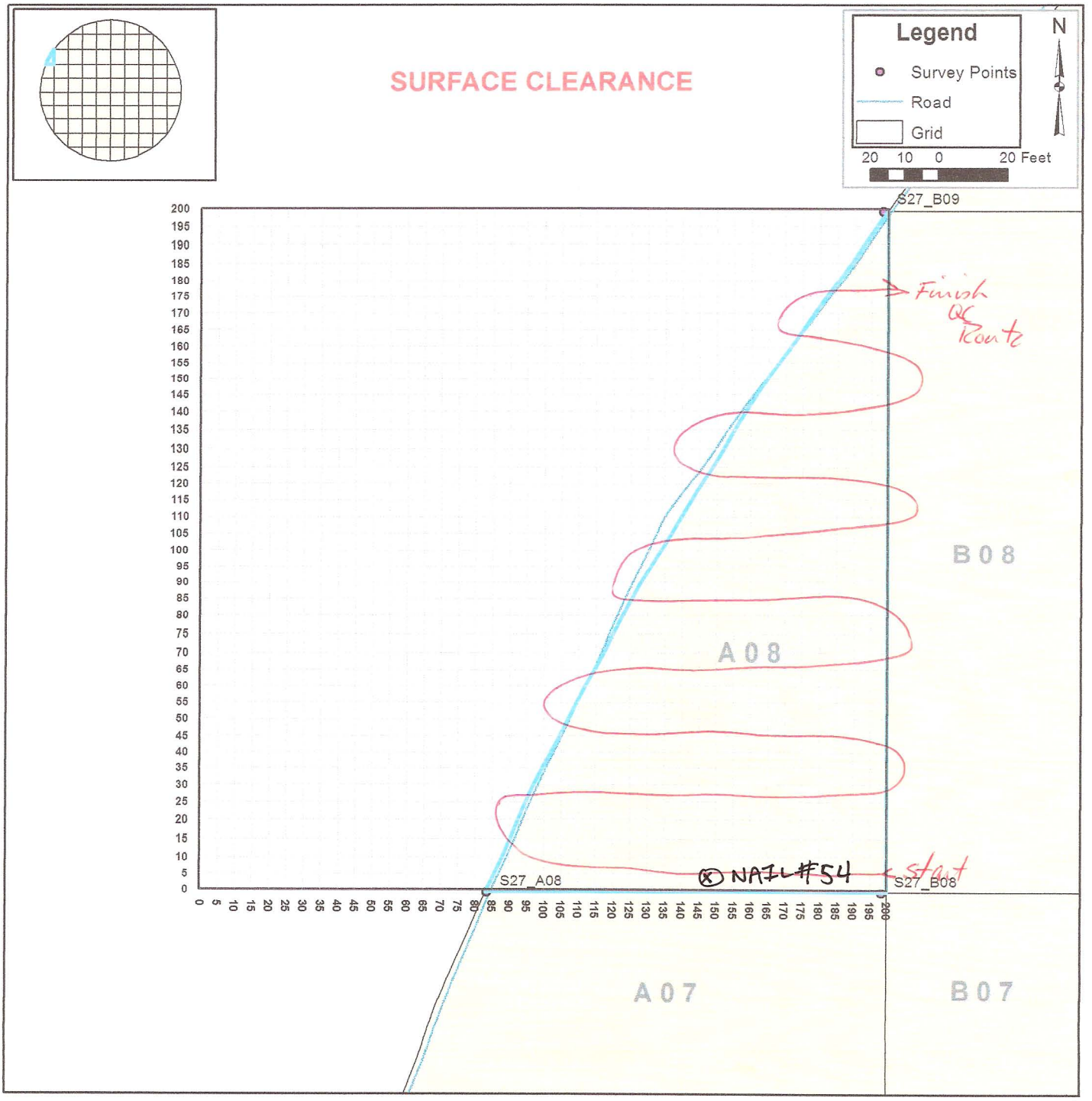
Digs: NA
MEC #: NA
MEC Debris: 15 lbs
Scrap Metal: 5 lbs

Seed:
X: 148'
Y: 8'

	P	F	Date
QC :	☒	☐	9/30/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099820

S27 B-04 Team ① 2 3

Date Started: 9-30-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-30-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

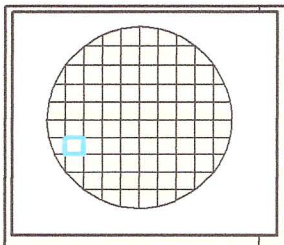
Digs: NA
MEC #: 1
MEC Debris: 15 lbs
Scrap Metal: 5 lbs

Seed:
X: 67'
Y: 30'

	P	F	Date
QC :	☒	☐	10/01/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	M62 FLARE	Illuminant



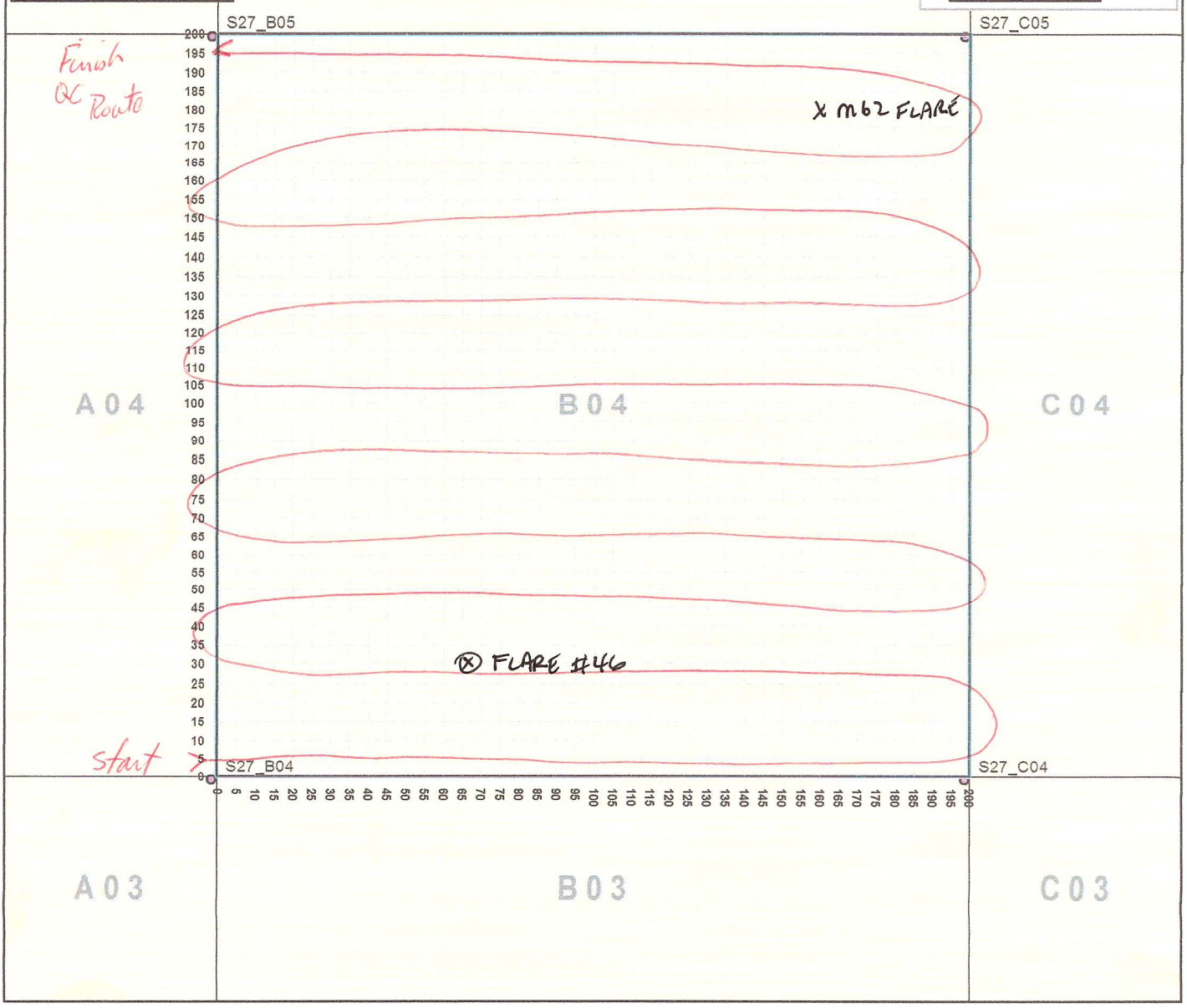
SURFACE CLEARANCE

B05

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099821

S27 B-05 Team : 1 2 3

Date Started: 9-30-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-30-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

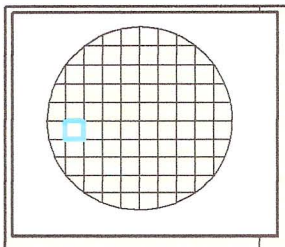
Digs: NA
MEC #: 4
MEC Debris: 25 lbs
Scrap Metal: 0 lbs

Seed:
X: 22'
Y: 42'

	P	F	Date
QC :	☒	☐	10/01/08
QA :	☒	☐	10/29/08

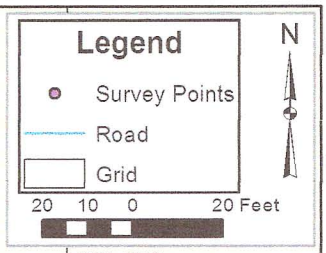
Comments:

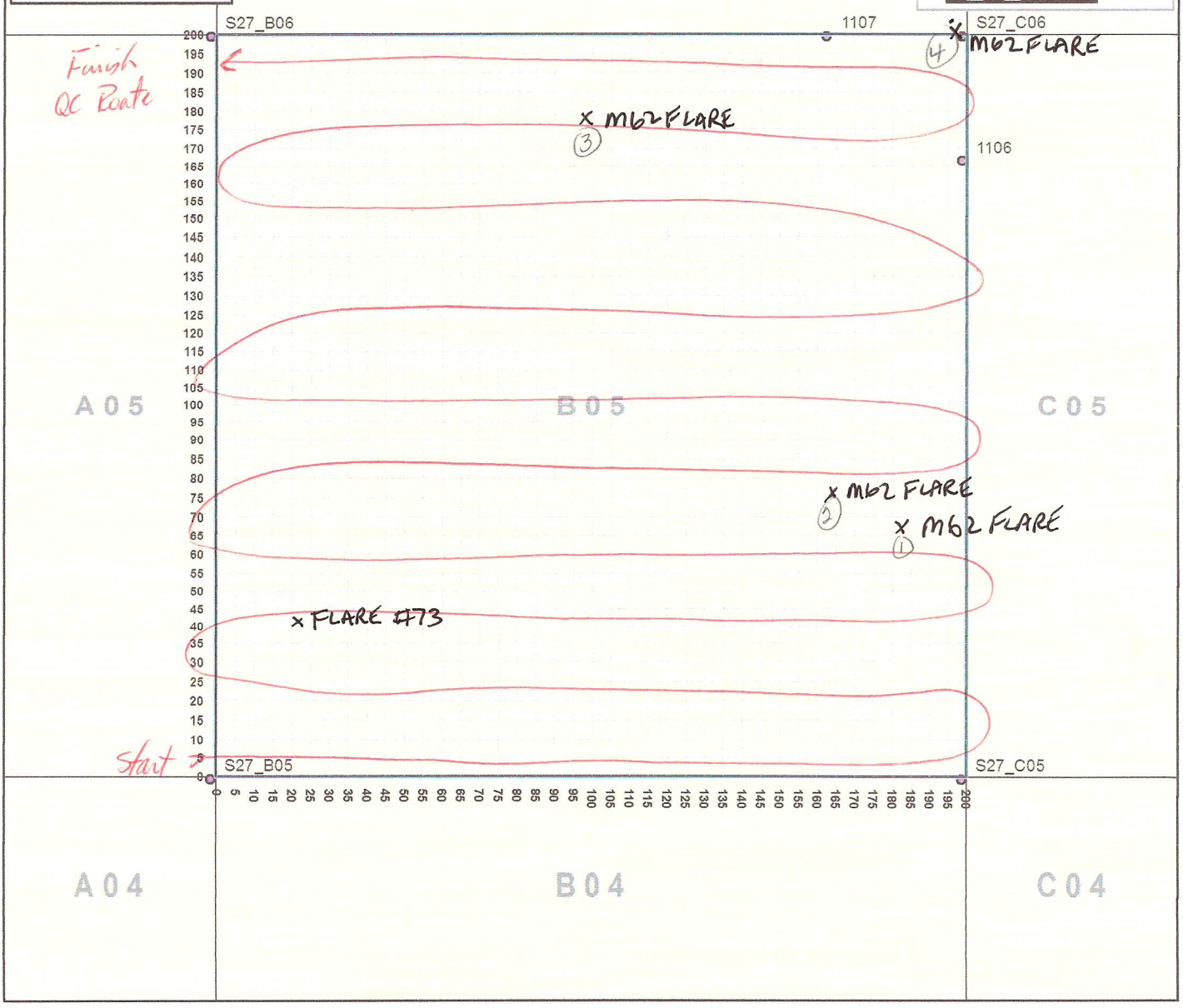
Qty	Depth(in)	Nomenclature	Filler
4	0"	M62 FLARE	Illuminant



SURFACE CLEARANCE

B06





00099822

S27 B-06

Team : 1 2 3

Date Started: 10-1-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 10-2-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: Ø

MEC Debris: 85 lbs

Scrap Metal: Ø lbs

Seed:

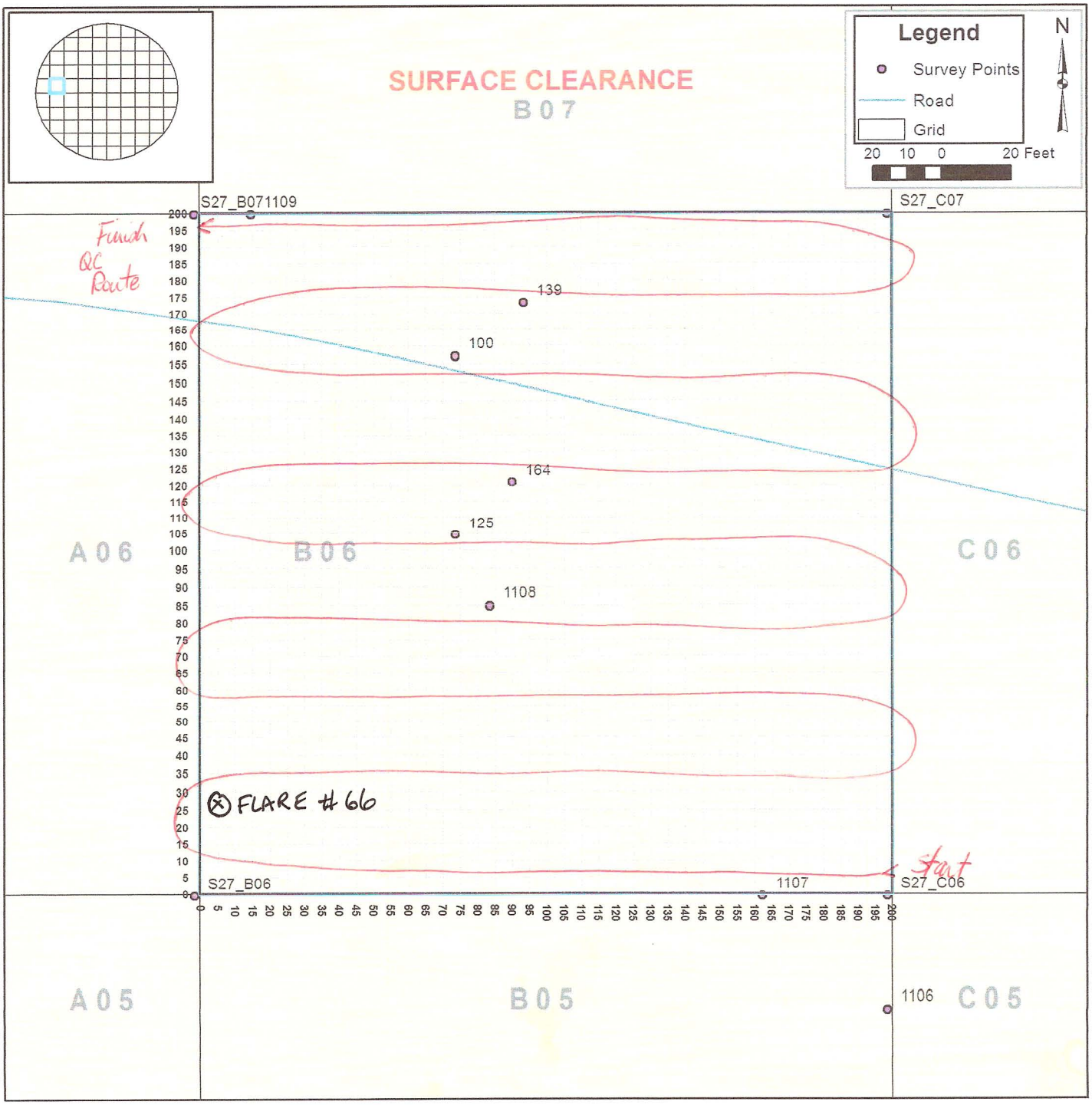
X: 5'

Y: 27'

	P	F	Date
QC :	☒	☐	10/03/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099823

S27 B-07 Team (1) 2 3

Date Started: 9-30-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 10-2-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

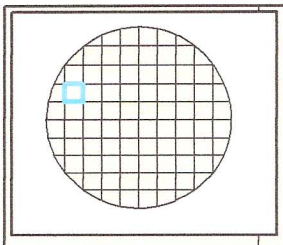
Digs: NA
MEC #: 1
MEC Debris: 305 lbs
Scrap Metal: 10 lbs

Seed:
X: 65'
Y: 40'

	P	F	Date
QC :	☒	☐	10/3/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	M62 FLARE	Equivalent

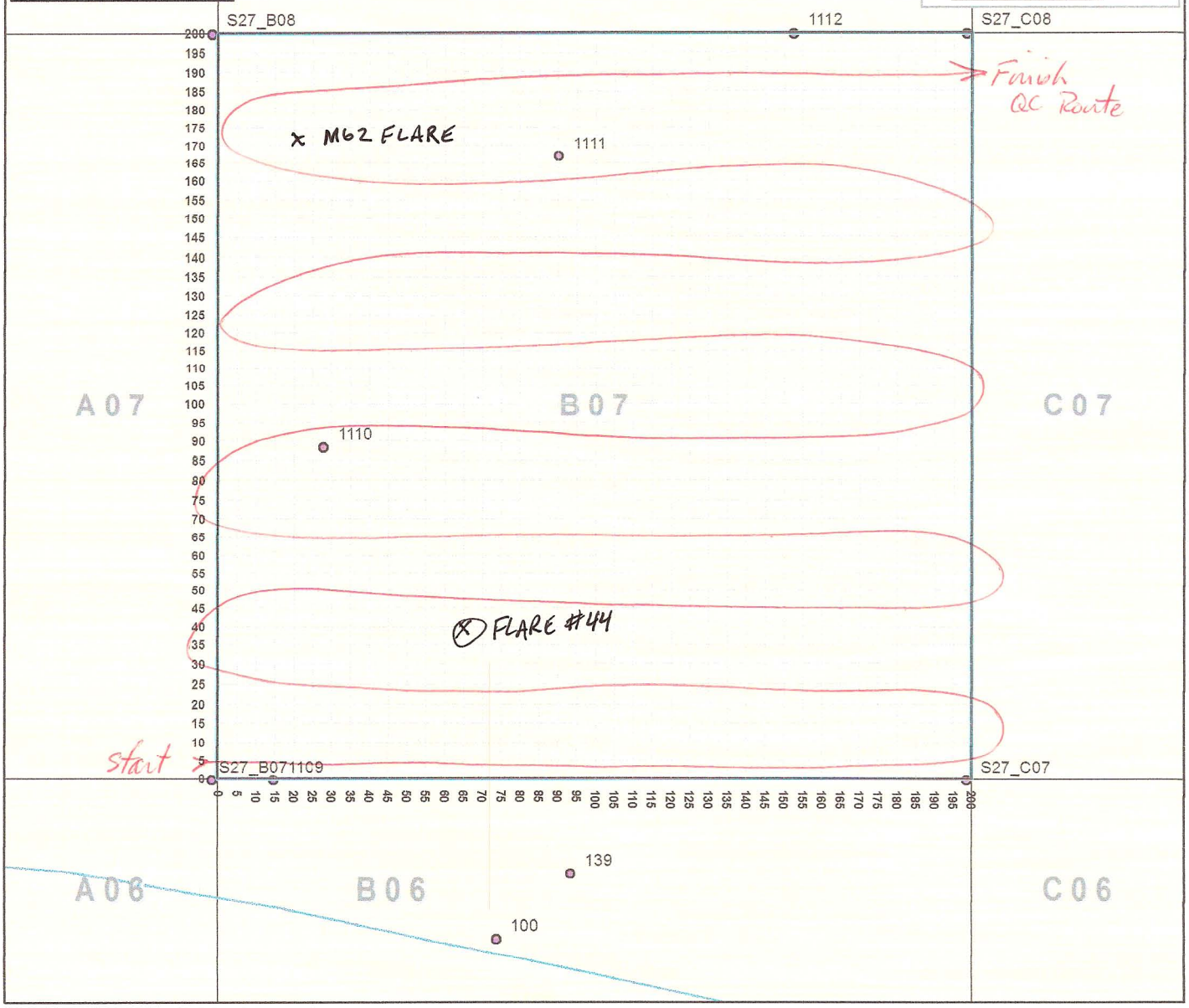


SURFACE CLEARANCE
B08

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099824

S27 B-08 Team (1) 2 3

Date Started: 9-29-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-29-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

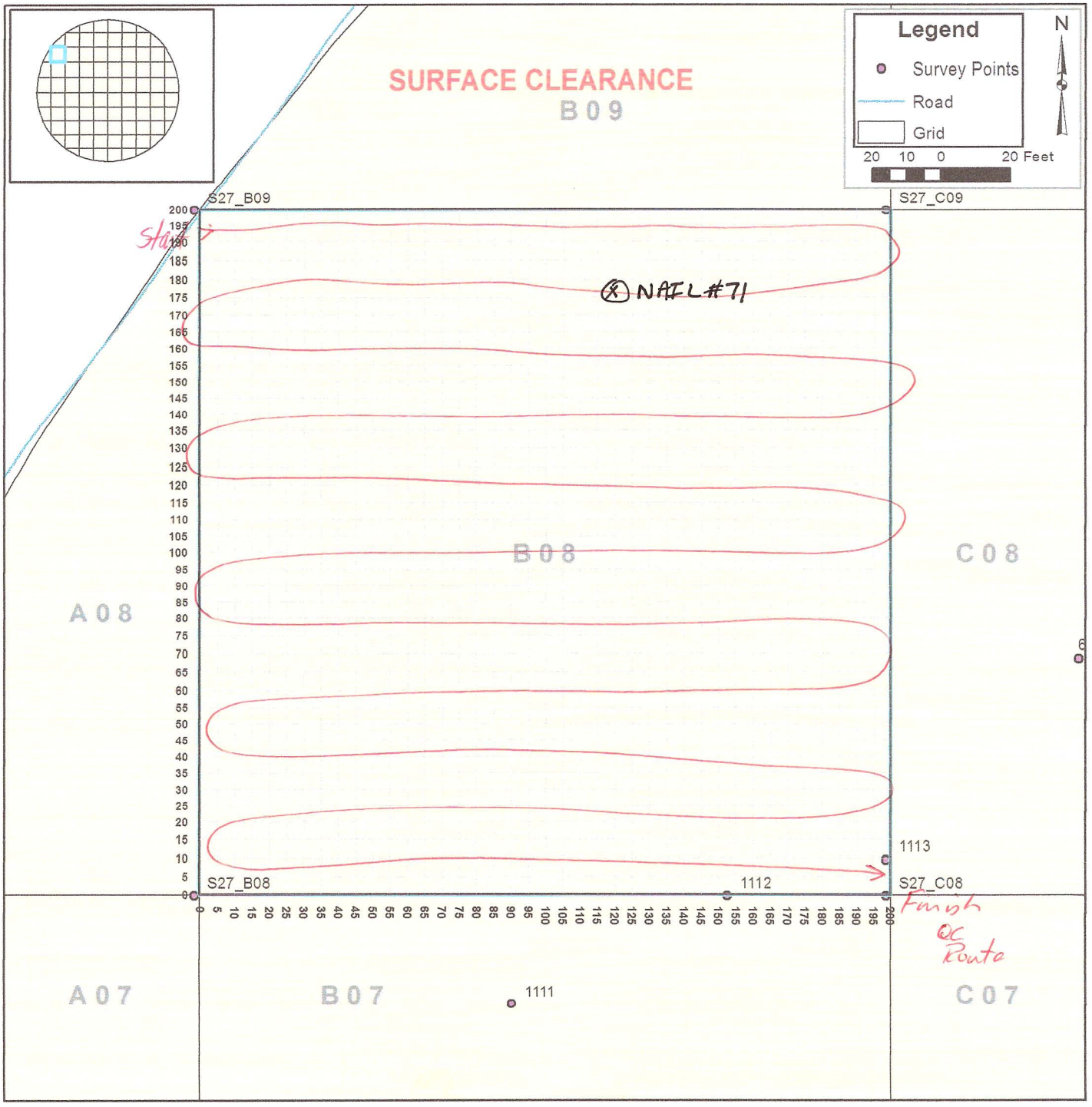
Digs: NA
MEC #: NA
MEC Debris: 45 lbs
Scrap Metal: Ø lbs

Seed:
X: 119'
Y: 176'

	P	F	Date
QC :	X		9/30/08
QA :	X		10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099825

S27 B-09 Team (1) 2 3

Date Started: 9-25-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-25-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA
MEC #: NA
MEC Debris: 5 lbs
Scrap Metal: 0 lbs

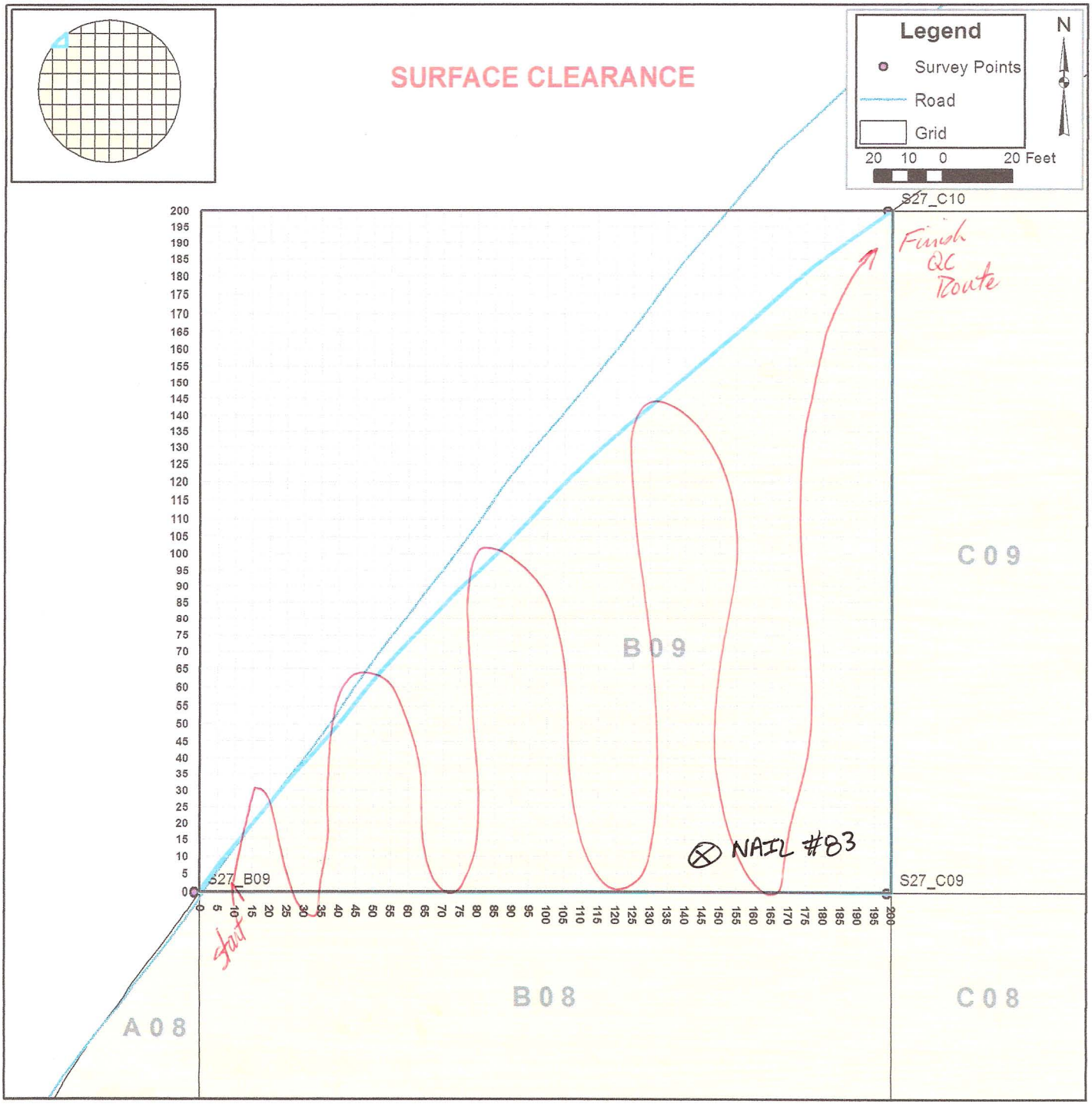
Seed:
X: 145'
Y: 10'

	P	F	Date
QC :	☒	☐	9/29/08
QA :	☒	☐	10/30/08

Comments:

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE



00099826

S27 C-04 Team (1) 2 3

Date Started: 10-1-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 10-1-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

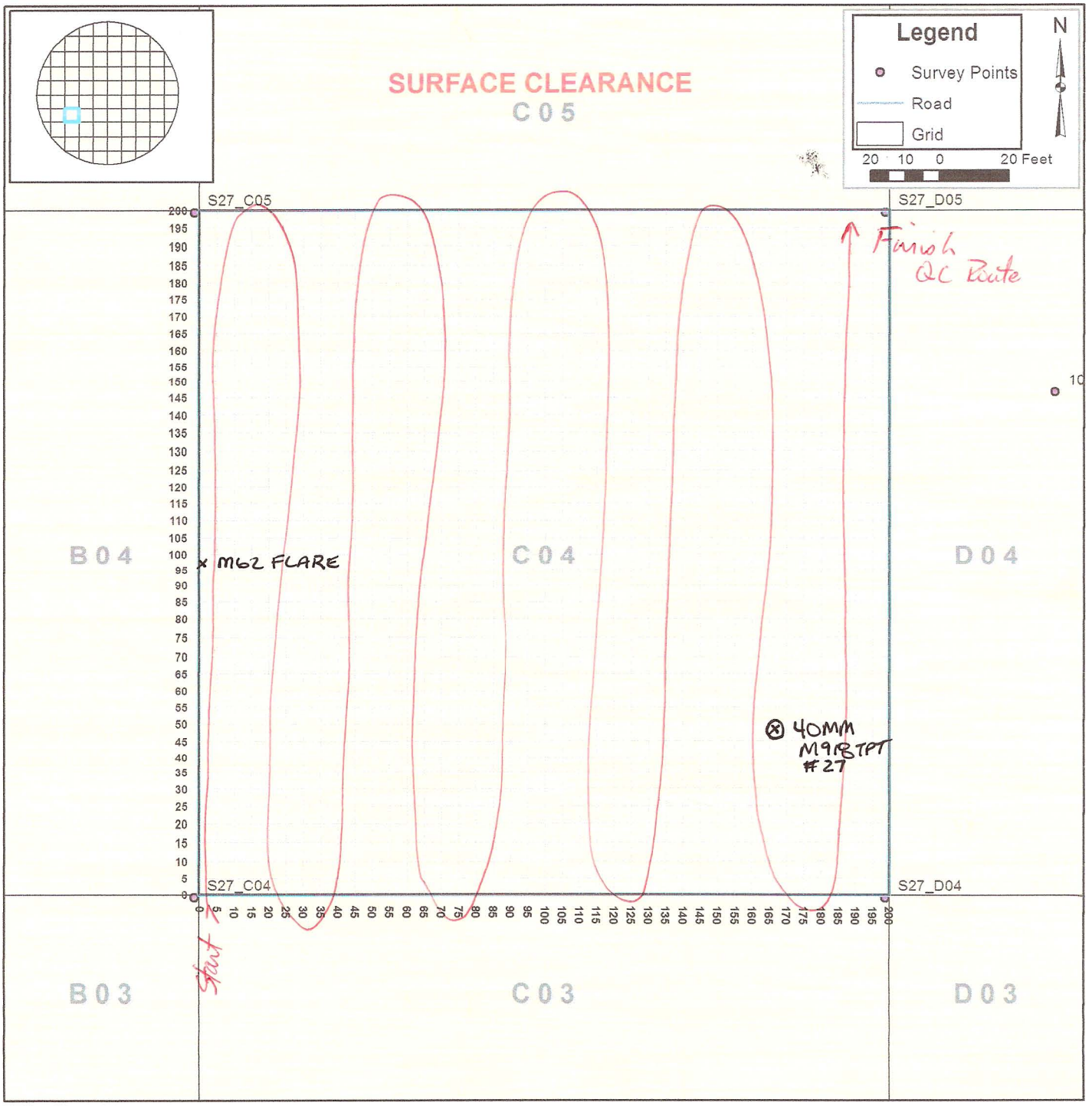
Digs: NA
MEC #: 01
MEC Debris: 10 lbs
Scrap Metal: 0 lbs

Seed:
X: 167'
Y: 48'

	P	F	Date
QC :	☒	☐	10/02/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	M62 FLARE	Illuminent



00099827

S27 C-07 Team (1) 2 3

Date Started: 10-2-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 10-2-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

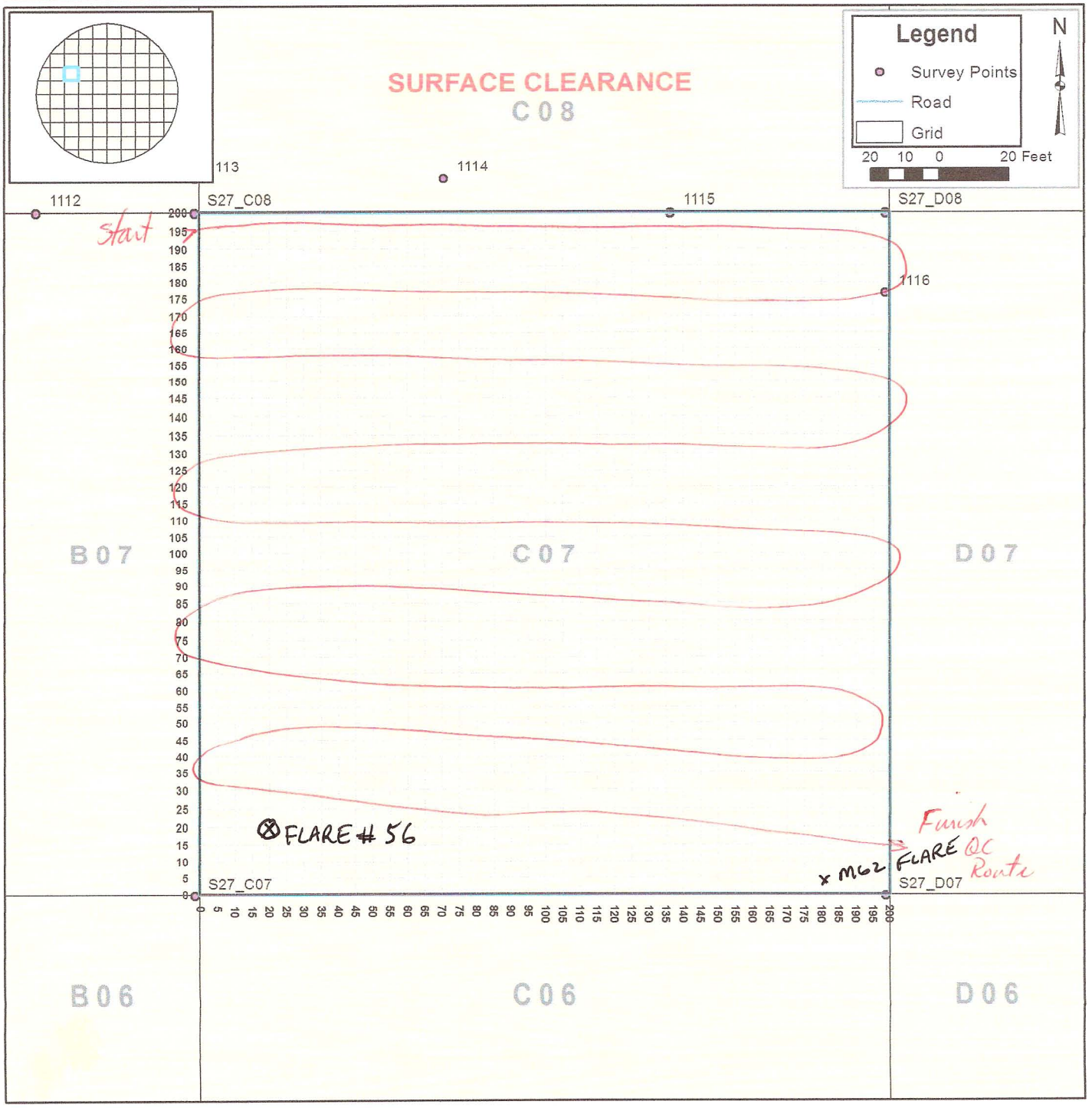
Digs: NA
MEC #: 1
MEC Debris: 65 lbs
Scrap Metal: Ø lbs

Seed:
X: 20'
Y: 20'

	P	F	Date
QC :	☒	☐	10/03/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	M62 FLARE	Illuminant



00099828

S27 C-08 Team (1) 2 3

Date Started: 9-29-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-29-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

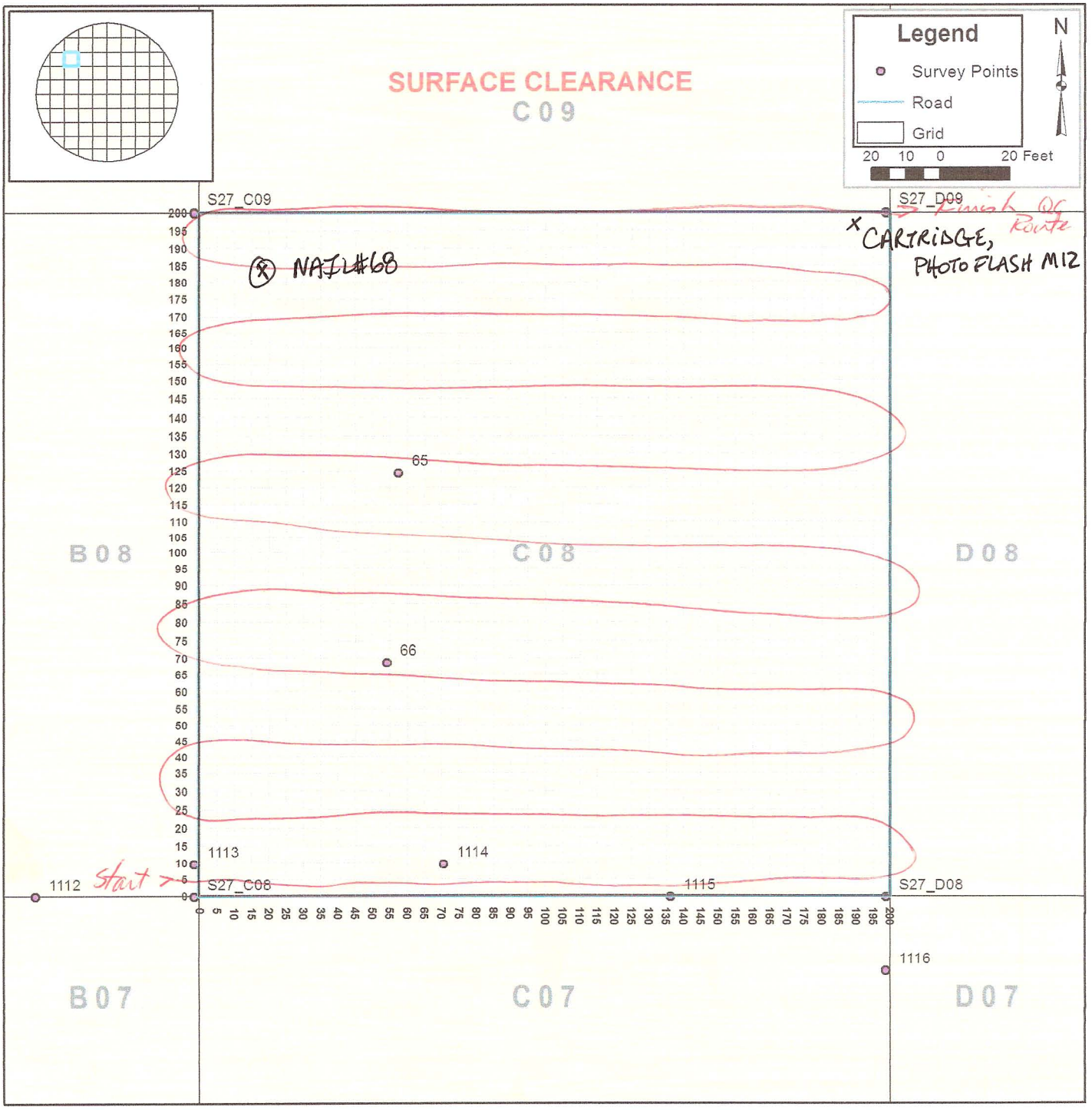
Digs: NA
MEC #: 01
MEC Debris: 55 lbs
Scrap Metal: 5 lbs

Seed:
X: 20'
Y: 183'

	P	F	Date
QC:	☒	☐	9/30/08
QA:	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	Cartridge, Photo flash M12	Illuminant



00099829

S27 C-09 Team : 1 2 3

Date Started: 9-25-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-25-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

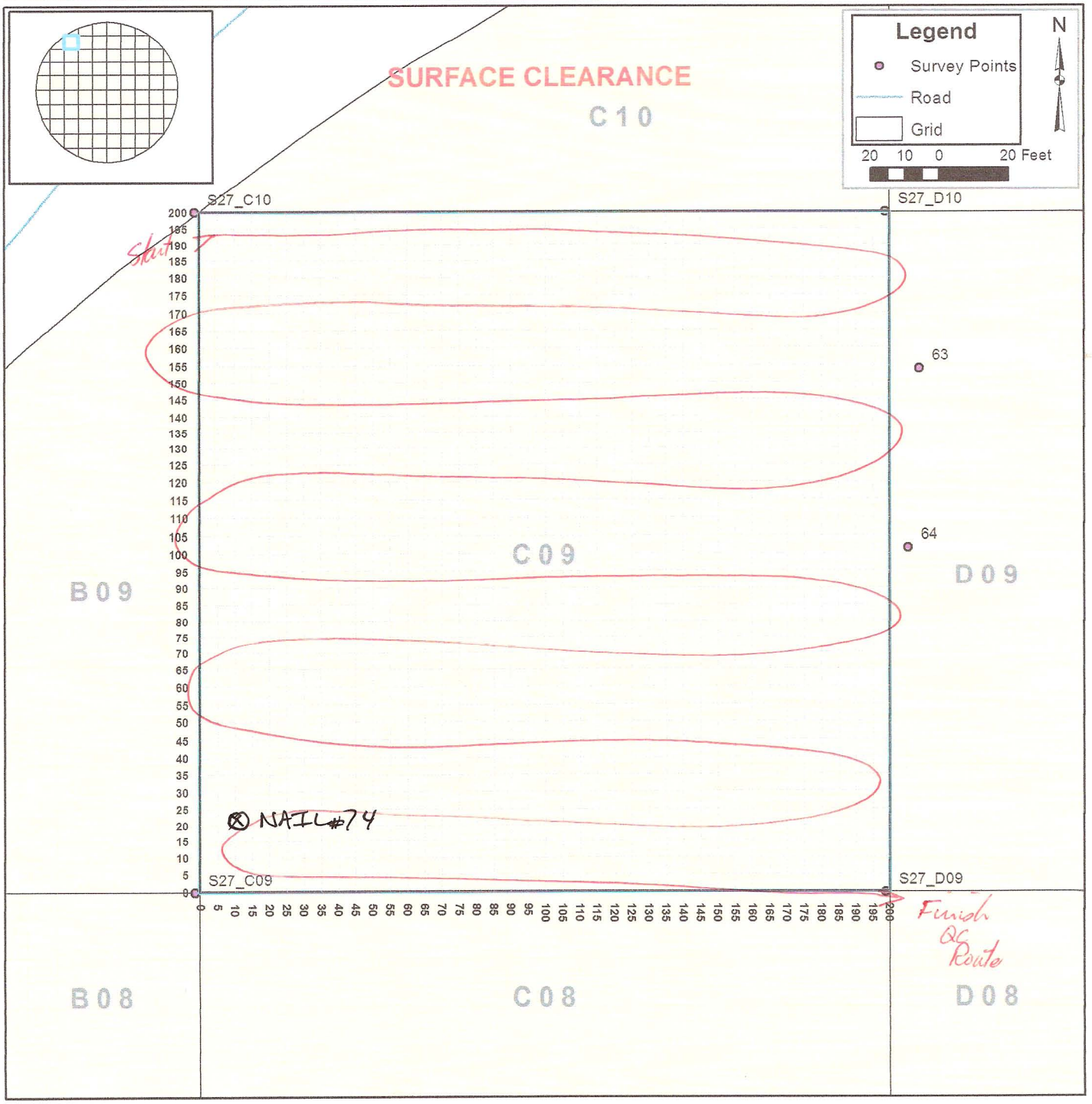
Digs: NA
MEC #: NA
MEC Debris: 716s
Scrap Metal: ∅ 16s

Seed:
X: 10'
Y: 23'

	P	F	Date
QC :	☒	☐	9/29/08
QA :	☑	☐	10/30/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099830

S27 C-10 Team 1 2 3

Date Started: 9-25-08
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-25-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

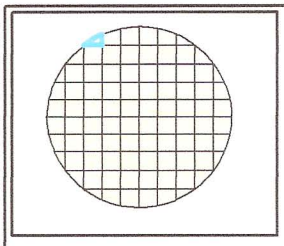
Digs: NA
MEC #: NA
MEC Debris: 3 lbs
Scrap Metal: 0 lbs

Seed:
X: 34'
Y: 17'

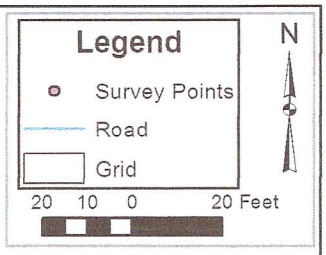
	P	F	Date
QC :	X	☐	9/29/08
QA :	X	☐	10/30/08

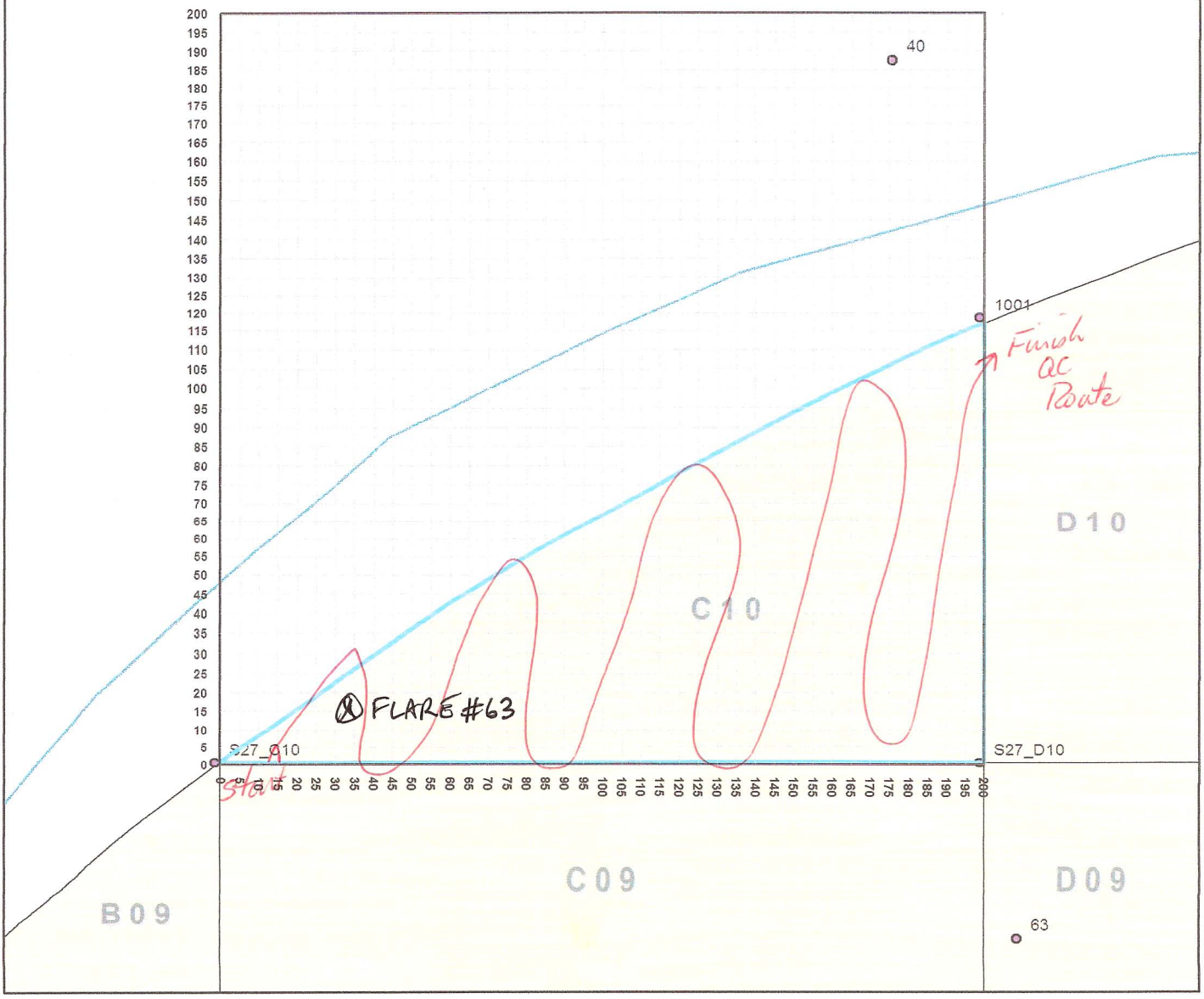
Comments:

Qty	Depth(in)	Nomenclature	Filler



SURFACE CLEARANCE





00099831

S27 D-07 Team : (1) 2 3

Date Started: 10-2-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 10-2-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

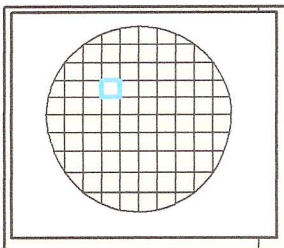
Digs: NA
MEC #: 4
MEC Debris: 55 lbs
Scrap Metal: 20 lbs

Seed:
X: 24'
Y: 14'

	P	F	Date
QC :	X		10/03/08
QA :	X		10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
4	0"	M62 FLARE	Illuminent



SURFACE CLEARANCE
D08

Legend
Survey Points
Road
Grid
20 10 0 20 Feet
N

S27_D08 S27_E08

1116
4 x M62 FLARE
Finish QC Route
1117
.3 x M62 FLARE
.1 x M62 FLARE
.2 x M62 FLARE
⊗ FLARE # 50
1118
start
S27_D07 S27_E071119

C07 D07 E07
C06 D06 E06

00099832

S27 D-08 Team : 1 2 3

Date Started: 9-29-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-29-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

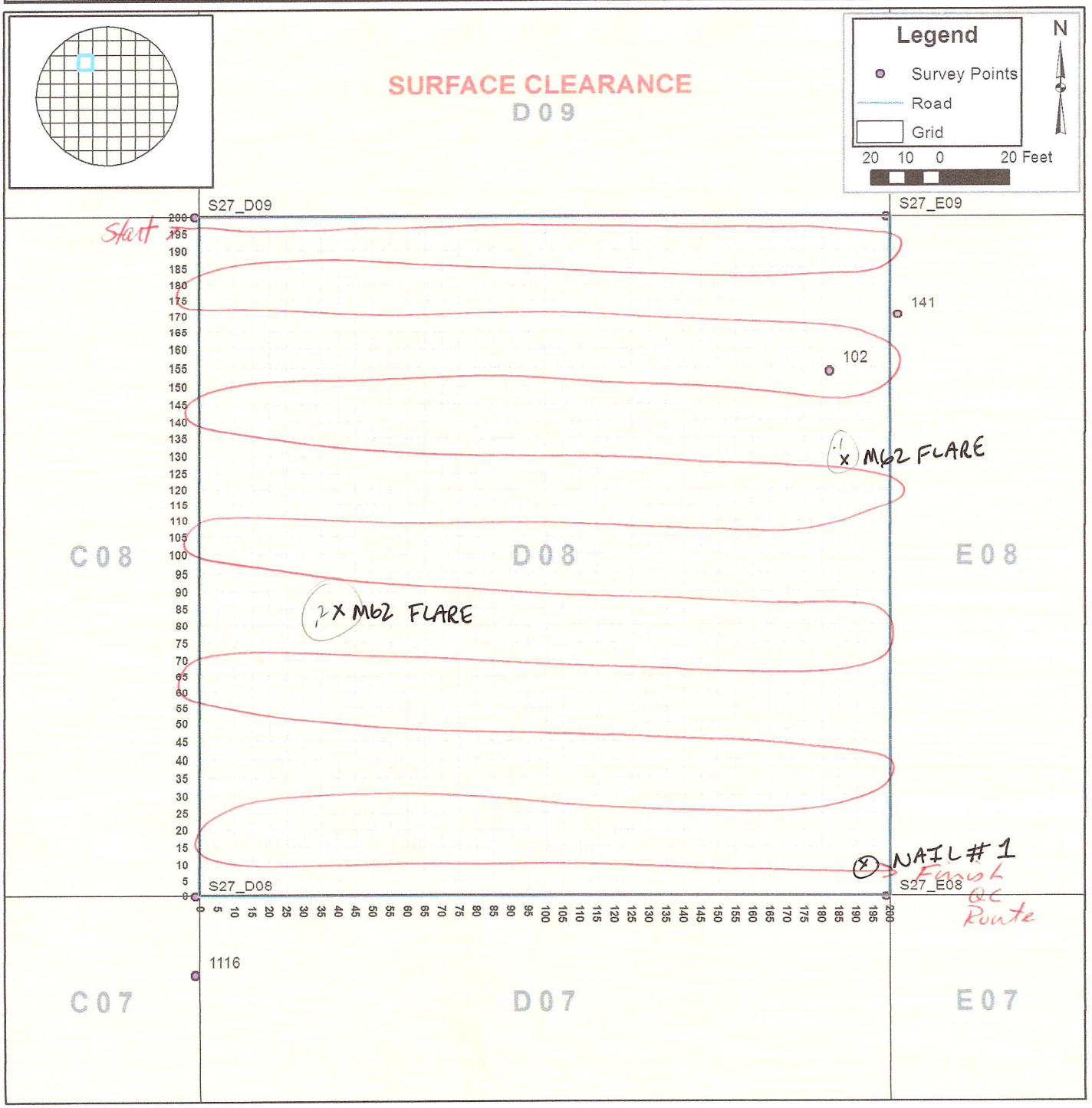
Digs: NA
MEC #: 02
MEC Debris: 25 lbs
Scrap Metal: Ø lbs

Seed:
X: 192'
Y: 10'

	P	F	Date
QC :	☒	☐	9/30/08
QA :	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
2	0"	M62 FLARE	Illuminant



00099833

S27 D-09 Team (1) 2 3

Date Started: 9-25-2008
Date Surveyed: NA
Date Gru:bbed: NK
Date Finished: 9-25-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

Digs: NA
MEC #: 3
MEC Debris: 5 lbs
Scrap Metal: 0 lbs

Seed:
X: 172'
Y: 164'

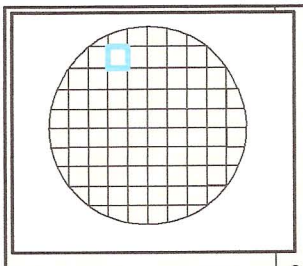
	P	F	Date
QC :	X	☐	9/29/08
QA :	X	☐	10/30/08

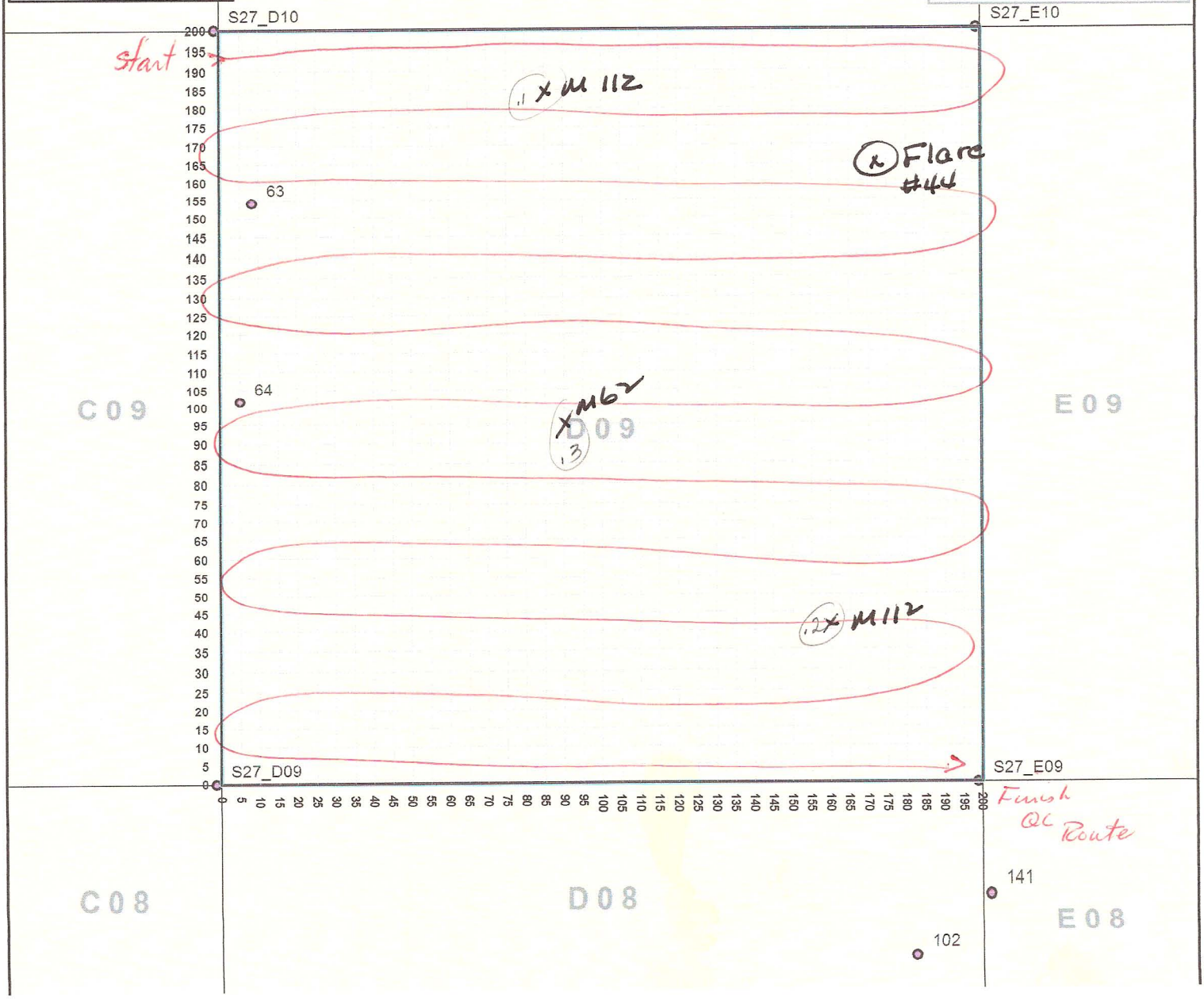
Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	M62 Flare	illuminant
2	0"	M112 Flare	"

SURFACE CLEARANCE

D10





00099834

S27 D-10 Team : 1 2 3

Date Started: 9-25-08
Date Surveyed: N/A
Date Grubbed: N/A
Date Finished: 9-25-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: ~ 0
MEC #: ~ 0
MEC Debris: 24
Scrap Metal: 16

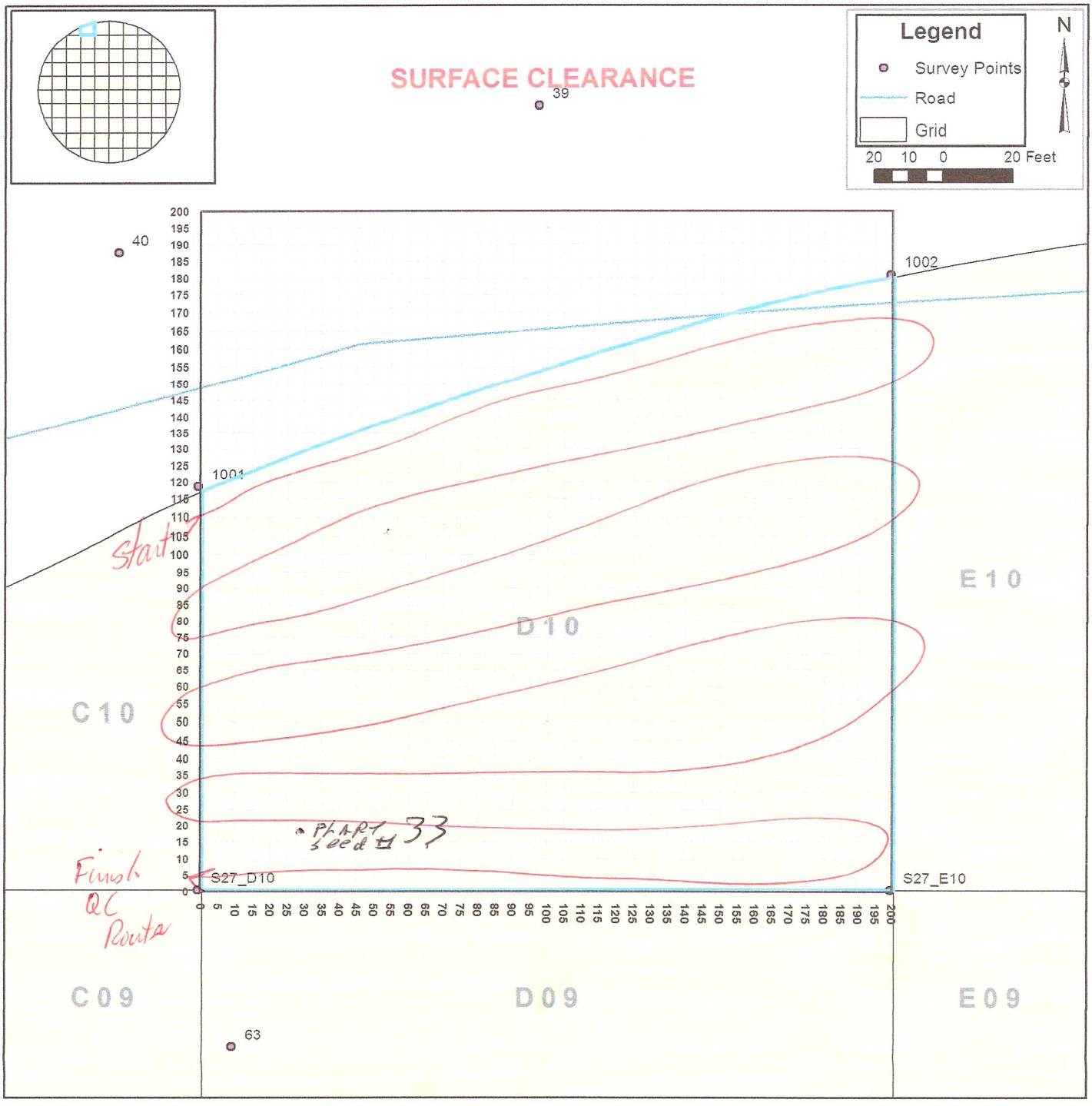
Seed:
X: 28'
Y: 19'

	P	F	Date
QC :	☒	☐	9/25/08
QA :	☒	☐	10/30/08

Comments:

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE



00099835

S27 E-08 Team (1) 2 3

Date Started: 9-29-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-29-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

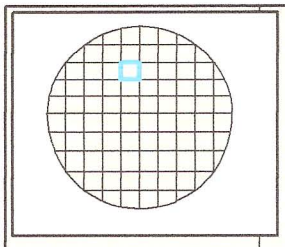
Digs: NA
MEC #: 01
MEC Debris: 20 lbs
Scrap Metal: 0 lbs

Seed:
X: 190'
Y: 100'

	P	F	Date
QC :	☒	☐	9/30/08
QA :	☒	☐	10/29/08

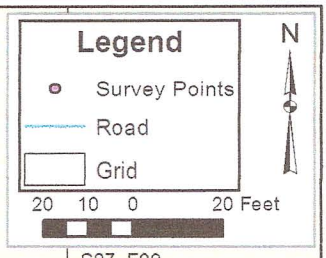
Comments:

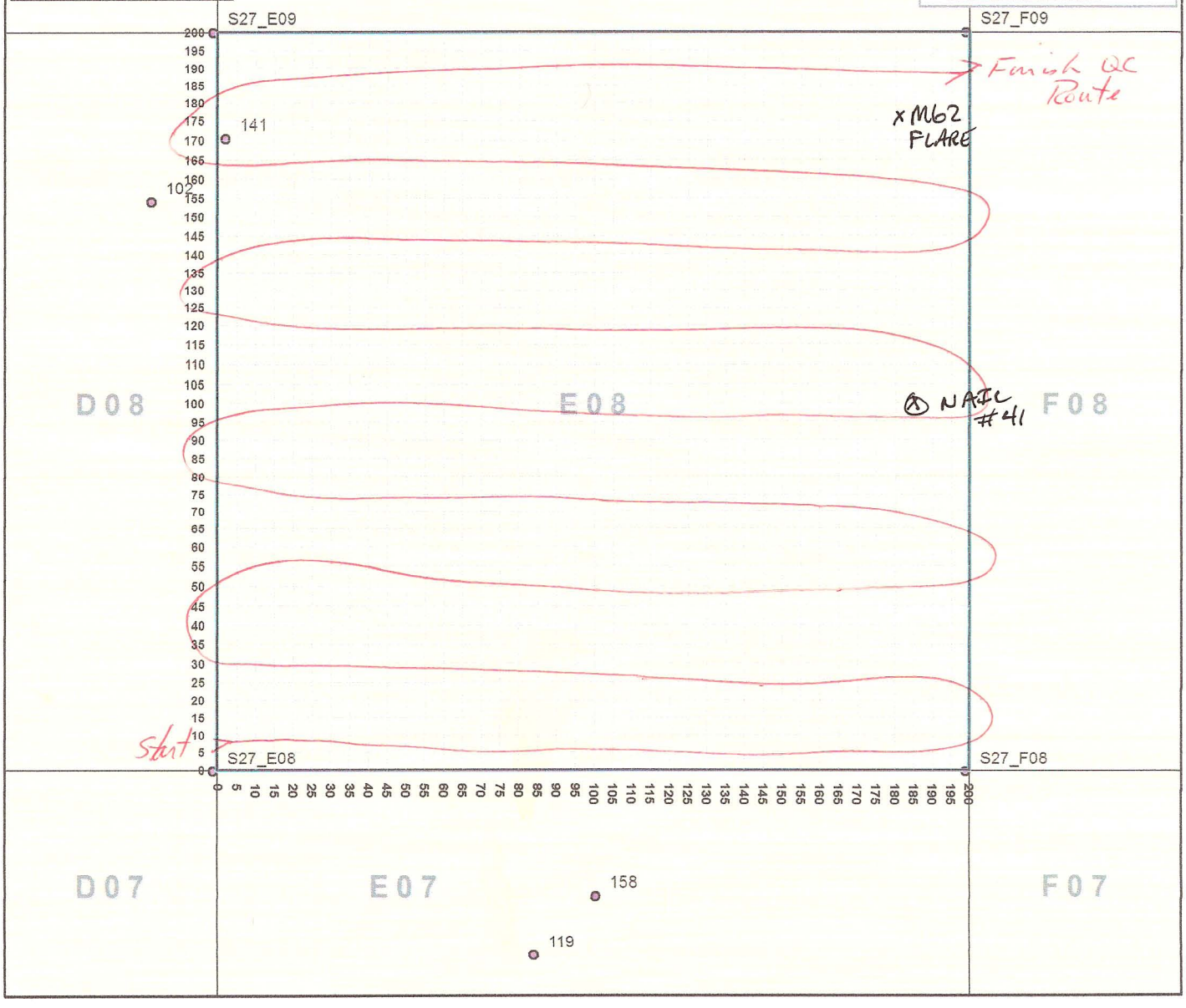
Qty	Depth(in)	Nomenclature	Filler
1	0"	M62 FLARE	Illuminant



SURFACE CLEARANCE

E09





00099836

S27 E-09

Team: 1 2 3

Date Started: 9-29-2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-29-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: 01

MEC Debris: 35 lbs

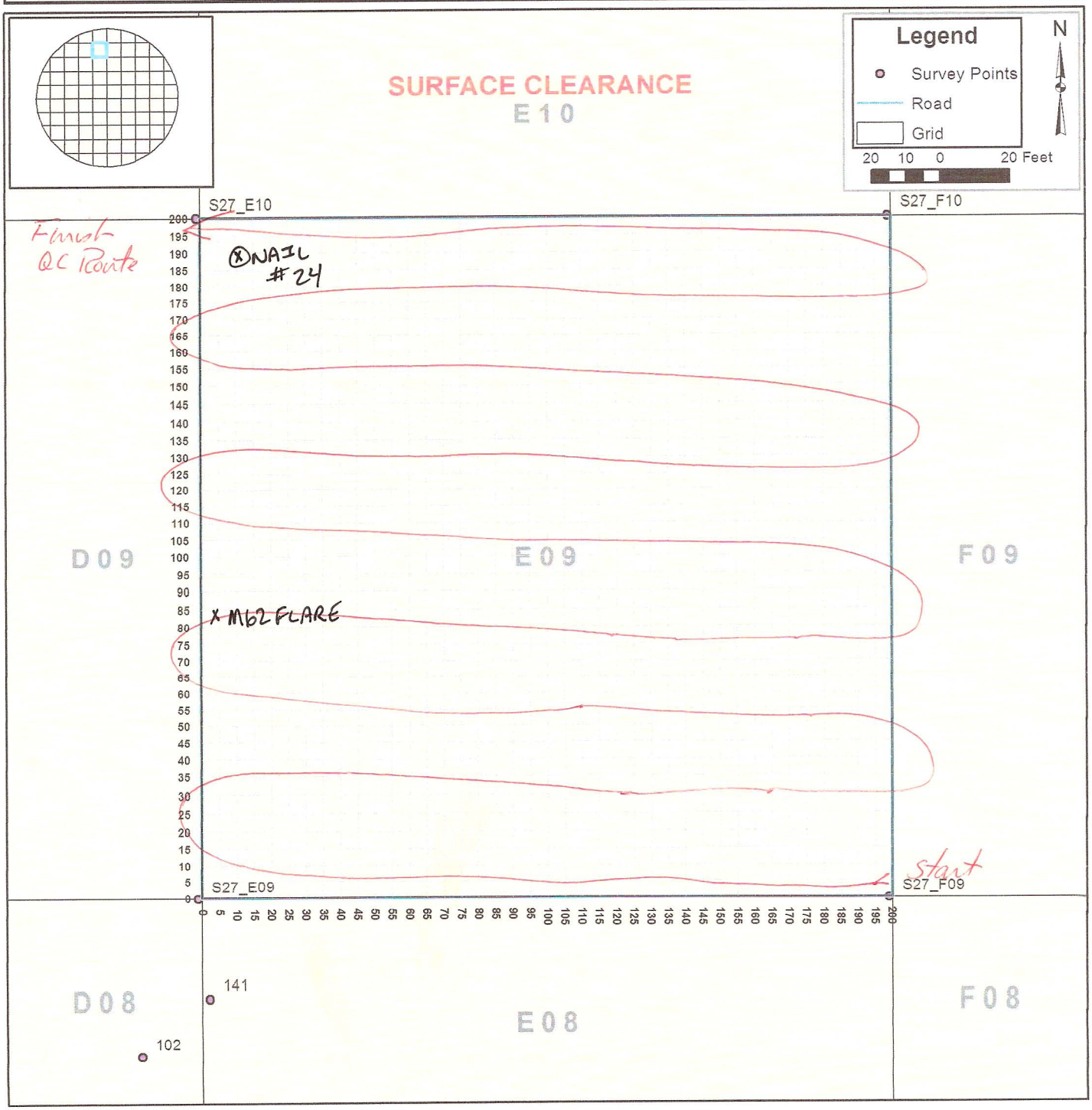
Scrap Metal: 9 lbs

Seed:
X: 11'
Y: 189'

	P	F	Date
QC:	☒	☐	9/30/08
QA:	☒	☐	10/30/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	M62 FLARE	Illuminant



00099837

S27 E-10

Team: 1 2 3

Date Started: 9-25-08

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-25-08

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 106

Scrap Metal: —

Seed: 66

X: 174

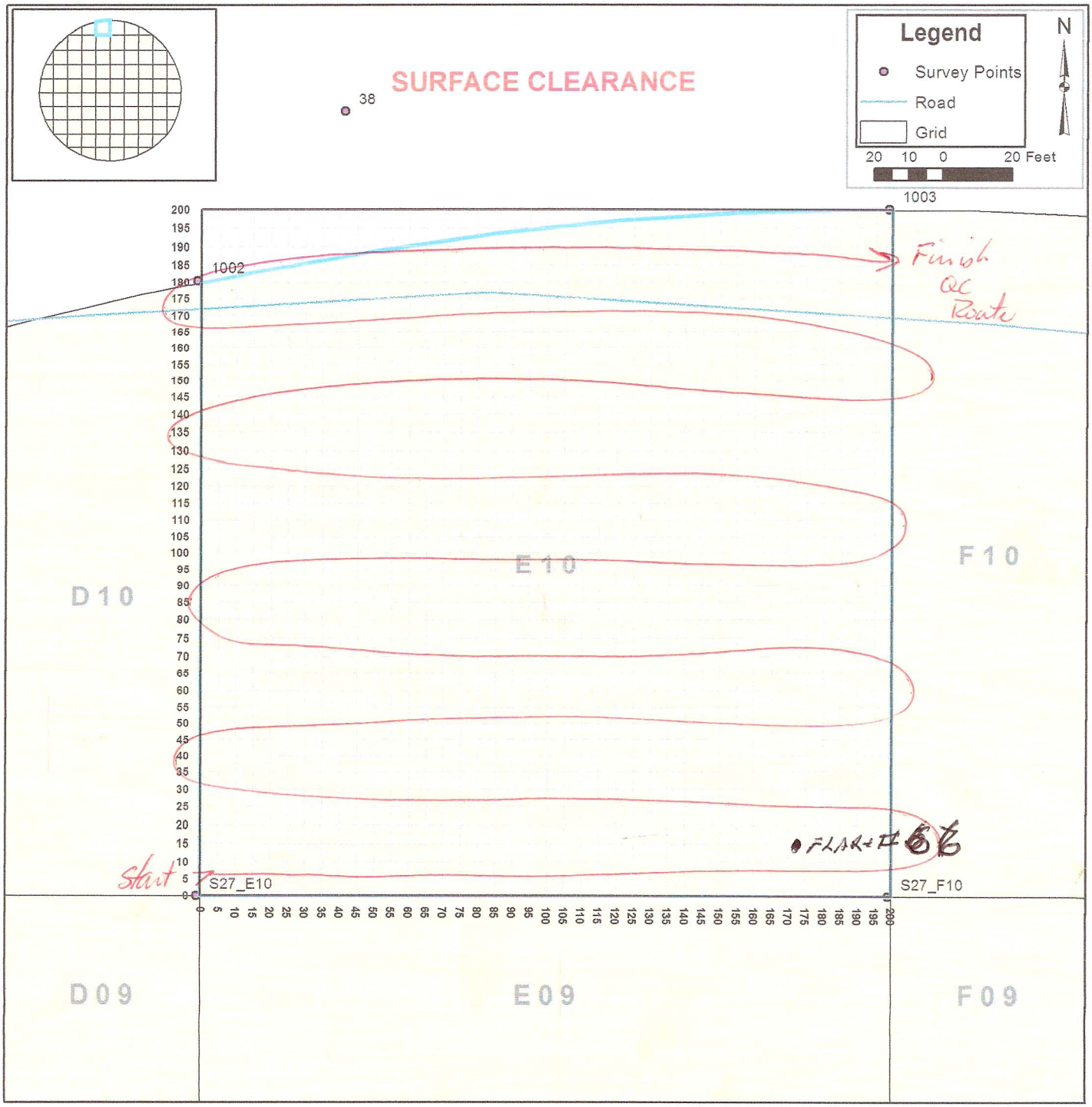
Y: 15

	P	F	Date
QC:	☒	☐	9/29/08
QA:	☒	☐	10/30/08

Comments:

Qty	Depth(in)	Nomenclature	Filler

SURFACE CLEARANCE



00099838

S27 F-08 Team: 1 2 3

Date Started: 9-24-2008
Date Surveyed: NA
Date Grubbed: NA
Date Finished: 9-25-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

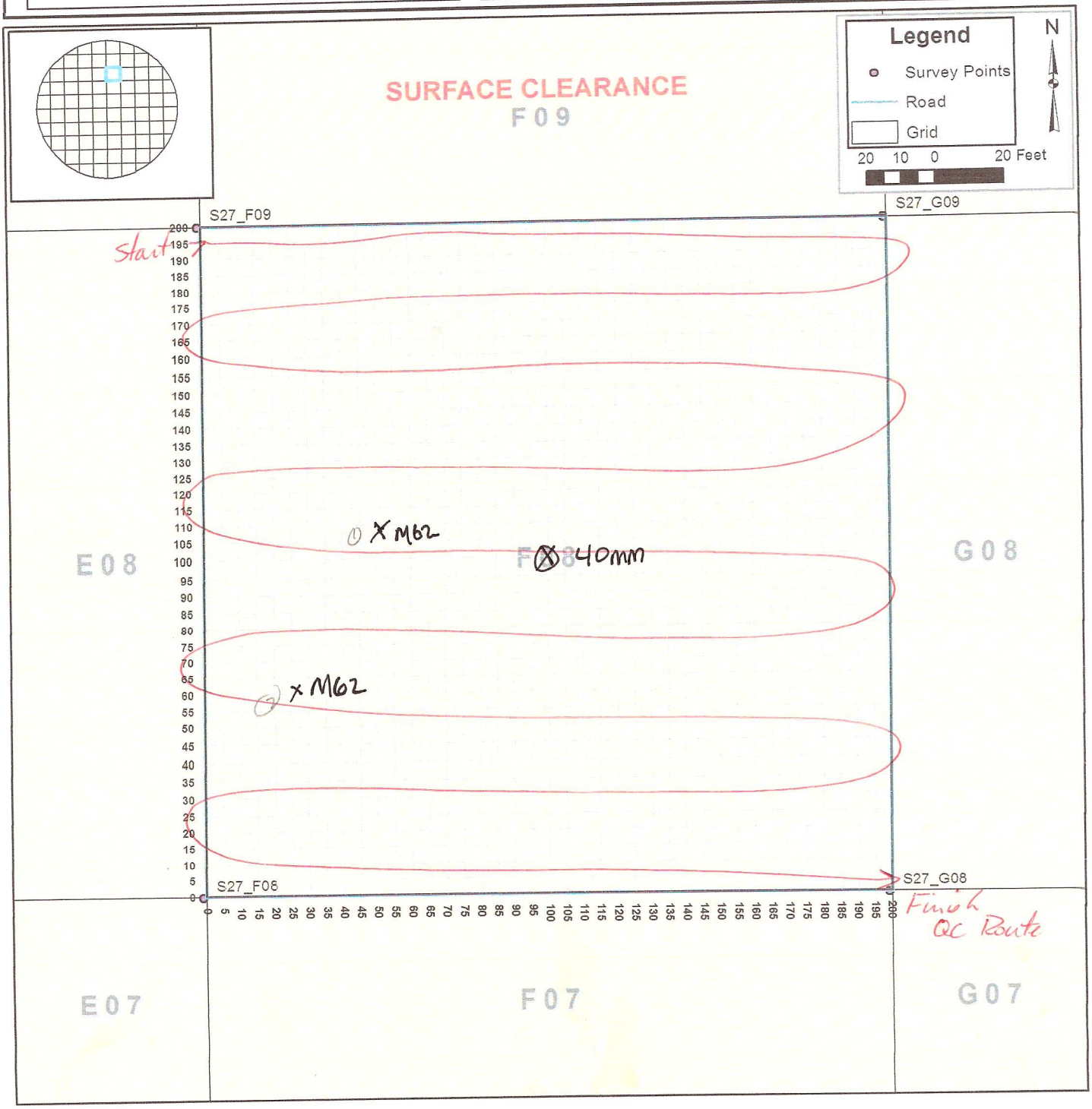
Digs: NA
MEC #: 2
MEC Debris: 65 lbs
Scrap Metal: 0 lbs

Seed:
X: 100'
Y: 100'

	P	F	Date
QC:	☒	☐	9/30/08
QA:	☒	☐	10/29/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
2	0"	M62 FLARE	Illuminant



00099839

S27 F-09 Team (1) 2 3

Date Started: 9-25-2008
Date Surveyed: NA
Date Gru:bbed: NA
Date Finished: 9-25-2008

Soil:
☐-Clay
☐-Limestone
☐-Loam
☒-Sand

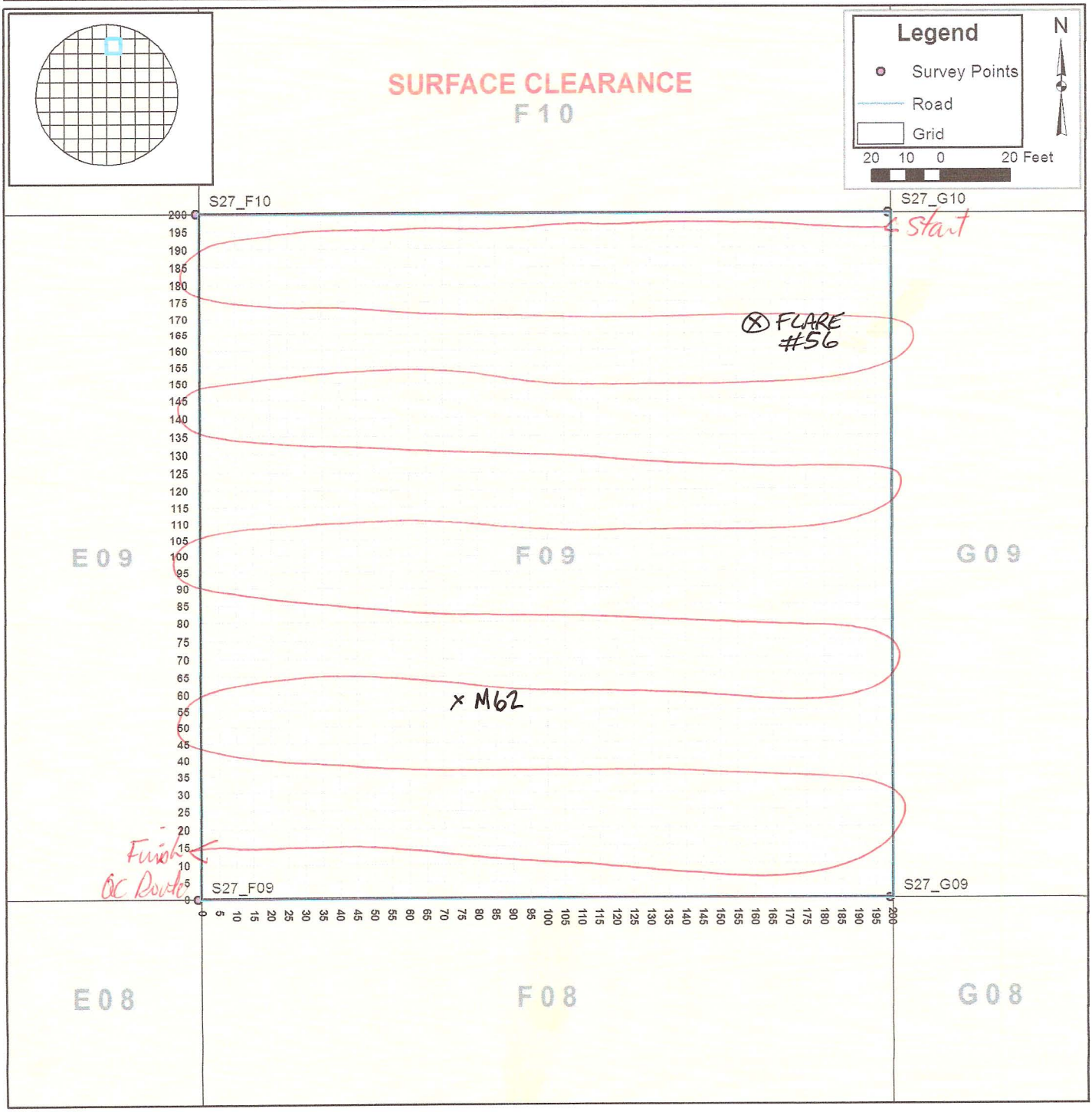
Digs: NA
MEC #: 1
MEC Debris: 25 lbs
Scrap Metal: 6 lbs

Seed:
X: 161'
Y: 168'

	P	F	Date
QC :	☒	☐	9/29/08
QA :	☒	☐	10/30/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	M62 FLARE	Illuminant



00099840

S27 F-10 Team (1) 2 3

Date Started: 9-25-2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 9-25-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 10 lbs

Scrap Metal: 0 lbs

Seed:

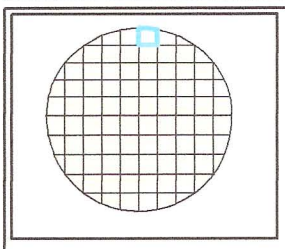
X: 174'

Y: 15'

	P	F	Date
QC :	☒	☐	9/29/08
QA :	☒	☐	10/30/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



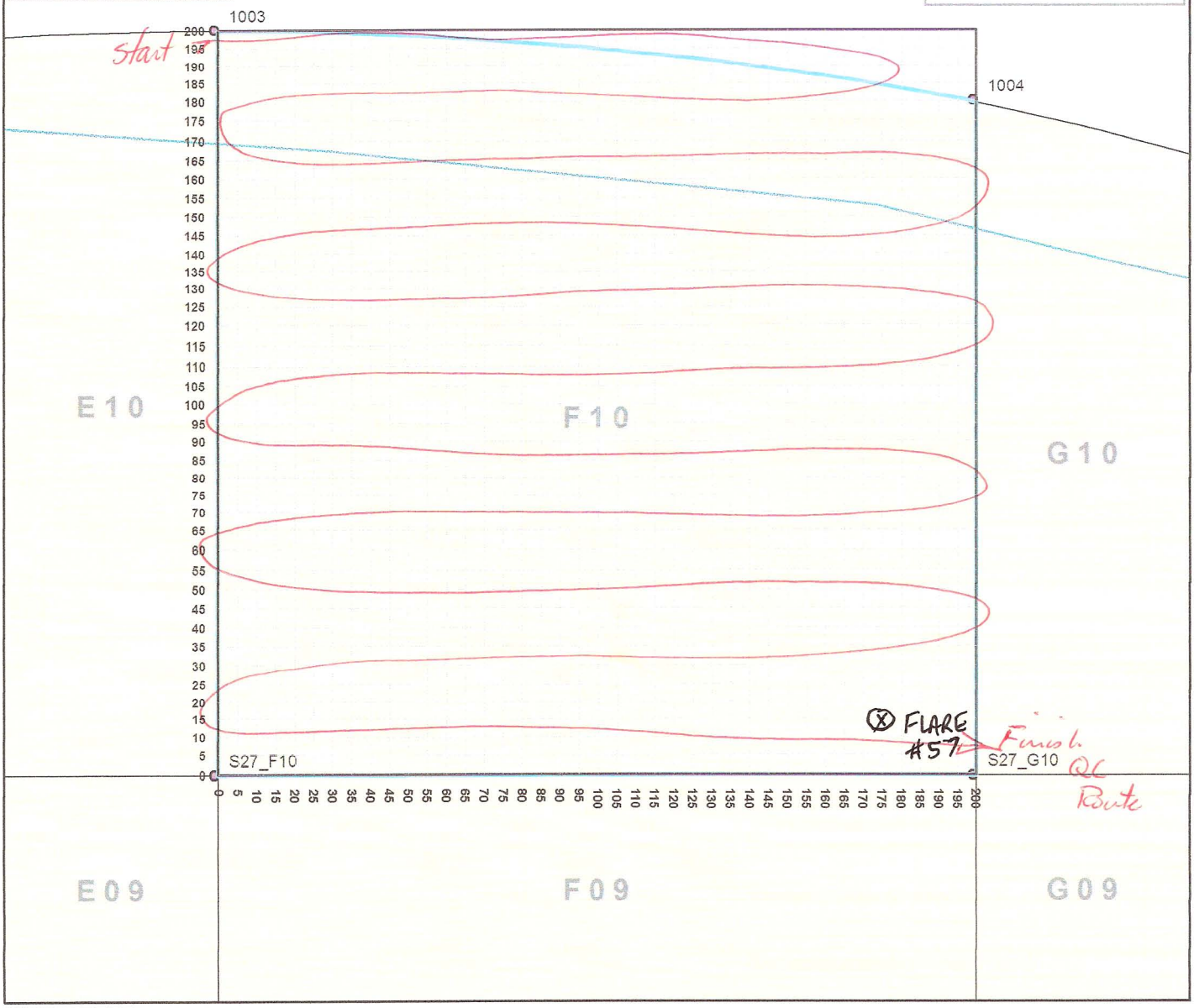
36

SURFACE CLEARANCE

Legend
- Survey Points
- Road
- Grid

20 10 0 20 Feet

N



00099841

S27 H-05

Team : 1 2 3

Date Started: 10-1-2008

Date Surveyed: NA

Date Gru:bbed: NA

Date Finished: 10-1-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: Na

MEC #: 01

MEC Debris: 185lbs

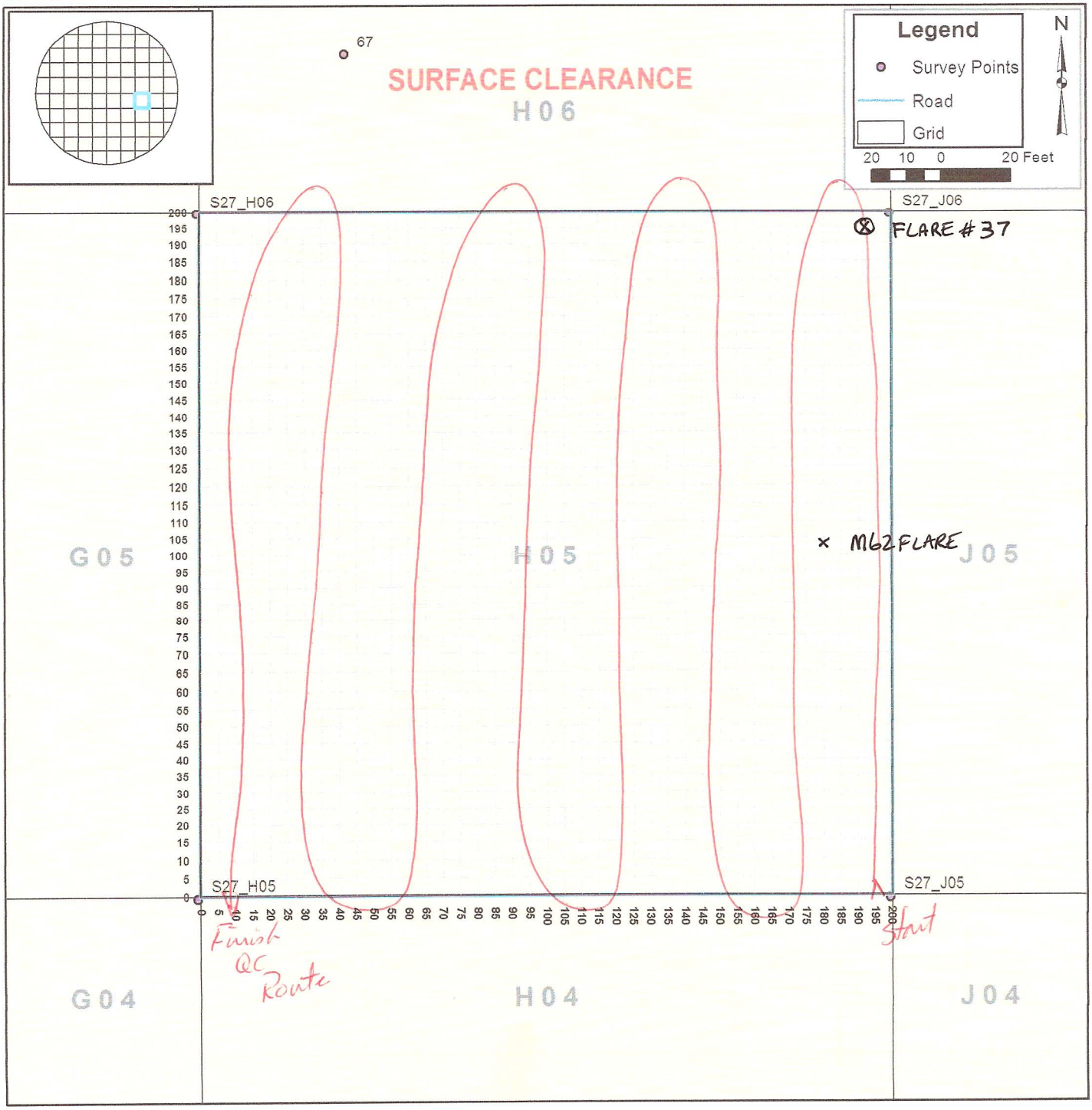
Scrap Metal: 0 lbs

Seed:
X: 193'
Y: 195'

	P	F	Date
QC :	☒	☐	10/02/08
QA :	☒	☐	10/31/08

Comments:

Qty	Depth(in)	Nomenclature	Filler
1	0"	M62 FLARE	Illuminant



00099842

S27 J-05

Team (1) 2 3

Date Started: 10-1-2008

Date Surveryed: NA

Date Gru:bbed: NA

Date Finished: 10-1-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 350 lbs

Scrap Metal: Ø lbs

Seed:

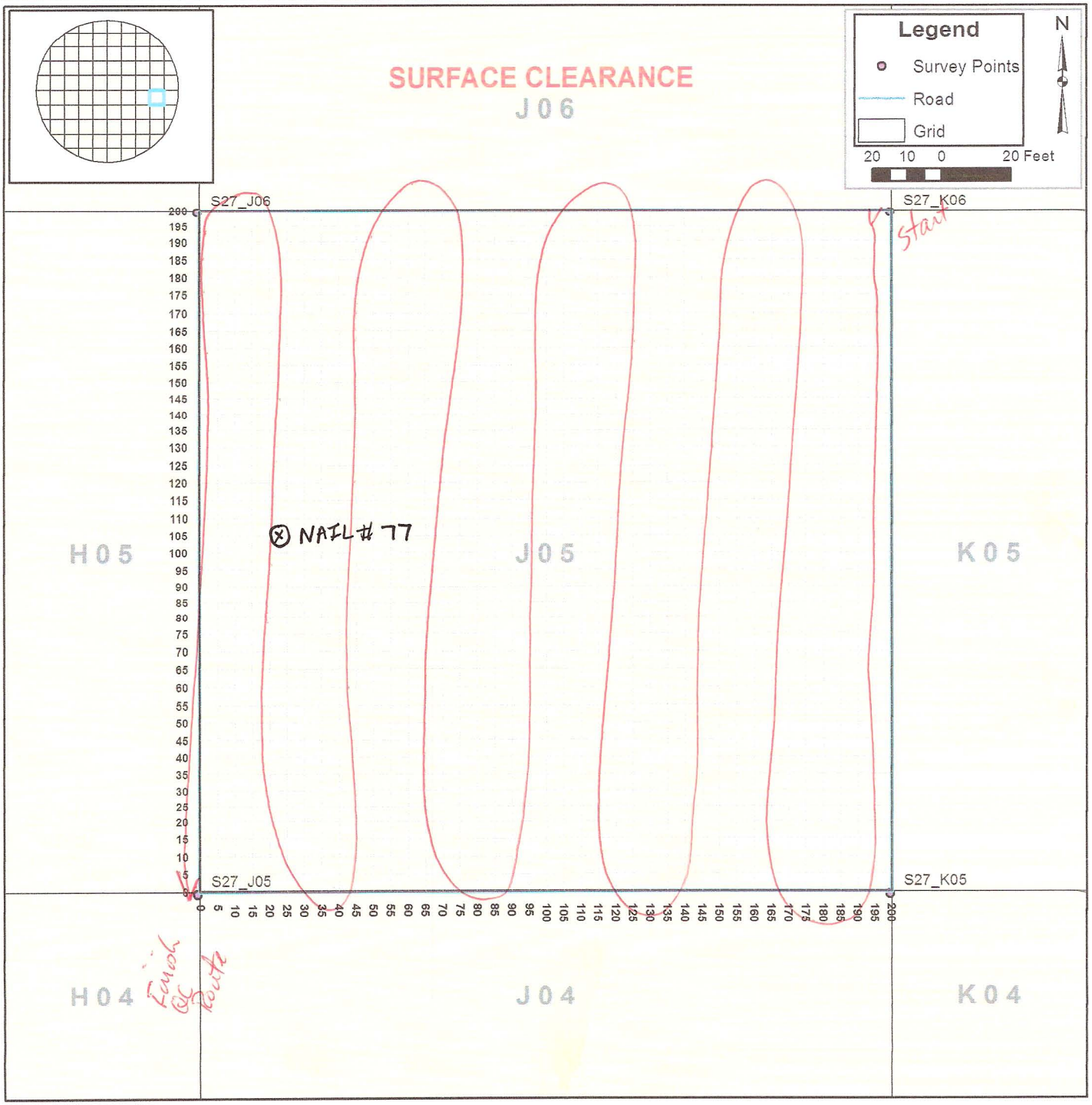
X: 23'

Y: 105'

	P	F	Date
QC :	☒	☐	10/02/08
QA :	☒	☐	10/31/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



00099843

S27 K-05

Team (1) 2 3

Date Started: 10-1-2008

Date Surveyed: NA

Date Grubbed: NA

Date Finished: 10-1-2008

Soil:
- ☐ -Clay
- ☐ -Limestone
- ☐ -Loam
- ☒ -Sand

Digs: NA

MEC #: NA

MEC Debris: 220 lbs

Scrap Metal: Ø lbs

Seed:

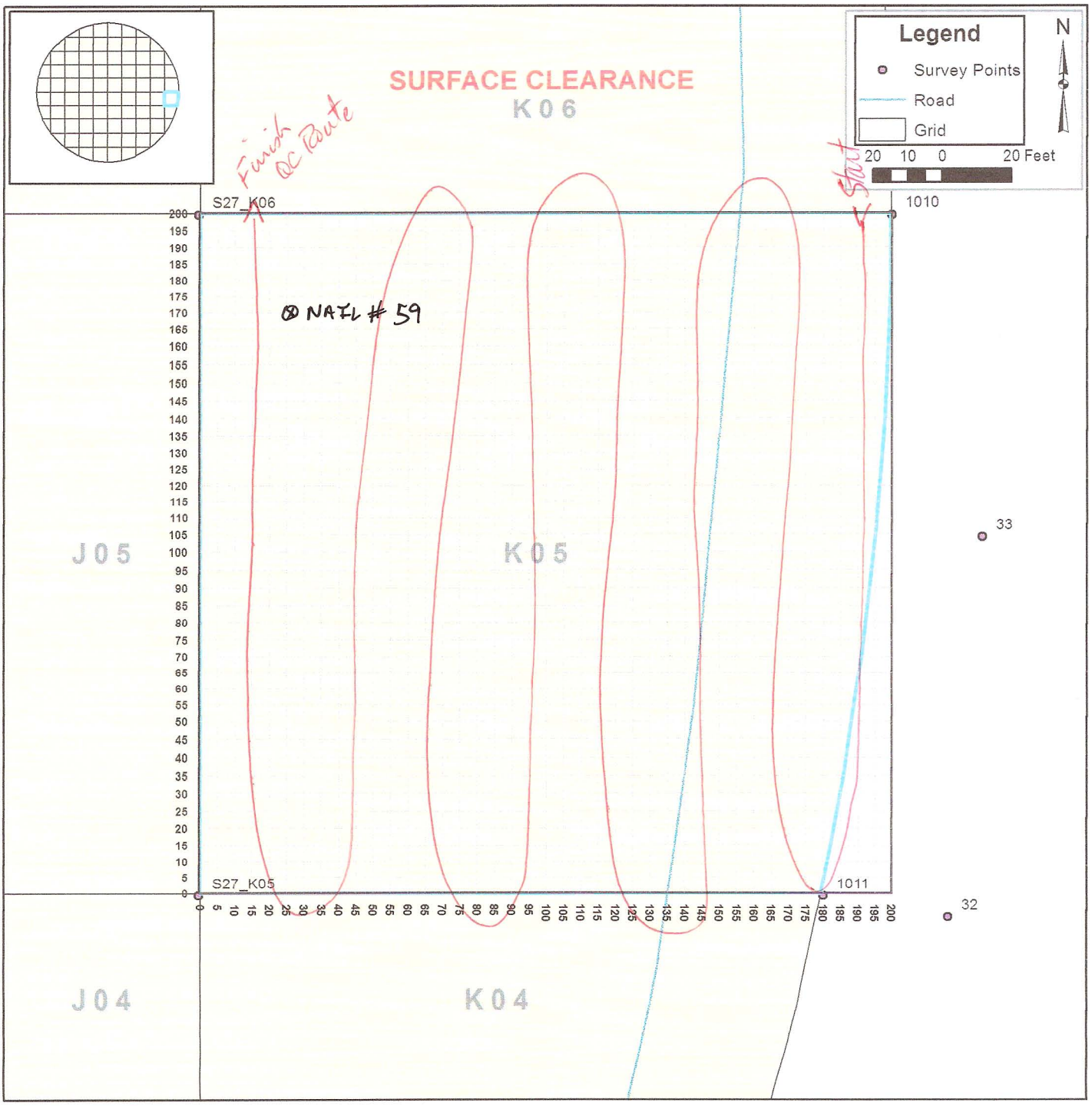
X: 26'

Y: 170'

	P	F	Date
QC :	☒	☐	10/02/08
QA :	☒	☐	10/31/08

Comments:

Qty	Depth(in)	Nomenclature	Filler



APPENDIX M
SCRAP CERTIFICATION

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

APPENDIX M
SCRAP CERTIFICATION

This appendix is included behind this page.

LHAAP Scrap Shipment Log											
# Trucks	**Date**	**Continer ID**	**Contents/Serial #'s**	**Ship to**	**Gross Weight**	**TARE**	**Adjustment**	**Net Weights**	**Driver**	**Container Type**	**Comments**
1	9/24/2008	4014-S54/S27-0001	RRD and Munitions Debris	TX Scrap & Salvage	45,280	37,600		7,680	White	25 yd. Roll-off Box	Long Iron
2		4014-S54/S27-0002	Munitions Debris	TX Scrap & Salvage	44,740	39,460	1,200	4,080	Green	25 yd. Roll-off Box	Aluminum
3	11/21/2008	USACE/LHAAP/EODT/0001	MD Steel / ULINE 2870731	River City Iron &Metal				0	R. Babb	8 x 16 Roll-off Box	
4		USACE/LHAAP/EODT/0002, 0003, 0004	Non-MEC Steel / ULINE 2870732 Non-MEC Steel / ULINE 2870733 Non-MEC Steel / ULINE 2870734	River City Iron &Metal				0	M. W. Emery	3 each 4 x 6 Roll-off Boxes	
					90,020	77,060	1,200	11,760			

Texas Scrap & Salvage, Inc.

Commercial & Industrial Recycling
100 Ward Street, Marshall, TX 75670
(903) 935-7891

MEMORANDUM

To: EOD Technology (EODT), 2229 Old Highway 95, Lenoir City, TN 37771
(ATTN: Brian Gentry)

From: Texas Scrap & Salvage Inc., 100 Ward Street, Marshall, TX 75670

Date: September 26, 2008

Re: DISPOSITION OF SCRAP MATERIAL RECEIVED FROM EODT AT THE FORMER LONGHORN ARMY AMMUNITION PLANT (LHAAP)

This memorandum is provided in accordance with the contractual requirements between EODT and USAESCH; (Contract: W912DY-04-0018; Task Order: 0014).

I affirm that the containers of scrap received from **EODT at LHAAP on September 24, 2008** will not be sold, traded or otherwise given to another party until they are processed by crushing, shredding, or smelting (only identifiable by their basic content) prior to being released for resale. I further affirm that this will be done in a timely manner, not to exceed 30 days. Proof of final disposition (the RRD and MD Inspection, Certification and Chain of Custody Form) has been signed, dated and returned to the EODT UXOQCS.

I confirm that the scrap was disposed in accordance with your needs and requirements.

Name of Recycler: Texas Scrap & Salvage, Inc.

Address: 100 Ward Street, Marshall, TX 75670

Phone: (903) 935-7819

Printed Name: ALLEN C. PETEET

Signature: Allen C. Peteet

00099848

DOC	IDE	FROM	MOS	UNIT	ISS	QUANTITY	SEA	SUPPLEMENTARY ADDRESS	SIC	FUND	DISTRIBUTION	PROJECT	PRI	AEOD	DELL	DRTL	ADV	N	OI	COND	NOT

UNIT PRICE DOLLARS	UNIT PRICE CTS	1. TOTAL PRICE DOLLARS	1. TOTAL PRICE CTS
$0	00	$0	00

2. SHIP FROM: EOD Technology, Inc. LHAAP, Karnack, TX

3. SHIP TO: Texas Scrap and Salvage, Marshall, TX

4. MARK FOR: RECYCLING

5. DOC Date	6. MMPC	7. PRT RATE	8. TYPE CARGO	9. PS
9/24/2008				

10. QTY. REC'D	11UP	12. UNIT WEIGHT	13. UNITCUBE	14. LOC	15. SL
0		pounds			

16. PRODUCT CLASSIFICATION NOMENCLATURE: RRD and Munitions Debris

17. ITEM NOMENCLATURE: RRD and Munitions Debris

18. TY CONT	19. NO CONT	20. TOTAL WEIGHT	21. TOTAL CUBE
25 yd. Roll-off Box	1	7,680 pounds	

22. RECEIVED BY: Doug B. Darnell

23. DATE RECEIVED: 9/24/2008

1

& SUFFIX (30-44)

STOCK NO. & ADD (8-22)

UI (23-24) QTY (25-29) COND CODE (71) DIST (54-56) UP (74-80)

Container Identification:

4014-S54/S27-001

Certified by:

Mick Doak, SUXOS
EODT Home Office (865)988-6063
LHAAP Field Office (256) 689-1268

Verified by:

Ken Barnett, USAESCH COE Safety
USAESCH OE Safety Office (256)895-1582/1598

This certifies and verifies that the material listed has been 100 percent properly inspected and to the best of our knowledge and belief, free of explosive hazards, engine fluids, illuminating dials and other visible liquid HTRW materials.

DD FORM 1348-1A

00099849

RRD and MD INSPECTION, CERTIFICATION AND CHAIN OF CUSTODY FORM

Project Location: LHAAP Karnack, TX		Contract No: W912DY-04-0018			Page 2 of 2
Line	Description	Source (eg., Grid or Range Identifier)	Container/Serial Number	Container Type	Unit WT/Vol.
1	RRD and Munitions Debris	S27 and ~~S27~~ S54	4014-S54/S27-001	25yd roll-off	7,680 lbs
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

NFE

Inspector's certification: I certify that the items or items listed hereon have been inspected by me and to the best of my knowledge and belief, contain no items of a dangerous or hazardous nature. I also certify that all items inspected were properly segregated.

Printed/Typed Name: Mick Doak, SUXOS 256 689-1628	Signature: Mick Doak	Date: 9/24/2008

QCS certification: I certify that the items or items listed hereon have been inspected by me and to the best of my knowledge and belief, contain no items of a dangerous or hazardous nature. I also certify that all items inspected were properly segregated.

Printed/Typed Name: Tom Hinote, UXOQCS 256 689-0353	Signature: Tom Hinote	Date: 9/24/2008

Transporter(s)	Transporter 1: Acknowledgement of materials properly sealed/secured.		
	Printed/Typed Name: GUY LAMON, JR.	Signature: Guy Lamon	Date: 9/24/2008
	Transporter 2: Acknowledgement of materials properly sealed/secured.		
	Printed/Typed Name:	Signature:	Date:
Final Disposition	Facility owner or operator: Certification of receipt of RRD and Munitions debris, except as noted above. Acknowledgement of materials properly sealed/secured.		
	Printed/Typed Name: GREG McCLELLAN	Signature: Greg McClellan	Date: 9/24/08

RRD and MD Chain of Custody Rev 0 10/03

00099850

DOC	IDE	FROM	MOS	UNIT	ISS	QUANTITY	SEA	SUPPLEMENTARY ADDRESS	SIC	FUND	DISTRIBUTION	PROJECT	PRI	AEOD	DELTL	ADV	N	OI	COND	NOT

1. TOTAL PRICE $0.00

UNIT PRICE $0.00 DOLLARS $0 CTS 00

DOLLARS $0 CTS 00

2. SHIP FROM: EOD Technology, Inc. LHAAP, Karnack, TX

3. SHIP TO: Texas Scrap and Salvage, Marshall, TX

4. MARK FOR: RECYCLING

5. DOC Date	6. MMPC	7. PRT RATE	8.TYPE CARGO	9. PS
9/24/2008				

10. QTY. REC'D	11UP	12. UNIT WEIGHT	13.UNITCUBE	14.LOC	15.SL
0		pounds			

& SUFFIX (30-44)

STOCK NO. & ADD (8-22)

UI (23-24) QTY (25-29) COND CODE (71) DIST (54-56) UP (74-80)

Container Identification:

4014-S54/S27-002

Certified by:

Mick Doak, SUXOS
EODT Home Office (865)988-6063
LHAAP Field Office (256) 689-1268

Verified by:

Ken Barnett, USAESCH COE Safety
USAESCH OE Safety Office (256)895-1582/1598

16. PRODUCT CLASSIFICATION NOMENCLATURE: Munitions Debris

17. ITEM NOMENCLATURE: Munitions Debris

18. TY CONT	19. NO CONT	20. TOTAL WEIGHT	21. TOTAL CUBE
25 yd. Roll-off Box	1	5,280 pounds	

22. RECEIVED BY

23. DATE RECEIVED: 9/24/2008

1

This certifies and verifies that the material listed has been 100 percent inspected and to the best of our knowledge and belief, are inert and/or free of explosives or related materials.

DD FORM 1348-1A

00099851

RRD and MD INSPECTION, CERTIFICATION AND CHAIN OF CUSTODY FORM

Project Location: LHAAP Karnack, TX		Contract No: W912DY-04-0018			Page 1 of 2
Line	Description	Source (eg., Grid or Range Identifier)	Container/Serial Number	Container Type	Unit WT/Vol.
1	Munitions Debris	S27 and ~~S27~~54	4014-S54/S27-001	25yd roll-off	5,280 lbs
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

NFE

Inspector's certification: I certify that the items or items listed hereon have been inspected by me and to the best of my knowledge and belief, contain no items of a dangerous or hazardous nature. I also certify that all items inspected were properly segregated.

Printed/Typed Name: Mick Doak, SUXOS 256 689-1628	Signature:	Date: 9/24/2008

QCS certification: I certify that the items or items listed hereon have been inspected by me and to the best of my knowledge and belief, contain no items of a dangerous or hazardous nature. I also certify that all items inspected were properly segregated.

Printed/Typed Name: Tom Hinote, UXOQCS 256 689-0353	Signature: Tom Hinote	Date: 9/24/2008

Transporter(s)	Transporter 1: Acknowledgement of materials properly sealed/secured.			
	Printed/Typed Name: Richard ~~Mendenhall~~ Mendenhall		Signature:	Date: 9/24/2008
	Transporter 2: Acknowledgement of materials properly sealed/secured.			
	Printed/Typed Name:		Signature:	Date:
Final Disposition	Facility owner or operator: Certification of receipt of RRD and Munitions debris, except as noted above. Acknowledgement of materials properly sealed/secured.			
	Printed/Typed Name: Gregg McClellan		Signature:	Date: 9/24/08

RRD and MD Chain of Custody Rev 0 10/03

River City

iron & metal inc.

P.O. Box 29100
Shreveport, LA 71149-9100
(318) 686-6905

To: EOD Technology (EODT), 2229 Old Highway 95, Lenoir City, TN 37771
(ATTN: Brian Gentry)

From: River City Iron & Metal Inc

Date:

Re: DISPOSITION OF SCRAP MATERIAL RECEIVED FROM EODT AT THE FORMER LONGHORN ARMY AMMUNITION PLANT (LHAAP)

As directed by Chapter 14 of EM 1110-1-4009, this letter is provided in accordance with the contractual requirements between EODT and USAESCH; (Contract: W912DY-04-0018; Task Order: 0014).

By my signature below, I agree with the provided supporting documentation (DD Form 1348 and Chain of Custody Form) that the sealed containers contain no explosive hazards.

I affirm that the scrap received from **EODT at LHAAP on** 11/21/08 will be processed by smelting, shredding, or flashing, only identifiable by it's basic contents, prior to being released for resale, trade or otherwise given to another party.

Name of Recycler: River City Iron & Metal, Inc.

Address: P.O. Box 29100, Shreveport, LA 71149 (8245 W. Antoine Loop, S'pt, LA 71129)

Phone: 318-688-3476

Printed Name: Mike W. Emery, Sr

Signature: Mike W Emery Sr

00099853

DOC	IDE	FROM	MOS	UNIT	ISS	QUANTITY	SEA	SUPPLEMENTARY ADDRESS	SIC	FUND	DISTRIBUTION	PROJECT	PRI	AEOL	DELT	ADV	N	OI	COND	NOT

UNIT PRICE $0.00 DOLLARS	CTS	DOLLARS	CTS
$0	00	$0	00

1. TOTAL PRICE $0.00

2. SHIP FROM
EOD Technology, Inc.
LHAAP, Karnack, TX
Site 27 & 54

3. SHIP TO
River City Iron & Metal Inc.
PO Box 29100
Shreveport, LA
71149-9100

4. MARK FOR
RECYCLING

5. DOC Date	6. MMPC	7. PRT RATE	8.TYPE CARGO	9. PS
11/21/2008				

10. QTY. REC'D	11UP	12. UNIT WEIGHT	13.UNITCUBE	14.LOC	15.SL
0		pounds			

16. PRODUCT CLASSIFICATION NOMENCLATURE
Munitions Debris - steel

17. ITEM NOMENCLATURE
Munitions Debris - steel

18. FY CONT	19. NO CONT	20. TOTAL WEIGHT	21. TOTAL CUBE
8 x 12 Roll-off	1	15,760	

22. RECEIVED BY

23. DATE RECEIVED
11/21/2008

& SUFFIX (30-44)

STOCK NO. & ADD (8-22)

UI (23-24) QTY (25-29) COND CODE (71) DIST (54-56) UP (74-80)

Location: Longhorn Army Ammunition Plant, Karnack, TX
Contractor: EOD Technology, Inc.

Container / Seal Identification:

USACE / LHAAP / EODT / 0001

ULLINE 2870731

Certified by:

Mick Doak, SUXOS
EODT Home Office (865)988-6063
LHAAP Field Office (256) 689-1268

Verified by:

Tim Bohannon, USAESCH COE Safety
USAESCH OE Safety Office (256)895-1582/1598

2

This certifies and verifies that the material listed has been 100 percent inspected and to the best of our knowledge and belief, are inert and/or free of explosives or related materials.

DD FORM 1348-1A

00099854

EODT
EOD TECHNOLOGY, INC.

AEDA/RANGE RESIDUE INSPECTION, CERTIFICATION, AND CHAIN OF CUSTODY FORM 120G

Project Location: LHAAP Karnack, TX		Contract No: W912DY-04-0018		Task Order No.: 0014	Page 1 of 1
Line	Description	Source (e.g., Grid or Range) Identifier)	Container/Serial Number	Container Type	Unit Wt./Vol.
1	Munitions Debris - Steel Scrap	LHAAP Site 54 and Site 27	USACE / LHAAP / EODT / 0001 MUNE 287731	8 X 12 Roll-off	15,760
2					
3					
4					
5					
6					

Inspector's certification: This certifies that the AEDA residue, Range Residue, and/or Explosive Contaminated Property listed has been 100 % properly inspected and, to the best of our knowledge and belief, are free of explosive hazards.

Printed/typed name: Tom Hinote	Signature: Tom Hinote	Date: 11/21/2008

Verifier certification: This certifies that the AEDA residue, Range Residue and/or Explosive Contaminated Property listed has been 100 % properly inspected and to the best of our knowledge and belief, are free of explosive hazards.

Printed/typed name: Mick Doak	Signature: Mick Doak	Date: 11-21-08

Transporter(s)			
	Transporter 1 acknowledgment of receipt of materials properly sealed/secured		
	Printed/typed name: Ralph BABB JR.	Signature: Ralph A. Babb	Date: 11-21-08
	Transporter 2 acknowledgment of receipt of materials properly sealed/secured		
	Printed/typed name:	Signature:	Date:

Final Disposition			
	Facility owner or operator: Certification of receipt of AEDA/Range Residue materials, except as noted above. Acknowledgment of receipt of materials properly sealed/secured.		
	Printed/typed name: M. Wade Mike Wade Emery	Signature: M. Wade	Date:

DOC	IDE	FROM	MOS	UNIT	ISS	QUANTITY	SEA	SUPPLEMENTARY ADDRESS	SIC	FUND	DISTRIBUTION	PROJECT	PRI	AEOD	DELT	DRT	ADV	N	OI	COND	NOT

UNIT PRICE $0.00 DOLLARS	CTS	DOLLARS	CTS
$0	00	$0	00

1. TOTAL PRICE $0.00

2. SHIP FROM: EOD Technology, Inc. LHAAP, Karnack, TX Site 27 & 54

3. SHIP TO: River City Iron & Metal Inc. PO Box 29100 Shreveport, LA

4. MARK FOR: RECYCLING

Location: Longhorn Army Ammunition Plant, Karnack, TX
Contractor: EOD Technology, Inc.

Container / Seal Identification:

USACE / LHAAP / EODT / 0002

ULINE 2870732

Certified by:

Mick Doak, SUXOS
EODT Home Office (865)988-6063
LHAAP Field Office (256) 689-1268

Verified by:

Tim Bohannon, USAESCH COE Safety
USAESCH OE Safety Office (256)895-1582/1598

5. DOC Date	6. MMPC	7. PRT RATE	8.TYPE CARGO	9. PS
11/21/2008				

10. QTY. REC'D	11UP	12. UNIT WEIGHT	13.UNITCUBE	14.LOC	15.SL
0		pounds			

16. PRODUCT CLASSIFICATION NOMENCLATURE: Munitions Debris - Aluminum

17. ITEM NOMENCLATURE: Munitions Debris - Aluminum

18. FY CONT	19. NO CONT	20. TOTAL WEIGHT	21. TOTAL CUBE
4 x 6 Roll-off	1	260	

22. RECEIVED BY: Mick Doak

23. DATE RECEIVED: 11/21/2008

2

& SUFFIX (30-44)

STOCK NO. & ADD (8-22)

UI (23-24) QTY (25-29) COND CODE (71) DIST (54-56) UP (74-80)

This certifies and verifies that the material listed has been 100 percent inspected and to the best of our knowledge and belief, are inert and/or free of explosives or related materials.

DD FORM 1348-1A

DOC	IDE	FROM	MOS	UNIT	ISS	QUANTITY	SEA	SUPPLEMENTARY ADDRESS	SIC	FUND	DISTRIBUTION	PROJECT	PRI	AEOD	DERL	ADV	N	OI	COND	NOT

UNIT PRICE $0.00 DOLLARS	CTS	DOLLARS	CTS	1. TOTAL PRICE $0.00	2. SHIP FROM	3. SHIP TO
$0	00	$0	00		EOD Technology, Inc. LHAAP, Karnack, TX Site 27 & 54	River City Iron & Metal Inc. PO Box 29100 Shreveport, LA

4. MARK FOR: RECYCLING

Location: Longhorn Army Ammunition Plant, Karnack, TX
Contractor: EOD Technology, Inc.

Container / Seal Identification:

USACE / LHAAP / EODT / 0003

ULINE 2870733

Certified by:

Mick Doak, SUXOS
EODT Home Office (865)988-6063
LHAAP Field Office (256) 689-1268

Verified by:

Tim Bohannon, USAESCH COE Safety
USAESCH OE Safety Office (256)895-1582/1598

5. DOC Date	6. MMPC	7. PRT RATE	8.TYPE CARGO	9. PS
11/21/2008				

10. QTY. REC'D	11UF	12. UNIT WEIGHT	13.UNITCUBE	14.LOC	15.SL
0		pounds			

16. PRODUCT CLASSIFICATION NOMENCLATURE: Non MEC - steel

17. ITEM NOMENCLATURE: Non MEC - steel

18. TY CONT	19. NO CONT	20. TOTAL WEIGHT	21. TOTAL CUBE
4 x 6 roll-off	1	1,660 pounds	

22. RECEIVED BY	23. DATE RECEIVED
M. Wade	11/21/2008

1

& SUFFIX (30-44)

STOCK NO. & ADD (8-22)

UI (23-24) QTY (25-29) COND CODE (71) DIST (54-56) UP (74-80)

This certifies and verifies that the material listed has been 100 percent inspected and to the best of our knowledge and belief, are inert and/or free of explosives or related materials.

DD FORM 1348-1A

DOC	IDE	FROM	MOS	UNIT	ISS	QUANTITY	SEA	SUPPLEMENTARY ADDRESS	SIC	FUND	DISTRIBUTION	PROJECT	PRI	AEOD	DELT	ADV	N	OI	COND	NOT

UNIT PRICE		DOLLARS	CTS
DOLLARS	CTS		
$0	00	$0	00

1. TOTAL PRICE $0.00

2. SHIP FROM
EOD Technology, Inc.
LHAAP, Karnack, TX
Site 27 & 54

3. SHIP TO
River City Iron & Metal Inc.
PO Box 29100
Shreveport, LA

4. MARK FOR
RECYCLING

Location: Longhorn Army Ammunition Plant, Karnack, TX
Contractor: EOD Technology, Inc.

Container / Seal Identification:

USACE / LHAAP / EODT / 0004

ULINE 2870734

Certified by:

Mick Doak, SUXOS
EODT Home Office (865)988-6063
LHAAP Field Office (256) 689-1268

Verified by:

Tim Bohannon, USAESCH COE Safety
USAESCH OE Safety Office (256)895-1582/1598

5. DOC Date	6. MMPC	7. PRT RATE	8.TYPE CARGO	9. PS
11/21/2008				

10. QTY. REC'D	11UF	12. UNIT WEIGHT	13.UNITCUBE	14.LOC	15.SL
0		pounds			

16. PRODUCT CLASSIFICATION NOMENCLATURE
Non MEC - steel

17. ITEM NOMENCLATURE
Non MEC - steel

18. TY CONT	19. NO CONT	20. TOTAL WEIGHT	21. TOTAL CUBE
4 x 6 roll-off	1	440 pounds	

22. RECEIVED BY	23. DATE RECEIVED
M. Wade	11/21/2008

1

& SUFFIX (30-44)

STOCK NO. & ADD (8-22)

UI (23-24) QTY (25-29)
COND CODE (71)
DIST (54-56)
UP (74-80)

This certifies and verifies that the material listed has been 100 percent inspected and to the best of our knowledge and belief, are inert and/or free of explosives or related materials.

DD FORM 1348-1A

EODT
EOD TECHNOLOGY, INC.

AEDA/RANGE RESIDUE INSPECTION, CERTIFICATION, AND CHAIN OF CUSTODY FORM 120G

Project Location: LHAAP Karnack, TX		Contract No: W912DY-04-0018		Task Order No.: 0014	Page 1 of 1
Line	Description	Source (e.g., Grid or Range) Identifier)	Container/Serial Number	Container Type	Unit Wt./Vol.
1	Munitions Debris - Aluminum	LHAAP Site 54 and Site 27	USACE / LHAAP / EODT / 0002 LLINE 2870732	4 x 6 Roll-off	260
2	Non-MEC Steel	LHAAP Site 54 and Site 27	USACE / LHAAP / EODT / 0003 LLINE 2870733	4 x 6 Roll-off	1660
3	Non-MEC Steel	LHAAP Site 54 and Site 27	USACE / LHAAP / EODT / 0004 LLINE 2870734	4 x 6 Roll-off	440
4					
5					
6					

Inspector's certification: This certifies that the AEDA residue, Range Residue, and/or Explosive Contaminated Property listed has been 100 % properly inspected and, to the best of our knowledge and belief, are free of explosive hazards.

Printed/typed name: Tom Hinote	Signature: Tom Hinote	Date: 11/21/2008

Verifier certification: This certifies that the AEDA residue, Range Residue and/or Explosive Contaminated Property listed has been 100 % properly inspected and to the best of our knowledge and belief, are free of explosive hazards.

Printed/typed name: Mick Doak	Signature:	Date: 11-21-08

Transporter(s)	Transporter 1 acknowledgment of receipt of materials properly sealed/secured		
	Printed/typed name: Mike Wade Emery Jr.	Signature: M. Wade E	Date: 11-21-08
	Transporter 2 acknowledgment of receipt of materials properly sealed/secured		
	Printed/typed name:	Signature:	Date:
Final Disposition	Facility owner or operator: Certification of receipt of AEDA/Range Residue materials, except as noted above. Acknowledgment of receipt of materials properly sealed/secured.		
	Printed/typed name: Mike Wade Emery	Signature: M. Wade E	Date: 11/21/08

APPENDIX N
LAND USE CONTROLS

FOR THE

MEC REMOVAL ACTION AT THE FORMER LONGHORN ARMY AMMUNITION PLANT LHAAP-001-R (SITE 27) AND LHAAP-003-R (SITE 54) KARNACK, TEXAS

Prepared for:

U.S. Army Engineering and Support Center, Huntsville
Attn: CEHNC-OE-DC (Mr. Doug Garretson)
4820 University Square
Huntsville, Alabama 35816-1822

U.S. Army Corps of Engineers, Tulsa District
Attn: CESWT-EC-ER (Mr. John Lambert)
1645 S. 101st East Avenue
Tulsa, Oklahoma 74128-4609

Contract: W912DY-04-D-0018
Task Order: 0014
Project Number: K06TX000503

Prepared by:

EODT
EOD TECHNOLOGY, INC.
2229 Old Highway 95
Lenoir City, TN 37771

September 2009

APPENDIX N
LAND USE CONTROLS

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ATTACHMENT 1 ..... Recordation
ATTACHMENT 2 ..... Pamphlet

ACRONYMS AND ABBREVIATIONS

CERCLA	Comprehensive Environment Response, Compensation, and Liability Act
CLNWR	Caddo Lake National Wildlife Refuge
LHAAP	Longhorn Army Ammunition Plant
LUC	Land Use Control
MEC	Munitions and Explosives of Concern
MRS	Munition Response Site
NCP	National Contingency Plan
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Services
UXO	unexploded ordnance

1.0 GENERAL

Following is the Land Use Controls (LUCs) report for the former Longhorn Army Ammunition Plant (LHAAP) Military Munitions Response Program sites, LHAAP-001-R (Site 27) and LHAAP-003-R (Site 54). The goal of the LUC report is to define the process to identify, design, implement, and maintain LUCs, which will promote ongoing protection to human safety following the munitions and explosives of concern (MEC) removal action. The LHAAP LUC report specifies in detail the controls that were applied at the LHAAP to ensure LUCs were effective. The LUC Plan was part of the site-wide LUC Management Plan

2.0 PURPOSE

The final remedies specified herein were chosen in accordance with Comprehensive Environment Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP). They are for the protection of human safety under the current and anticipated future land use of the site.

The LUC implementation and maintenance actions described herein will be effective immediately upon approval of the Work Plan as the primary document by the U.S. Army and U.S. Environmental Protection Agency (USEPA) Region VI with the concurrence of the Texas Commission on Environmental Quality (TCEQ), and was subject to the enforcement provisions of the September 11, 1991 Federal Facility Agreement. The requirements set forth in the Remedial Design addendum remained applicable to Site 27 and Site 54 during the Army's administrative control and that of subsequent transferees.

3.0 DESCRIPTION OF THE SITES

The site of the former LHAAP is located in east-central Texas in the northeastern corner of Harrison County, approximately 14 miles northeast of Marshall, Texas, and approximately 40 miles west of Shreveport, Louisiana. The former LHAAP property occupied more than 8,000 acres, approximately 7,000 of which have been transferred to the U.S. Fish and Wildlife Services (USFWS) as the Caddo Lake National Wildlife Refuge (CLNWR). The two Munitions Response Sites (MRSs), Site 27 and Site 54, are located within Army-retained land. Site 27, also known as the South Test Area, covers 74.84 acres and Site 54, also known as the Ground Signal Test Area, covers 79.5 acres. (See Figure N-1.)

The land use of the remaining property still under U.S. Army ownership, including Site 27 and Site 54, is as a closed ammunition plant, surrounded by the CLNWR. The most reasonably anticipated future land use of the MRS locations is incorporation into the existing wildlife refuge and will be used for the big six: hunting, fishing, wildlife observation, wildlife photography,

wildlife education, and wildlife interpretation. Another possibility for future land use is for oil and gas exploration.

Numerous studies and investigations sponsored by the Army have been conducted at the LHAAP dating back to the early 1980s. Data collected during the earlier studies may be reviewed in the Administrative Record located at the Marshall, Texas library. The most recent study at the MRSs addressed under this effort was a site inspection completed in June 2005 (e2M, 2005).

3.1 Site 27 (LHAAP-001-R) South Test Area

This area encompasses approximately 74.84 acres (see Figure N-2) and is located in the south-central portion of LHAAP. Site 27 was used for testing photoflash bombs and demilitarization of illuminating devices and leaking production items. The site was constructed in 1954 and used until the early 1980s. USFWS personnel indicated a 155-mm white phosphorous projectile was confirmed on the site in March 2004 and was disposed of by the local explosives ordnance disposal unit. The item was identified as a 155-mm smoke, white phosphorous, M825 canister. The item was found armed and was blown in place. The identification of this round as white phosphorous has been questioned by the Army. The historical record reviews conducted during previous investigations confirmed the production of 155-mm illumination rounds at LHAAP but no record of production of 155-mm white phosphorous rounds (other than metal projectile component) at LHAAP has been identified. According to USATHAMA (1989), white phosphorous operations at LHAAP were assembly and pack-out operations only; no loading of this material was conducted at the site.

According to the HRR, the following MEC are potentially associated with this site:

- M120A1 photoflash bombs
- Pyrotechnic illuminating devices
- XM 40E5 anti-intrusion mines
- Leaking white phosphorous munitions
- Photoflash cartridges (0.5 and 1 pound)

3.2 Site 54 (LHAAP-003-R) Ground Signal Test Area

This area encompasses approximately 79.5 acres (see Figures N-3a and N-3b). It is located in the southeast portion of LHAAP. Site 54 served as a test area for pyrotechnic munitions, a test and demilitarization area for rocket motors, and possibly a demolition area for XM40E5 anti-intrusion mines. A site visit conducted by the CESWF in December 2004 found a Mortar Test Area and numerous expended mortar rounds (munitions debris) were identified on the surface inside and outside the berm.

The following MEC are potentially associated with this site:

- Red phosphorus smoke wedges
- Infrared flares
- Pyrotechnic signal devices
- 60-mm illuminating mortars
- 81-mm illuminating mortars
- 4.2-inch illuminating mortars
- Illuminating munitions ranging from 40 mm to 155 mm
- Leaking White Phosphorous munitions
- XM40E5 anti-intrusion mines
- Nike rocket motors
- Sergeant rocket motors
- Pershing missile rocket motors.

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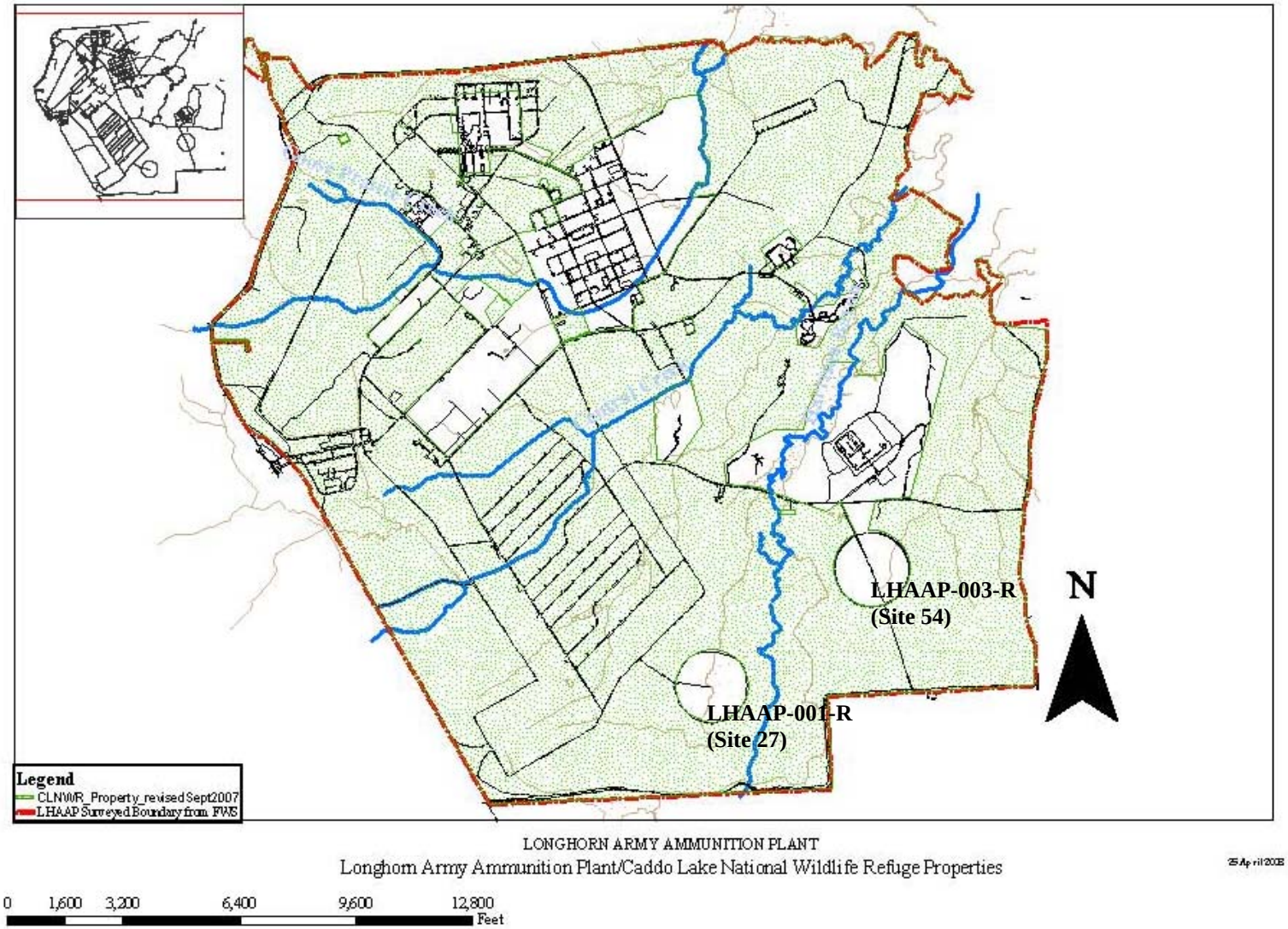

Figure N-1: Site Location Map

EODT
EOD TECHNOLOGY, INC.

DESCRIP	NORTHING	EASTING
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SIGN 05	3612896.4	393574.2
SIGN 06	3612866.9	393581.7
SIGN 07	3612839.1	393594.1
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SIGN 31	3612860.1	394137.3
SIGN 32	3612889.8	394143.8
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SIGN 37	3613040.9	394152.8
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SIGN 48	3613244.4	393951.4
SIGN 49	3613253.3	393922.2
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SIGN 51	3613259.5	393861.7
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SIGN 54	3613253.2	393770.8
SIGN 55	3613242.5	393742.2
SIGN 56	3613227.5	393715.8
SIGN 57	3613213.7	393688.6
SIGN 58	3613195.8	393664.0
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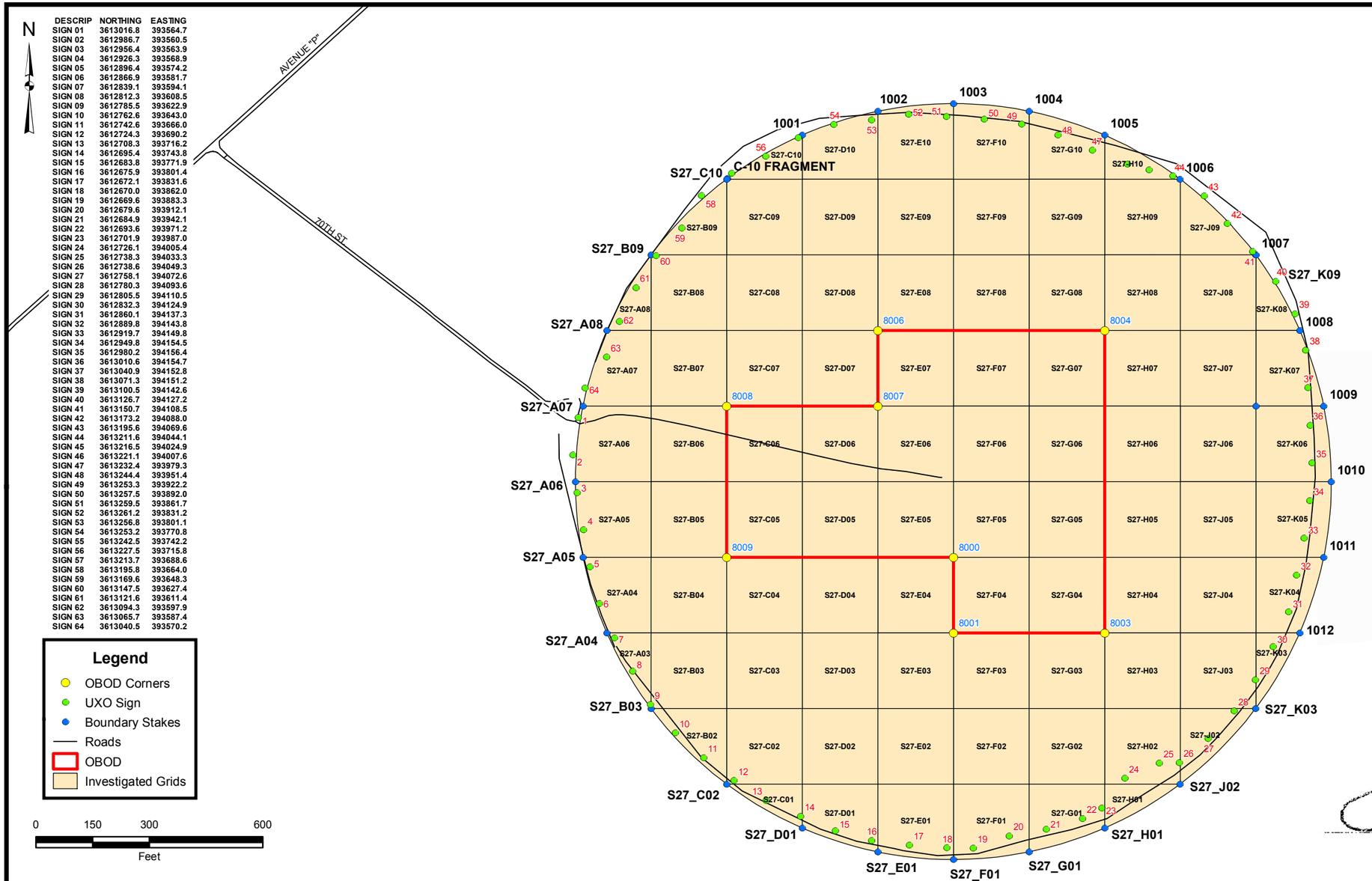

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8007	3613026.1	393806.4
8008	3613026.1	393684.4
8009	3612904.2	393684.4

DESCRIP	NORTHING	EASTING
1001	393745.4	3613244.5
1002	393806.4	3613263.8
1003	393867.3	3613269.9
1004	393928.3	3613263.8
1005	393989.2	3613244.5
1006	394050.1	3613209.0
1007	394111.0	3613148.0
1008	394146.5	3613087.0
1009	394165.8	3613026.1
1010	394171.9	3612965.1
1011	394165.8	3612904.2
1012	394146.5	3612843.2
C-10 FRAGMENT	393685.2	3613209.4
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S27_A05	393568.7	3612904.2
S27_A06	393562.5	3612965.1
S27_A07	393568.6	3613026.1
S27_A08	393587.9	3613087.1
S27_B03	393623.5	3612782.3
S27_B09	393623.5	3613148.0
S27_C02	393684.6	3612721.3
S27_C10	393684.4	3613209.0
S27_D01	393745.4	3612685.9
S27_E01	393806.4	3612666.6
S27_F01	393867.3	3612660.5
S27_G01	393928.3	3612666.7
S27_H01	393989.3	3612686.0
S27_J02	394049.9	3612721.3
S27_K03	394110.9	3612782.3
S27_K07	394111.2	3613026.1
S27_K09	394111.2	3613147.9

STATE OF TEXAS
REGISTERED
DAVID R. COLLINS
1954
PROFESSIONAL
LAND SURVEYOR

I, David R. Collins, Registered Professional Land Surveyor No. 1954, do hereby certify that this plat correctly represents the results of a survey made under my supervision August 4 through September 23, 2008.

Principal of the firm: _____

SUXOS: _____

Datum: NAD83 UTM
Monument: Longhorn Army Ammunition Plant
Monument BG-1 with coordinates
NORTHING-3614801.46,
EASTING-395385.09

Figure N-2: Site 27 Survey Certification Map

DESCRIP	NORTH	EAST	DESCRIP	NORTHIN	EASTING
SIGN 1	3614179.4	395143.2	1013	395068.6	3613625.2
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SIGN 12	3613924.6	394947.4	1016	395058.4	3614135.6
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SIGN 14	3613863.7	394949.6	1018	395241.3	3614203.9
SIGN 15	3613833.8	394955.1	1019	395302.2	3614200.9
SIGN 16	3613803.8	394959.8	1020	395363.2	3614185.9
SIGN 17	3613774.4	394967.8	1021	395392.4	3614173.9
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SIGN 19	3613718.3	394991.2	1023	395480.2	3614112.9
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SIGN 21	3613672.4	395031.1	1026	395546.1	3614020.2
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SIGN 39	3613710.2	395507.5	S54_B10	395032.6	3614112.9
SIGN 4	3614130.2	395066.2	S54_C02	395058.4	3613633.0
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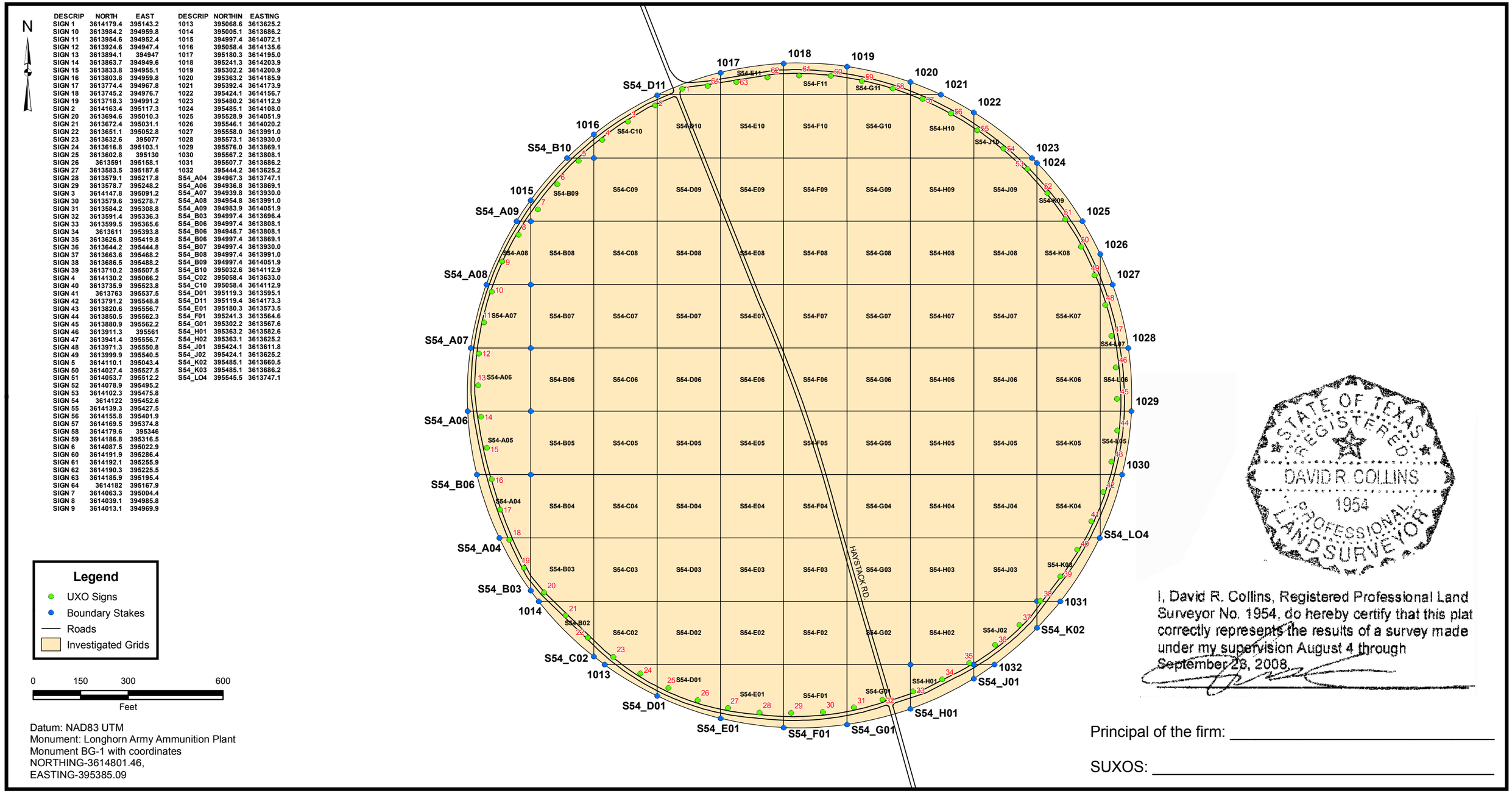

Figure N-3: Site 54 Survey Certification Map

4.0 LUC PERFORMANCE OBJECTIVES

The overall goal of the LUC was the protection of human safety against explosive hazards that may have remained at the site in the subsurface. The LUC performance objectives were as follows:

- Identify areas that could possibly contain MEC
- Ensure all possible personnel within the site boundaries were made aware of possible safety issues concerning MEC
- Restrict activities that could result in explosive safety risks

5.0 LUCs FOR THE SITES

- Restriction against intrusive activities, including digging
- Signage at perimeters of MRSs
- Education program

Once regulator concurrence has been received, the restriction against intrusive activities, including digging in the controlled areas, will be recorded in the Harrison County Clerk's Office, with the survey, map, and language as required by the Texas Administrative Code (TAC) Citation 335.569, Appendix III. The big six activities planned for the refuge visitors after transfer to USFWS are non-intrusive activities and, as mentioned in Section 3.0, include hunting, fishing, wildlife observation, wildlife photography, wildlife education, and wildlife interpretation.

The signage at the perimeters of MRSs was visible from one to the next and served as the physical demarcation of the controlled areas in the field. The signs included warning of the potential presence of unexploded ordnance (UXO), stated the restriction against intrusive activities, and provided a contact number.

The education program for future refuge visitors, staff and volunteers, is in the form of pamphlets and video warning of the potential presence of UXO and presenting examples of MEC that was or may be found at the sites.

6.0 LUC IMPLEMENTATION DETAILS

Until Site 27 and Site 54 are transferred, the Army or its representatives will be responsible for LUC implementation, maintenance, inspection, reporting and enforcement. The Army shall address LUC problems within its control that are likely to impact remedy integrity and shall address problems as soon as practicable. If periodic LUC inspections and maintenance are

required to address site-specific risks, the Army will be responsible for making the results available to the appropriate regulators.

As a condition of property transfer, the Army may require the transferee to assume responsibility for various implementation actions, as indicated below. Although the Army may transfer responsibility for various implementation actions, the Army shall retain its responsibility for remedy integrity. This means that the Army is responsible for addressing substantive violations of performance objectives that would undermine the Army's CERCLA remedy. The Army also will be responsible for: 1) incorporating Work Plan information and outlining the transferee's LUC obligations into property transfer documentation; 2) recording survey plat and notice of restrictions for both Site 27 and Site 54.

6.1 LUC Documentation

A restriction on intrusive activities will remain with Site 27 and Site 54 upon transfer. Notification of this restriction is to remain with these sites as provided within an Environmental Condition of Property Document to be developed prior to transfer of these sites. The restriction against intrusive activities, including digging, has been recorded in the Harrison County Clerk's Office with the survey, map, and language as required by TAC Citation 335.569. A copy of the recordation can be found in Attachment 1.

The signs were installed as described in the Performance Work Statement and the Work Plan. A photograph of the UXO awareness sign used for Site 27 and Site 54 is presented in Figure N-4. Site 27 had 64 safety signs and Site 54 also had 64 safety signs.

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Figure N-4: Signage

6.2 LUC Maintenance

- *Signs and Perimeter*: The boundaries of both sites were maintained by mowing the outer perimeter of the boundaries of Site 27 and Site 54 and insuring that the signs were visible and in place. Signs at a minimum were 10" × 12" and printed in English only. Signs will be maintained and replaced as needed.
- *Education Program*: Electronic copies of the safety brochures and safety video have been provided so additional copies can be made as needed.

6.3 LUC Monitoring and Reporting

6.3.1 Annual Inspections and Reporting

The U.S. Army will undertake annual physical inspections and reporting to confirm continued compliance with all LUC objectives. The Army will maintain copies of the annual inspections on-site and make them available to USEPA and TCEQ with an annual LUC Compliance Inspection document consistent with the forms attached here to as Figure N-5 (Site 27) and Figure N-6 (Site 54). In addition, should any deficiency(ies) be found during the annual inspection, the U.S. Army will provide to USEPA and TCEQ, along with the document, a separate written explanation indicating the specific deficiency(ies) found and what efforts or measures have or will be taken to correct those deficiencies. The need to continue annual inspections will be revisited at five year reviews.

Monitoring details would include, but not be limited to, periodic inspections of signs insuring that signs are in place and legible and mowing the perimeter, ensuring the boundary is identifiable. Inspections would also include walking the interior of the sites, inspecting for possible intrusive activities from visitors to the sites and conducting the annual inspections.

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Figure N-5: Sample Annual Land Use Control for Site 27
Compliance Inspection Documentation

In accordance with the LUC Plan dated _____ for Site 27, an inspection of site was conducted by _____ on _____.

A summary of land use control mechanisms is as follows:

- Perimeter signage
- Dig and intrusive activities restriction
- Education program

A summary of compliance with land use and restriction covenants is as follows:

- The posted signs are properly maintained at Site 27
- The perimeter is properly maintained around Site 27
- No digging or intrusive activities have taken place within the boundaries identified for Site 27
- Pamphlets and safety awareness video are being used to educate visitors

I, the undersigned, do document that the inspection was performed as indicated above, and that the above information is true and correct to the best of my knowledge, information, and belief.

Date: _____

Name: _____

Signature: _____

Completed annual compliance inspections shall be conducted no later than March 1 of each year for the previous calendar year and filed on site.

Figure N-6: Sample Annual Land Use Control for Site 54
Compliance Inspection Documentation

In accordance with the LUC Plan dated _____ for Site 54, an inspection of site was conducted by _____ on _____.

A summary of land use control mechanisms is as follows:

- Perimeter signage
- Dig and intrusive activities restriction
- Education program

A summary of compliance with land use and restriction covenants is as follows:

- The posted signs are properly maintained at Site 54
- The perimeter is properly maintained around Site 54
- No digging or intrusive activities have taken place within the boundaries identified for Site 54
- Pamphlets and safety awareness video are being used to educate visitors

I, the undersigned, do document that the inspection was performed as indicated above, and that the above information is true and correct to the best of my knowledge, information, and belief.

Date: _____

Name: _____

Signature: _____

Completed annual compliance inspections shall be conducted no later than March 1 of each year for the previous calendar year and filed on site.

6.3.2 CERCLA Five-Year Reviews

The U.S. Army shall conduct five-year reviews of the LHAAP-001-R and LHAAP-003-R remedies, as required by CERCLA and NCP, because the potential for MEC in the subsurface remains and could present a risk to human safety as a result of explosive hazard. As part of the CERCLA Section 1221© Five-Year Review, the U.S. Army shall prepare a report certifying the continued effectiveness of the remedy including all LUCs implemented at LHAAP-001-R and LHAAP-003-R. The report will include the information contained in the annual reports and an evaluation of LUCs to determine if the LUCs or the inspection and reporting requirements need modification and that an inspection of the sites to document that the basis for the MEC risk assessment remains unchanged.

7.0 NOTICE OF PLANNED PROPERTY CONVEYANCE

The U.S. Army shall provide notice to USEPA and TCEQ of such intended property conveyance. The notice shall describe the mechanism by which LUCs will continue to be implemented, maintained, inspected, reported, and enforced.

8.0 LUC ENFORCEMENT

The U.S. Army, in accordance with CERCLA, will ensure the LUCs are specified, implemented, monitored, reported on, and enforced in an efficient, cost-effective manner that ensures long-term protectiveness. The U.S. Army will be responsible for enforcement of the LUC. Enforcement objectives are listed below:

- Conduct CERCLA five-year remedy review
- Conduct periodic monitoring or visual inspections of LUC
- Report inspection results
- Notify regulators prior to any changes in the risk, remedy or land use, including any LUC failures, with proposed corrective action
- Include a map of the site where LUCs are implemented

ATTACHMENT 1
RECORDATION

The recordation information can be found behind this page.

STATE OF TEXAS

(Harrison) COUNTY

INDUSTRIAL SOLID WASTE

NOTICE OF LAND USE CONTROLS AT Site LHAAP-027 (LHAAP-001-R) AND Site-LHAAP-054 (LHAAP-0003-R)

KNOW ALL MEN BY THESE PRESENTS THAT:

Pursuant to the Rules of the TCEQ pertaining to Industrial Solid Waste Management, this document is hereby filed in the Deed Records of Harrison County, Texas in compliance with the recordation requirements of said rules:

I

The U.S. Army has performed a removal of munitions and explosives of concern at the former Longhorn Army Ammunition Plant (LHAAP) for the land described herein. The removal site is formerly known as Site 27, South Test Area/Bomb Test Area (LHAAP-001-R) and the Site 54, Ground Signal Test Area (LHAAP-003-R). Site 27 encompasses approximately 79 acres and was used for testing photoflash bombs and demilitarization of illuminating devices and leaking production items. Site 54 encompasses approximately 80 acres and was used as a test area for pyrotechnic munitions and the testing and demilitarization of rocket motors. The LHAAP installation was placed on the National Priorities List (NPL) in August 1990. After its listing on the NPL, the U.S. Army, United States Environmental Protection Agency (USEPA) and TCEQ (formerly known as the Texas Water Commission) entered into an agreement under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Section 120 for remedial activities. The CERCLA Section 120 Agreement referred to as the Federal Facility Agreement (FFA), became effective on December 30, 1991. Removal activities at Sites 27 and 54 were performed in accordance with the FFA requirements. The MEC Removal Action included the removal of all detected items at the surface of Sites 27 and 54 and the removal of

all detected items in the subsurface of a 13.7 acre OBOD Area of Site 27, using best available technology and methods. Although not detected, there is the possibility that MEC remains in the subsurface and the sites can not be considered suitable for unrestricted use. Therefore, land use controls (LUCs) restricting intrusive activities is required. Munitions chemical constituents are characterized not to present a risk to human health and the environment. Further information may be found by examination of the Administrative Record available at the Marshall Public Library, 300 S. Alamo Blvd, Marshall, Texas 75760, (903) 935-4465, Monday through Thursday 10:00 a.m. to 8:00 p.m., Friday and Saturday 10:00 a.m. to 5:30 p.m.

The Texas Commission on Environmental Quality (TCEQ) derives its authority to review the remediation of this tract of land from Texas Health and Safety Code, §361.002, which enables the TCEQ to promulgate closure and remediation standards to safeguard the health, welfare and physical property of the people of the State and to protect the environment by controlling the management of solid waste. In addition, pursuant to the Texas Water Code, §5.012 and §5.013, Texas Water Code, Annotated, Chapter 5, the TCEQ is given primary responsibility for implementing the laws of the State of Texas relating to water and shall adopt any rules necessary to carry out its powers and duties under the Texas Water Code. In accordance with this authority, the TCEQ requires certain persons to provide recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation. This deed certification is not a representation or warranty by the TCEQ of the suitability of this land for any purpose nor does it constitute any guarantee by the TCEQ that the remediation standards specified in this certification have been met by U. S. Army.

II

The Site 27 parcel is a 79 acre tract, more or less, and Site 54 is an 80 acre tract, more or less, located at the former LHAAP in Harrison County, Texas, near the town of Karnack, being more particularly described with the survey plat and metes and bounds established in Exhibit A. LUC boundaries are designated and presented for the entire tract as described in Exhibit A.

Future use of the parcels is intended as a national wildlife refuge consistent with non-residential use. The United States Department of the Army has undertaken careful environmental study of Sites 27 and 54 and concluded that the LUCs set forth below are required to ensure protection of human health and the environment.

(1) No Digging Restriction -Restriction against intrusive activities, including digging in the controlled areas, will be recorded in the Harrison County Clerk's Office, with the survey, map, and language as required by the Texas Administrative Code (TAC) Citation 335.569

(2) Warning Signage - The signage will be placed at the perimeters of Sites 27 and 54. They will be visible from one to the next and serve as the physical demarcation of the controlled areas in the field. The signs include warning of the potential presence of unexploded ordnance (UXO), the restriction against intrusive activities, and provide a contact number.

(3) Educational Awareness Training -Will be provided in the form of pamphlets and video warning of the potential presence of UXO and presenting examples of MEC that was or may be found at the sites.

The owner of the site is the Department of the Army, and its address where more specific information may be obtained is as follows:

ATTN: DAIM-ODB-LO (R. Zeiler)

Post Office Box 220

Ratcliff, AR 72951

or

Assistant Chief of Staff for Installation Management

ATTN: DAIM-BDO (T. Lederle)

600 Army Pentagon

Washington D.C. 20310-0600

Rose M. Zeiler

Longhorn AAP Site Manager

Notary

EXECUTED this day _____ day of September, 2009

BEFORE ME, on this the __day of _____personally appeared Rose M. Zeiler, of the United States Army, United States Department of Defense, known to me to be the person and agent of said agency whose name is subscribed to the foregoing instrument, and she acknowledged to me that she executed the same for the purposes and in the capacity therein expressed.

GIVEN UNDER MY HAND AND SEAL OF FIICE, THIS THE __DAY OF ____, 2009

ATTACHMENT 2
PUBLIC INFORMATION PAMPHLET

This pamphlet can be found behind this page.

Investigation Results

During the course of the Removal Action at the former Longhorn Army Ammunition Plant (LHAAP) EODT removed several types of Illumination Munitions. There were no High-Explosive munitions found during the removal action performed by EODT.

Below is a list with nomenclature and quantity of the MPPEH and Inert items that were found with the boundaries of Sites 27 and 54.

MPPEH

40mm ground signal illumination rounds		2
155mm illumination candle		1
M583 A1 40mm		2
M206 Flare		1
M127 Flare		4
Flare Candles		2
M62 illumination flares		145
M112 illumination flares		237
M123 Flare		1
M12 Cartridge		1
		0
TOTAL:		396

INERT/ Empty

4.2" illumination mortar		1
155mm Illumination Rounds (empty)		12
4.2" illumination mortar		1
155mm Illumination Rounds (empty)		1
Total:		15

EODT also removed over 30,000 lbs of Munitions Debris (MD) and scrap metal or range related Debris (RRD) from within the boundaries of Sites 27 and 54.

EODT
EOD TECHNOLOGY, INC.

Recognize– If you think you have found an Unexploded Ordnance, Do not touch it!

Retreat-Leave the area the same way you entered.

Report-Contact the local law enforcement office or fire department.

CONTACT YOUR LOCAL AUTHORITIES:

U.S. FISH AND WILDLIFE
903-679-9144
POLICE DEPARTMENT
903-923-4000
FIRE DEPARTMENT
903-923-4000

What you should know about Unexploded Ordnance (UXO) Hazards

at the Former Longhorn Army Ammunition Plant (LHAAP)

Karnack, Texas

00099881

The History of the Former Longhorn Army Ammunition Plant

The Former Longhorn Army Ammunition Plant (LHAAP) was established in October 1942 with the primary mission of producing trinitrotoluene (TNT) flake. TNT production continued until August 1945 when the plant went on standby status. When operations resumed at LHAAP in 1952, the plant began manufacturing pyrotechnic ammunition, which included photoflash bombs, simulators, hand signals, and tracer ammunition.) This continued until 1956.

However, in 1955 the LHAAP rocket motor facility had begun operations, and production of these motors continued to be the primary mission of LHAAP until 1965, when the production of pyrotechnic and illuminating ammunition was reestablished. From that time through 1994, operations consisted of producing pyrotechnic and propellant mixtures; loading, assembling and packing equipment as they applied to mobilization planning and demilitarization/demolition of leaking ordnance containing white phosphorous (WP) filler.

LHAAP was declared excess and placed in inactive status in 1997.

00099882

Recognize, Retreat, and Report if a Suspicious Object is Found!

Possible UXOs at LHAAP

The LHAAP is land that was formerly owned, leased, possessed, or operate by the Department of Defense (DoD.)

Over the years, most of the DoD sites were used for various military training exercises involving explosives or, like LHAAP, were used to manufacture explosives. Whether used as live fire ranges, bombing practice or explosive manufacturing, these sites have the potential for containing explosive hazards, called Unexploded Ordnances (UXOs.)

Most of the sites requiring these types of cleanups are no longer operational and have not been for many years, but the threat of the explosives remains. It is estimated that for every 100 bombs that exploded, 10 did not, and those items, or ordnances, still remain active and can extremely dangerous if disturbed or moved.

The explosives come in many shapes and sizes and can appear in many forms after years of being buried, so it is advised that if a suspicious item is found on or near one of these sites, you should **Recognize, Retreat and Report.**

What is being done to protect you?

Congress committed funding in the 1980s to clean up properties that the DoD once used but no longer controls. The Army is the executive agent that manages the projects, and the Army is the organization that executes the projects, which includes former Army, Navy, and Air Force, and other defense agency sites.

There is a significant number of sites that potentially qualify for funding, but first information about the origin and extent of the contamination, land transfer issues, past and present property ownership, and program policies must be evaluated for each site to determine if it meets the criteria for clean-up efforts.

Below demonstrates the general phases of a cleanup project:

Phase 1- Inventory

Determine if property was used by DoD, and if its contaminated from DoD activity.

→

Phase 2- Investigation

If the answer is yes, an investigation is conducted to determine the nature and extent of contamination.

→

Phase 3- Cleanup

Once complete, the cleanup efforts begin in order to protect human health, safety and the environment

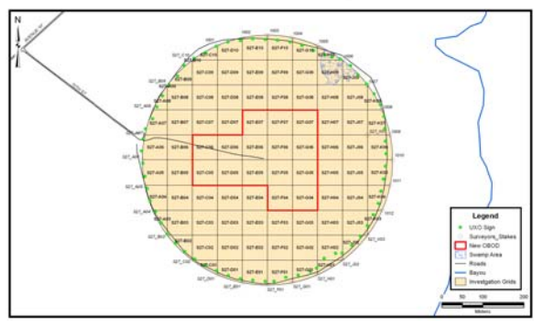
Cleanup Efforts at LHAAP

In 2005, the United States Army conducted an investigation (Phase 1) and determined there was, in fact, contamination on the LHAAP site. Because of the findings, the Army ordered an Engineering Evaluation/Cost Analysis (EE/CA) to determine the nature and extent of the contamination (Phase 2); that effort was completed in 2006. Phase 3 of the cleanup efforts were completed in November of 2008.

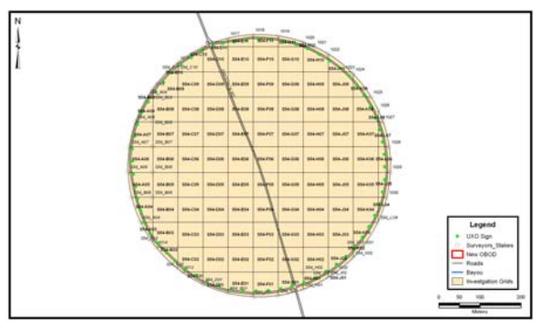
With Phase 3 now completed, the LHAAP site is now a lot safer. This site still continue to pose a potential threat because there is no way to guarantee that ALL ordnances were removed. Therefore, it is important to remember to always remember the 3 Rs—Recognize, Retreat, Report.

Below are examples of the various shapes and sizes of UXOs that were found during the Phase 3 cleanup.

LHAAP Site Map



Site 27



Site 54

54	H04	4	Nail	14	191	1	8/14/2008	8/19/2008	
54	J03	5	40mm practice	61	180.5	1	8/14/2008	8/21/2008	
54	J04	6	81mm body	108	51	1	8/14/2008	8/21/2008	
54	G05	7	Slap Flare	137.5	193.5	3	8/14/2008	8/18/2008	
54	G06	8	Nail	196	32.5	3	8/14/2008	8/19/2008	
54	F07	9	40mm practice	159	104	1	8/14/2008	9/15/2008	
54	G07	10	40mm cart.	52.5	125	3	8/14/2008	8/21/2008	
54	G08	11	Flare	2.5	45	3	8/14/2008	8/21/2008	
54	F08	12	Nail	155	19	1	8/14/2008	9/18/2008	
54	E08	13	81mm body	199.5	197	3	8/14/2008	8/27/2008	
54	E09	14	Slap Flare	192.5	105	3	8/14/2008	8/26/2008	
54	F09	15	40mm practice	40	122.5	3	8/14/2008	8/25/2008	
54	E10	16	Nail	188	88	3	8/14/2008	8/26/2008	
54	F10	17	81mm Tailbm	167	120	3	8/14/2008	8/25/2008	
54	G09	18	Slap Flare	60	179.5		8/14/2008	9/9/2008	
54	G10	19	Nail	46	42	3	8/14/2008	8/25/2008	
54	E11	20	Nail	18	4	3	8/18/2008	8/26/2008	
54	F11	21	Nail	149	30	3	8/18/2008	8/25/2008	
54	G11	22	40mm cart.	13	83	3	8/18/2008	8/25/2008	
54	H11	23	Nail	25	12	1	8/18/2008	8/27/2008	
54	H10	24	Slap Flare	58	152	1	8/18/2008	8/27/2008	
54	J10	25	Slap Flare	32	19	1	8/18/2008	8/27/2008	
54	J09	26	Nail	10	169	1	8/18/2008	8/27/2008	
54	K09	27	40mm practice	72	5	1	8/18/2008	8/25/2008	
54	K08	28	Slap Flare	43	158	1	8/18/2008	8/25/2008	
54	L08	29	Nail	30	4	1	8/18/2008	8/25/2008	
54	L07	30	Slap Flare	30	176	1	8/18/2008	8/25/2008	
54	K07	31	Flare	130	144	1	8/18/2008	8/25/2008	
54	L06	32	Slap Flare	32	46	1	8/18/2008	8/25/2008	
54	L05	33	Nail	15	132	1	8/18/2008	8/25/2008	
54	K05	34	40mm	136	183	1	8/18/2008	8/25/2008	

			practice						
54	K06	35	Nail	122	54	1	8/18/2008	8/25/2008	
54	K04	36	Slap Flare	170	177	1	8/18/2008	8/26/2008	
54	L04	37	Slap Flare	5	188	1	8/18/2008	8/26/2008	
54	K03	38	Slap Flare	22	59	1	8/18/2008	8/26/2008	
54	K02	39	Nail	28	177	1	8/18/2008	8/26/2008	
54	J01	40	Slap Flare	11	186	1	8/18/2008	8/21/2008	
54	J02	41	Nail	43	67	1	8/18/2008	8/21/2008	
54	G01	42	Slap Flare	175	165		8/18/2008	9/4/2008	
54	H01	43	Slap Flare	26	180	1	8/18/2008	8/21/2008	
54	H09	44	Slap Flare	155	22	1	8/19/2008	8/27/2008	
54	H08	45	Nail	176	180		8/19/2008	8/28/2008	
54	J08	46	Slap Flare	20	178	1	8/19/2008	8/27/2008	
54	J07	47	Slap Flare	60	150	1	8/19/2008	8/26/2008	
54	H07	48	40mm cart.	118	147		8/19/2008	9/3/2008	
54	H06	49	Nail	191	132		8/19/2008	9/3/2008	
54	J06	50	Slap Flare	64	166	1	8/19/2008	8/26/2008	
54	H05	51	Slap Flare	196	90		8/19/2008	9/3/2008	
54	J05	52	Nail	70	104	1	8/19/2008	8/26/2008	
54	F01	53	Slap Flare	24	131		8/19/2008	9/4/2008	
54	E01	54	Nail	184	152		8/19/2008	8/28/2008	
54	E02	55	40mm cart.	195	30		8/19/2008	8/28/2008	
54	F02	56	Slap Flare	30	59		8/19/2008	9/3/2008	
54	E03	57	Slap Flare	173	102		8/19/2008	8/28/2008	
54	F03	58	Nail	90	125		8/19/2008	9/3/2008	
54	G02	59	Nail	10	197		8/19/2008	9/3/2008	
54	G03	60	Slap Flare	71	17		8/19/2008	9/3/2008	
54	F04	61	Nail	19	98		8/19/2008	9/3/2008	
54	E04	62	Slap Flare	185	75		8/19/2008	8/28/2008	
54	E05	63	Slap Flare	159	97	1	8/19/2008	9/16/2008	
54	F05	64	40mm cart.	6	102	1	8/19/2008	9/15/2008	
54	F06	65	Nail	1	1	1	8/19/2008	9/15/2008	
54	E07	66	Slap Flare	191	17	1	8/19/2008	9/16/2008	
54	E06	67	Slap Flare	109	170	1	8/19/2008	9/16/2008	
54	D11	68	Nail	192	16		8/20/2008	9/4/2008	

54	D10	69	Nail	19	30		8/20/2008	9/4/2008	
54	C10	70	Nail	163	1		8/20/2008	9/8/2008	
54	D09	71	Nail	65	106		8/20/2008	9/4/2008	
54	C09	72	Nail	169	124		8/20/2008	9/9/2008	
54	C08	73	Slap Flare	183	106		8/20/2008	9/9/2008	
54	D08	74	Nail	57	127		8/20/2008	9/4/2008	
54	D07	75	Nail	42	176		8/20/2008	9/9/2008	
54	C07	76	Nail	198	198		8/20/2008	9/8/2008	
54	D06	77	Nail	22	18		8/20/2008	9/10/2008	
54	D05	78	Nail	7	194		8/20/2008	9/5/2008	
54	C06	79	Slap Flare	192	22		8/20/2008	9/8/2008	
54	C05	80	Nail	193	152		8/20/2008	9/8/2008	
54	D04	20	Nail	54	33		9/3/2008	9/5/2008	
54	D03	50	Slap Flare	99	124		9/3/2008	9/5/2008	
54	C04	30	Slap Flare	181	22		9/3/2008	9/8/2008	
54	C03	15	40mm practice	188	197		9/3/2008	9/8/2008	
54	D01	13	81mm body	11	71		9/3/2008	9/4/2008	
54	D02	47	Slap Flare	59	80		9/3/2008	9/4/2008	
54	C01	52	Nail	75	20		9/3/2008	9/3/2008	
54	C02	32	Slap Flare	100	49		9/3/2008	9/8/2008	
54	B02	39	Nail	92	9		9/3/2008	9/4/2008	
54	B03	25	Slap Flare	133	49		9/3/2008	9/4/2008	
54	B04	27	40mm practice	172	147		9/3/2008	9/4/2008	
54	B05	17	81mm Tailbm	100	45		9/3/2008	9/4/2008	
54	B06	81	Nail	128	60		9/3/2008	9/5/2008	
54	B07	46	Slap Flare	97	7.5		9/3/2008	9/5/2008	
54	B08	14	Slap Flare	29	153		9/4/2008	9/5/2008	
54	B09	83	Nail	130	55		9/4/2008	9/5/2008	
54	B10	45	Nail	3	2		9/4/2008	9/5/2008	
54	A08	82	Nail	188	166		9/4/2008	9/8/2008	
54	A09	44	Slap Flare	24	31.5		9/4/2008	9/5/2008	
54	A07	62	Slap Flare	41	17.5		9/4/2008	9/8/2008	
54	A06	55	40mm cart.	118	45		9/4/2008	9/8/2008	

LONGHORN ARMY AMMUNITION PLANT,

Karnack, Texas

MONTHLY MANAGERS' MEETING

AGENDA

DATE:	Friday, 21 January 2011
TIME:	10:00 am.
PLACE:	Teleconference - Call In Number Courtesy of Shaw: 866-797-9304/4155734

Welcome **RMZ**

Action Items

TCEQ

- Provide update on document review for LHAAP-65.

Shaw

- Provide analytical suite for discharge water at the GWTP
- Survey sumps at LHAAP-35/36
- Check that the FS for LHAAP-29 is in the Marshall Library and that CLI was provided a copy when it was submitted.
- Collect a sample from effluent water in the pond and report results

EPA – Topics for Discussion **TZ**

- Gauges in Harrison Bayou near GWTP
- RODs, RDs and schedule

Defense Environmental Restoration Program (DERP) PBC Update **PS/SGW**

- Document Status/Environmental Sites (Table)
- INF Pond Status
- Groundwater Treatment Plant

DERP Total Environmental Restoration Contract Update **RMZ**

- LHAAP-37/67 – Status of RD Comments

MMRP Update **RMZ**

- Address EPA-TCEQ Responses to Perchlorate Memo

Other Issues **RMZ**

- USFWS Sampling at Site 49
- Sump location with the plug
- Sitewide Schedule Review – Critical Documents
- Media Tour
- RAB Tour of GWTP and Sitewide

USFWS Update **RMZ/PB**

- Environmental Restoration Issues with Transfer Schedule Impact

Adjourn

Shaw® Shaw Environmental, Inc.

Subject: **Final Minutes, Monthly Managers Meeting, Longhorn Army Ammunition Plant (LHAAP)**

Location of Meeting: **Teleconference**
Date of Meeting: **January 21, 2011; 10:00 AM – 11:00 AM**

Meeting Participants:

BRAC:	Rose M. Zeiler
USACE-Tulsa:	Aaron Williams, John Lambert
USAEC:	Marilyn Plitnik
Shaw:	Praveen Srivastav, Kay Everett
USEPA Region 6:	Steve Tzhone
TCEQ:	Fay Duke, Dale Vodak
USGS:	Kent Becher
USFWS:	Paul Bruckwicki, Barry Forsythe

Welcome **Rose M. Zeiler**

Action Item Status:

TCEQ

- Provide update on document review for LHAAP-65- *in progress*

Shaw

- Provide analytical suite for discharge water at the GWTP - *completed*
- Survey sumps at LHAAP-35/36 – *in progress*
- Check that the FS for LHAAP-29 is in the Marshall Library and that CLI was provided a copy when it was submitted. - *completed*
- Collect a sample from the effluent water in the pond and report results. – *completed*

Shaw -- Topics for Discussion

- Gauges in Harrison Bayou near GWTP
- RODs, RDs and schedule

Defense Environmental Restoration Program (DERP) PBC Update **Praveen Srivastav**

Document Status/Environmental Sites
Praveen Srivastav went over the document status/environmental sites table.

- LHAAP-03: Received and currently addressing TCEQ comments.

- LHAAP-04: Received EPA and TCEQ comments on the draft final completion report. Currently addressing regulatory comments. The preliminary draft FS for LHAAP-04 is in preparation.
- LHAAP-16: The preliminary draft ROD is in Army's review.
- LHAAP-17: Preliminary draft ROD is being prepared.
- LHAAP-18/24: The RTCs for regulatory comments are in Army's review.
- LHAAP-29: RTC resolution is in progress on the preliminary draft Proposed Plan.
- LHAAP-46: The RODs were signed 9/30/10 and submitted. Currently addressing Army comments on the draft Remedial Design for LHAAP-46.
- LHAAP-47: Responses to Army's comments on revised Draft FS for LHAAP-47 have been submitted.
- LHAAP-50: Army comments have been received on the preliminary draft RD for LHAAP-50 and are currently being addressed.
- LHAAP-58: Army comments have been received on the preliminary draft RD for LHAAP-58 and are currently being addressed.

INF Pond Status
Repairs to the liner were previously implemented in two locations, and eradication of trees and saplings growing in or on the liner is being implemented. After the trees have died, the stumps will be ground down to surface, a check on the liner will be made (it is thought some of the trees are growing through the liner), and repairs to the liner will be made. Creeks are flowing so discharge to the pond has not been necessary. There is a 5.75 feet of freeboard.

Groundwater Treatment Plant
Winterizing of some of the lines and systems within the plant has been executed, so groundwater extraction at the plant has been up and down. Kent indicated that the last quarterly report sampling showed MW22 may indicate an increase in detections. Shaw will look at the data and provide any input on increase in concentrations.

DERP Total Environmental Restoration Contract Update

LHAAP-37/67 –Status of RD
The RD is being finalized. Comments received from TCEQ.

MMRP Update

Address EPA- TCEQ Responses to Perchlorate Memo
There is nothing new to discuss for this section. The Army is currently working on this.

Other Issues
USFWS Sampling at Site 49
Paul Bruckwicki indicated that they are finishing up the sample results presentation on the sampling conducted at LHAAP-49. He said that sample results looked good. Rose asked Paul to provide the results to the group. Paul responded that the results would be provided during the RAB meeting.

Sump location with the plug
Paul and Kent looked at this and brought up the question.

Site-wide Schedule Review – Critical Documents
There is nothing new to discuss for this section.

There was a discussion of what the TAG reviews. Steve said they looked at certain things and that they would especially review all Proposed Plans and would look at some of the RODs and FSs and RDs. There was a question of what version of the document would the TAG have to review. Steve said he needed to think about that. Rose noted that only the Proposed Plan actually undergoes public review. Steve stated that some of the reviews for these documents mentioned are "courtesy" reviews in that they do not go up for community comments (RDs, RODs, FSs). He said that there are certain things for the community to look at but not necessarily for them to comment on as in a formal public review.

Media Tour
The media tour is scheduled for 9AM on Tuesday, January 25, and is being coordinated with the Army's public liaison office. At this time neither EPA nor TCEQ is planning to be present. As such, the tour participants will consist of Richard Pruitt, the videographer, the Army, and Shaw. Marilyn will be coming in late Monday and will be given a brief tour of the sites the next afternoon, after the media tour. An abbreviated managers' meeting will be held at 5PM before the RAB meeting at 6:30PM.

RAB Tour of GWTP and Sitewide
The RAB tour will commence the morning of Wednesday, January 26. Participants will be instructed to meet in the FWS parking lot at 9AM. They will caravan and should be finished by noon. The plan is to focus on some of the more active sites such as LHAAP-16, -17, -18/24, -29, and -47. Rose also suggested they could drive by the MMRP sites, too. She asked Shaw to prepare some maps of the sites so that they can refer to them during the tour.

USFWS Update
Environmental Restoration Issues with Transfer Schedule Impact
Paul commented that remedies are coming in on the back side of the process. There are many remedies that require data collection and alteration or modification of a remedy after a remedy has been implemented. He said that was contrary to normal CERCLA process where he said all data was collected and evaluated before any remedies were selected. Army said that the remedies selected all adhere to the goal of protecting human health and the environment first and foremost. Rose urged FWS to submit comments if not already covered by EPA/TCEQ.

Action Items
Shaw

- Confirm with field personnel that the gauges in Harrison Bayou are being used (recorded) when gauging wells at the GWTP
- Check MW-22 sampling results for last couple months to determine any plume changes
- Confirm the exact date of next sampling event in March at GWTP so that EPA can split samples as part of QA.

Meeting Adjourned

Next meeting is tentatively set February 22, 2011 at 2 p.m. as a teleconference.

LONGHORN ARMY AMMUNITION PLANT
MONTHLY MANAGERS' MEETING

Location	teleconference		
Date	21-Jan-2011	**Time**	10:00 AM

ATTENDEES

Name (printed)	Signature	Organization	Phone	E-mail
Longhorn Team Members				
Rose M. Zeiler	X	BRAC	(479) 635-0110	rose.zeiler@us.army.mil
Andrew Maly		USAEC	(210) 424-8829	andrew.maly@us.army.mil
Marilyn Plitnik	X	USAEC	(210) 424-8368	marilyn.a.plitnik@us.army.mil
Aaron Williams	X	USACE, Tulsa	(918) 669-4915	aaron.k.williams@usace.army.mil
John Lambert	X	USACE, Tulsa	(918) 669-4992	john.r.lambert@SWT03.usace.army.mil
Stephen Tzhone	X	USEPA, Dallas	(214) 665-8409	tzhone.stephen@epa.gov
Terry Burton		USEPA, Dallas	(214) 665-7139	Burton.Terry@epa.gov
Kent Becher	X	USGS, Dallas	(817) 253-0356	kdbecher@usgs.gov
Fay Duke	X	TCEQ, Austin	(512) 239-2443	fduke@tceq.state.tx.us
Dale Vodak	X	TCEQ, Tyler	(903) 535-5147	dvodak@tceq.state.tx.us
Barry Forsythe	X	USFSW, Dallas	(214) 665-8467	forsythe.barry@epa.gov
Paul Bruckwicki	X	USFSW, Karnack	(903) 679-4536	paul_bruckwicki@fws.gov
Mark Williams		USFSW, Karnack	(903) 679-9144	mark_williams@fws.gov
Praveen Srivastav	X	SHAW, Houston	(281) 531-3188	praveen.srivastav@shawgrp.com
Susan Watson		SHAW, Houston	(281) 531-3107	susan.watson@shawgrp.com
Kay Everett	X	SHAW, Houston	(281) 531-3121	kay.everett@shawgrp.com

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Status of Sites and Technical Documents
Longhorn Army Ammunition Plant – PBC Contract
January 21, 2011

No.	Document in Progress	Submittal Date	Army	Regulator	Next Submittal	Expected Date	Army	Regulator	Comment Resolution	Status	**Remarks**
1	Draft Final Soil Removal Work Plan, LHAAP-03	11/15/10	x	x	Final	01/27/11	x	x	In progress	Addressing TCEQ comments	
2	Draft Final Completion Report, LHAAP-04	05/24/10	x	x	Final	2/10/11	x	x	In progress	Regulatory comments received.	
3	Preliminary Draft FS, LHAAP-04	1/28/11	x							In preparation	
4	Preliminary Draft ROD, LHAAP-16	11/17/10	x		Draft	2/15/11	x	x	In progress	In Army's review	
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6	Draft (Final) Feasibility Study, LHAAP-18/24	5/13/09	x	x	Draft Final	02/15/11	x	x	In progress	Received EPA and TCEQ comments on 8/5/10. Responses in Army review	
7	(Preliminary) Draft Proposed Plan, LHAAP-29	5/21/10	x		Draft Proposed Plan	1/26/11	x	x	In progress	RTC resolution in progress	
8	Draft Remedial Design, LHAAP-46	10/1/10	x		Draft Final	2/15/11	x	x	In progress	Addressing Army comments	

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Status of Sites and Technical Documents
Longhorn Army Ammunition Plant – PBC Contract
January 21, 2011

No.	Document in Progress	Submittal Date	Army	Regulator	Next Submittal	Expected Date	Army	Regulator	Comment Resolution	Status	**Remarks**
9	Revised Draft Final Feasibility Study, LHAAP-47	10/27/10	x		Revised Draft Final to Army	2/15/11	x	x	In progress	Received Army comments. Preparing responses. Submitted response.	
10	(Preliminary) Draft Remedial Design, LHAAP-50	12/13/10	x		Draft	02/15/11				Received Army comments. Preparing responses	
11	Draft Remedial Design, LHAAP-58	11/22/10	x		Draft to Regulators	2/15/11	x	x	In progress	Received Army comments. Preparing responses.	

Shaw® Shaw Environmental, Inc.

Subject:	**Final Minutes, Monthly Managers Meeting-Abbreviated Longhorn Army Ammunition Plant (LHAAP)**
Location of Meeting:	**Longhorn Army Ammunition Plant Trailer**
Date of Meeting:	**January 25, 2011; 5:00 PM – 6:15 PM**

Meeting Participants:

BRAC:	Rose M. Zeiler
US Army-Public Affairs:	Ross Atkins
USACE-Tulsa:	Aaron Williams
USAEC:	Marilyn Plitnik
Shaw:	Praveen Srivastav, Kay Everett
USEPA Region 6:	Steve Tzhone
TCEQ:	Fay Duke
USGS:	Kent Becher, Greg Mobley
USFWS:	Paul Bruckwicki, Barry Forsythe

Welcome **Rose M. Zeiler**

New meeting participants were introduced including Marilyn Plitnik with AEC, who will be taking Matt Mechenes' and Andy Maly's place, Ross Atkins with USACE-Tulsa Public Affairs Office who was present for the media tour that had taken place earlier in the day, and Craig Mobley with USGS out of Fort Worth and on behalf of the EPA.

Defense Environmental Restoration Program (DERP) PBC Update **Praveen Srivastav**

Document Status/Environmental Sites
A discussion was held on getting the LHAAP-29 ready for a public meeting by February 22, although the Proposed Plan is still in draft form. Praveen indicated that the LHAAP-29 PP will be coming to the regulators within a week. Meeting a February 22 schedule may be problematic since regulators have not seen the PP yet, but a mid-March date could probably be met.

Army legal has been clarifying language in the ROD for LHAAP-17. These changes will be highlighted and Steve said he would coordinate with George so they can see readily what the language changes would entail. The RODs for LHAAP-16 and 17 are coming. LHAAP-46 RD is slightly ahead of the RDs for LHAAP-50 and -58. The FS for LHAAP-47 is in preparation with Shaw. The draft FS for LHAAP-04 is expected to go to the Army by the end of the month (January) addressing groundwater at the site.

Praveen indicated that Shaw is planning to get the RDs turned around quickly and to start MNA sampling soon so that Shaw could get in the field by summer for the RD work to start. He also indicated that soil removal at LHAAP-03 and LHAAP-50 are being planned with injections at LHAAP-58 and quarterly sampling at LHAAP-46, 50, and 58 to be initiated. He said that once the RDs are approved, then a schedule will be setup.

Fay asked about the groundwater report for LHAAP-12. The report is in progress with resolution to comments with the Army about to be wrapped up. For the March sampling, Praveen said that an email will be sent out when the exact date for sampling will occur. It is planned that 15 to 20 wells will be sampled and that EPA can pick which wells they would like to split for QA. A groundwater data report was requested for the number of groundwater samples collected from June through December with 5 or 6 different criteria. A report can be run from the database.

Paul Bruckwicki asked about the update on the railroad ties. Rose indicated she had requested money to have these ties properly disposed because of the creosote issues and if the ties could be used for fuel when disposed. Fay was going to find out what the threshold values may be for doing this. Paul said that these ties are in or near some areas where they are planning to burn and that their burn period is from February through March.

Paul Bruckwicki was asked by Rose to share the sampling results for Site 49. Paul responded that he would provide during the RAB meeting.

Kent said he is reviewing the LHAAP-18/24 quarterly report. Fay said she still owes comments to the Army on LHAAP-65.

Rose said she needs to get the LHAAP-8 and LHAAP-59 affidavits notarized and would like to do so with the completed surveys of the sumps at LHAAP-48 and -53. (This survey work is ongoing and should be completed within the next few weeks. There are 16 sumps—12 at LHAAP-48 and 4 at LHAAP-53).

Fay mentioned that Longhorn's Notice of Registration (NOR) needs to be updated to reflect current conditions.

Adjourn.

Action Items
Shaw

- Run groundwater data report from June through December for number of groundwater samples and 5 or 6 different criteria
- Confirm March sampling schedule and provide to EPA for opportunity to split samples as part of QA

LONGHORN ARMY AMMUNITION PLANT
MONTHLY MANAGERS' MEETING (abbreviated)

Location	Longhorn Army Ammunition Plant		
Date	25-Jan-2011	**Time**	5:00 PM

ATTENDEES

Name (printed)	Signature	Organization	Phone	E-mail
Longhorn Team Members				
Rose M. Zeiler		BRAC	(479) 635-0110	rose.zeiler@us.army.mil
Andrew Maly		USAEC	(210) 424-8829	andrew.maly@us.army.mil
Marilyn Plitnik		USAEC	(210) 424-8779	marilyn.a.plitnik@us.army.mil
Aaron Williams		USACE, Tulsa	(918) 669-4915	aaron.k.williams@usace.army.mil
John Lambert		USACE, Tulsa	(918) 669-4992	john.r.lambert@SWT03.usace.army.mil
Stephen Tzhone		USEPA, Dallas	(214) 665-8409	tzhone.stephen@epa.gov
Terry Burton		USEPA, Dallas	(214) 665-7139	Burton.Terry@epa.gov
Kent Becher		USGS, Dallas	(817) 253-0356	kdbecher@usgs.gov
Fay Duke		TCEQ, Austin	(512) 239-2443	fduke@tceq.state.tx.us
Dale Vodak		TCEQ, Tyler	(903) 535-5147	dvodak@tceq.state.tx.us
Barry Forsythe		USFSW, Dallas	(214) 665-8467	forsythe.barry@epa.gov
Paul Bruckwicki		USFSW, Karnack	(903) 679-4536	paul_bruckwicki@fws.gov
Mark Williams		USFSW, Karnack	(903) 679-9144	mark_williams@fws.gov
Praveen Srivastav		SHAW, Houston	(281) 531-3188	praveen.srivastav@shawgrp.com
Susan Watson		SHAW, Houston	(281) 531-3107	susan.watson@shawgrp.com
Kay Everett		SHAW, Houston	(281) 531-3121	kay.everett@shawgrp.com
Ross Adkins		USACE	918 669-7346	Ross.Adkins@usace.army.mil
Craig Mobley		USGS, Ft. Worth	(817) 253-1000	camobley@usgs.gov

LONGHORN ARMY AMMUNITION PLANT
RESTORATION ADVISORY BOARD
Karnack, Texas
(479) 635-0110

January 18, 2011

Distribution (one copy each)

Paul Fortune
Post Office Box 16
Karnack, Texas 75661

Ken Burkhalter
Post Office Box 767
Waskom, Texas 75692

Robert Cargill
Post Office Box 992
Longview, Texas 75606

Charles Dixon
4406 John Reagan
Marshall, Texas 75677

Carol Fortune
Post Office 16
Karnack, Texas 75661

Walter Lee Guice
Post Office Box 3632
Longview, Texas 75606

Judith Johnson
1635 Dorough Road
Karnack, Texas 75661

Ted Kurz
1487 Pine Island Road
Karnack, Texas 75661

Jim Lambright
4840 Hollow Ridge Road
Dallas, Texas 75227

Richard LeTourneau
Post Office Box 12071
Longview, Texas 75607

Nigel R. Shivers
Post Office Box 558
Karnack, Texas 75661

Judy VanDeventer
2713 Blairs Landing Road
Karnack, Texas 75661

Tom Walker
500 Private Rd 7222
Jefferson, Texas 75657

E. V. Wilson
801 Kildare Road
Linden, Texas 75563

Pickens Winters
324 Powell Street
Karnack, Texas 75661

LONGHORN ARMY AMMUNITION PLANT
RESTORATION ADVISORY BOARD
Karnack, Texas
(479) 635-0110

Dear LHAAP RAB Member,

The next Restoration Advisory Board (RAB) meeting will be held on Tuesday, January 25, 2011, from 6:30 to 8:00 p.m. at the Karnack Community Center, Karnack, Texas. On January 26, a RAB tour will be conducted at the Longhorn Army Ammunition Plant at 9:00 a.m. We hope that you can attend. If you have any questions, please do not hesitate to contact me.

Shaw Environmental, Inc. (Shaw) is the contractor supporting the U.S. Army environmental restoration activities at the Longhorn Army Ammunition Plant (LHAAP), and will be coordinating the RAB meeting. A tentative agenda for the meeting is attached.

Regards,

Dr. Rose Zeiler
Department of the Army
Longhorn Army Ammunition Plant
Box 220
Ratcliff, Arkansas 72951

Copy to:
Dawn Orsack, Rick Lowerre; CLI (TAG)
Janetta Coats, Donn Walters; EPA (TAG)

LONGHORN ARMY AMMUNITION PLANT
RESTORATION ADVISORY BOARD
Karnack, Texas
(479) 635-0110

AGENDA

DATE:	Tuesday, January 25, 2011
TIME:	6:30 – 8:00 PM
PLACE:	Karnack Community Center, Karnack, Texas

06:30 Welcome {RMZ}

06:35 Open items {RMZ}
- Charter Revision
- Election of Co-Chair
- Surface Water (Creek) Sampling Results

06:55 Defense Environmental Restoration Program (DERP) Performance Based Contract (PBC) Update {Shaw}
- -Documents Status/ Environmental Sites
- -Groundwater Treatment Plant (GWTP) Update
- -Perimeter Well/Surface Water Sampling Update

07:15 DERP Total Environmental Restoration Contract Update {RMZ}
- -LHAAP-35B(37) and LHAAP-67 RD

07:20 Military Munitions Response Program (MMRP) {USACE}

07:25 Other Environmental Restoration Issues/Concerns {RMZ}

07:30 ECOP VI

07:35 Look – Ahead at the Schedule
GWTP Tour

07:55 Site 49 USFWS Sampling Results {PB}

08:00 Adjourn {RMZ}

Shaw® Shaw Environmental, Inc.

Subject:	**Draft Final Minutes, Quarterly Restoration Advisory Board (RAB) Meeting, Longhorn Army Ammunition Plant (LHAAP)**
Location of Meeting:	**Karnack Community Center, Karnack, Texas**
Date of Meeting:	**January 25, 2011, 6:30 – 07:30 PM**

Meeting Participants:

LHAAP/BRAC:	Rose M. Zeiler
U.S. Army:	Ross Atkins
USAEC:	Marilyn Plitnik
USACE:	Aaron Williams
Shaw Environmental:	Praveen Srivastav, Kay Everett
TCEQ:	Fay Duke
USEPA Region 6:	Steve Tzhone, Barry Forsythe
USFWS:	Mark Williams, Paul Bruckwicki
USGS:	Kent Becher, Craig Mobley
RAB:	**Present:** Charles Dixon, Lee Guice, Judith Johnson, Jim Lambright, Richard LeTourneau, Judy Vandeventer, Tom Walker, Pickens Winters **Absent:** Ken Burkhalter, Robert Cargill, Paul Fortune, Carol Fortune, Ted Kurz, Nigel Shivers, and E.V. Wilson

An agenda for the RAB meeting was distributed prior to the meeting.

Welcome – Rose Zeiler

The meeting was called to order. Richard LeTourneau indicated he was representing Paul Fortune this evening as Paul was unable to be present. Janetta Coats was introduced as the newly assigned EPA Project Manager on the recently issued Technical Assistance Grant

(TAG) awarded to CLI. Ross Atkins with the Army Chief Public Affairs office was also in attendance and introduced at the meeting. Also introduced to the group was Craig Mobley with the USGS working with the EPA and Marilyn Plitnik with USAEC who will be replacing Andrew Maly.

Open Items – Rose Zeiler

Charter Revision
Rose indicated that the charter was resent to the RAB recently with Army comments. Richard said that the RAB had comments on the charter and he said that Paul had indicated they would like more time to review and discuss the changes. Richard suggested that they would like to select a subcommittee from the RAB to make revisions to the Charter and communicate those changes with the Army over the next 6 to 8 weeks.

Election of Co-Chair
Since some newer members of the RAB have only attended one meeting as a RAB member, Richard suggested that the election of the RAB Community Co-Chair be postponed in consideration of the newer members recently appointed. Rose suggested that if a member would like to be considered for the co-chair position to circle their name on the provided roster list or strike through their name if not interested. She asked that everyone share any comments they may have and the co-chair will compile and present their findings. Please share with RAB members not present tonight.

Perimeter Wells Sampling Results
Sampling results were provided as handouts. More information will be provided later in the meeting.

Defense Environmental Restoration Program (DERP) Performance Based Contract (PBC) Update–Shaw

Document Status/Environmental Sites
Praveen Srivastav distributed copies of the document status table and discussed each site.

- A soil removal work plan for LHAAP-03 is in regulatory review and TCEQ comments are currently being addressed. Praveen indicated that LHAAP-03 was a former waste storage pad for a drum of waste paint. It is located within LHAAP-58.
- Regulatory comments have been received on the Draft Final Completion Report for LHAAP-04 and are being addressed. This site is across from the Fire Station and was a former wastewater treatment area. The preliminary Draft FS for LHAAP-04 (groundwater) is in preparation.
- The preliminary Draft ROD for LHAAP-16 is in Army's review.
- The preliminary Draft ROD for LHAAP-17 is in progress.
- Responses to EPA and TCEQ comments on the Draft FS for LHAAP-18/24 are in Army review.
- The Draft Proposed Plan for LHAAP-29 is in comment resolution. This site was the TNT manufacturing area which consisted of 5 to 6 production lines.

- The Draft Remedial Design for LHAAP-46 is currently in progress and Army comments are being addressed.
- Received Army comments on the revised Draft Final FS for LHAAP-47 and responses submitted.
- Army comments received on the preliminary draft RD for LHAAP- 50 and responses are in preparation.
- Army comments received on the preliminary draft RD for LHAAP-58 and responses are in preparation.

Groundwater Treatment Plant (GWTP) Update

The GWTP has been operating normally since the last update. Currently the plant is discharging the treated water into Harrison Bayou because there is plenty of flow in the creek. In the recent past and due to drought conditions, the usual discharge into Harrison Bayou was suspended because the creek was dry. Discharge then was diverted to the INF pond. Since the drought conditions were sustained, the discharge to the pond continued until the pond reached capacity. At that time, a tanker truck was used to pump water out of the pond and sprinkled onto the surface at LHAAP-18/24. At present, the pond is empty.

Perimeter Well/Surface Water Sampling Update

Sampling results for the perimeter background wells samples were available by hand out. Praveen briefly discussed the results. Creek samples are collected every quarter but the creeks were dry during the September sampling event.

DERP Total Environmental Restoration Contract (TERC) Update – Rose Zeiler
LHAAP-35B(37) and LHAAP-67

The Remedial Design for sites LHAAP-37 and -67 is in review and there is no new information on these sites.

Military Munitions Response Program (MMRP) Update – USACE

Aaron indicated that there is nothing new to add to this topic. Rose asked if those attending the RAB tour the next morning would like to take a look at the MMRP sites where munitions were tested.

Other Environmental Restoration Issues/Concerns

Mr. Winters asked about any available information on health issues. Steve said that he could have an ATSDR (Agency for Toxic Substances & Disease Registry) presentation at an upcoming meeting and have someone from the Texas Department of Health talk to the group if the community is interested. The RAB members present expressed an interest in having such a presentation in an upcoming RAB meeting.

ECOP VI

Rose indicated that they are waiting for some surveys to be completed before the next transfer can take place. She pointed out the parcels affected included sites LHAAP-48 and 53.

Look – Ahead at the Schedule
GWTP Tour
RAB tour is scheduled for 9:00 AM in the morning, January 26, 2011. A general site list was planned and Rose told the group to let her know if there are particular sites they would like to visit.

Site 49 USFWS Sampling Results
LHAAP-49 was the former Acid Storage site. During investigation activities, one soil location showed a high hit of mercury, but no risk was indicated when the site and data were evaluated and risk was calculated. TCEQ had issues on hot spots so due to a voluntary action by the Army contractor; soil at the hot spot was removed and disposed off site (at a regulated disposal facility). No confirmation sample was collected or requested. However, questions afterward resulted in EPA and USFWS collecting additional soil samples at the location to confirm the absolute removal of the mercury impacted soil. The results indicated that any remaining mercury concentrations were low around 27 µg/kg.

The next RAB meeting is scheduled for March 28, 2011 at 6:30 p.m.

Adjourn

January Meeting Attachments and Handouts:

- *Status of Technical Documents PBC*
- *Meeting Agenda*
- *Fact Sheet for LHAAP-29*
- *Perimeter Well/Surface Water (Creek) sample location maps and tables*

Shaw Environmental, Inc.
HAPPY NEW YEAR!

Longhorn Army Ammunition Plant
Restoration Advisory Board Meeting

Location	Karnack Community Center
Date	25-Jan-2011 6:30 PM **page 1 of** 2

Please sign in the space provided or add your name and address on next page if your name does not appear below.

ATTENDEES

Name (printed)	Signature	Organization	Phone	E-mail
RAB Members				
Paul Fortune		RAB Co-Chair		plfortune@hotmail.com
Ken Burkhalter		RAB Board Member		kburkhalter@shreve.net
Robert Cargill		RAB Board Member		robertcargill@gmail.com
Charles Dixon	Charles Dixon	RAB Board Member		crdixon1@charter.net
Carol Fortune		RAB Board Member		cafortune@hotmail.com
Lee Guice	W. Lee Guice	RAB Board Member		guiceengr@aol.com
Judith Johnson	Judith Johnson	RAB Board Member		judithjohnson@webtv.net
Ted Kurz		RAB Board Member		tk7108@gmail.com
Jim Lambright		RAB Board Member		lakepair@yahoo.com
Richard LeTourneau		RAB Board Member		richardoii@aol.com
Nigel R. Shivers		RAB Board Member		nigelshivers@yahoo.com
Judy Vandeventer	Judy VanDeventer	RAB Board Member		jvandeventer@windstream.net
Tom Walker	Tom Walker	RAB Board Member		twalkercaddolake@gmail.com
E. V. Wilson		RAB Board Member		evw1@valornet.com
Pickens Winters	Pickens Winters	RAB Board Member		NA
Longhorn Team Members and Community				
Rose M. Zeiler		Longhorn AAP	(479) 635-0110	rose.zeiler@us.army.mil
~~Andrew Maly~~		~~USAEC~~	~~(210) 428-9131~~	~~andrew.maly@us.army.mil~~
Marilyn Plitnik		USAEC	(210) 424-8779	marilyn.a.plitnik@us.army.mil
Aaron Williams	Aaron Williams	USACE, Tulsa	(918) 669-4915	aaron.k.williams@usace.army.mil
John Lambert		USACE, Tulsa	(918) 669-4992	john.r.lambert@SWT03.usace.army.mil
Steve Tzhone		USEPA, Dallas	(214) 665-8409	tzhone.stephen@epa.gov
Kent Becher	Kent Becher	USGS, Dallas	(817) 253-0356	kdbecher@usgs.gov
Fay Duke		TCEQ, Austin	(512) 239-2443	fduke@tceq.state.tx.us
Dale Vodak		TCEQ	(903) 535-5147	dvodak@tceq.state.tx.us
Paul Bruckwicki		USFSW	(903) 679-4536	paul_bruckwicki@fws.gov
Barry Forsythe		USFSW	(214) 665-8467	forsythe.barry@epa.gov
Mark Williams	Mark Williams	USFSW	(903) 679-9144	mark_williams@fws.gov
Praveen Srivastav		SHAW	(281) 531-3188	praveen.srivastav@shawgrp.com
Kay Everett		SHAW	(281) 531-3121	kay.everett@shawgrp.com
Susan Watson		SHAW	(281) 531-3107	susan.watson@shawgrp.com
Craig Mosier		USGS - Ft. Worth	(817) 253-1000	camosier@usgs.gov

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Longhorn Army Ammunition Plant
Restoration Advisory Board Meeting

Location	Karnack Community Center
Date	25-Jan-2011 6:30 PM **page 2 of 2**

Please provide your address for future mailings or information.

ATTENDEES

Please print legibly.

Name (printed)	Signature	Organization and/or Address	Phone	E-mail
Longhorn AAP Community (con't)				
Jay Webb		131 Bois D'Arc	903-789-2063	JPWebb6@CMAC.com
JANETTA COATS	Janetta Coats	1445 Ross Ave. Dlls	2146657308	coats.janetta@epa.gov
Marilyn A Plitnik	Marilyn A Plitnik	San Antonio TX	(210) 424-8779	marilyn.a.plitnik@us.army.mil
Gary Neal	Gary Neal	Karnack, TX	903-679-9144	gary_neal@fws.gov
Jason Reesner		Karnack, Tx	903-679-9141	jason_reesner@fws.gov
Pickens Winters		KARNACK	903-679-9454	
Dawn Orsak	Dawn Orsak	CLI	512-482-9345	dawn@caddolake.us

Shaw® Shaw Environmental, Inc.

Status of Sites and Technical Documents
Longhorn Army Ammunition Plant – PBC Contract
January 21, 2011

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LONGHORN ARMY AMMUNTION PLANT (LHAAP)
RESTORATION ADVISORY BOARD

DRAFT
GUIDELINES AND OPERATING PROCEDURES

1. Mission Statement

The mission of the Longhorn Army Ammunition Plant Restoration Advisory Board, hereafter referred to as the RAB or Board, is to promote community awareness and obtain constructive community review and comments on environmental restoration activities at the Longhorn Army Ammunition Plant.

2. Purpose and Function

The purpose and function of the RAB is to:

- Act as a forum for the discussion and exchange of information about environmental restoration activities at LHAAP between agencies and the community;
- Disseminate information about environmental restoration activities at LHAAP to the community;
- Ensure opinions about environmental restoration reflect the diverse interests within the community; and
- Provide an opportunity for stakeholders to review the progress and participate in a dialogue with the decision makers.

The RAB discussions are limited to environmental restoration activities at the Longhorn Army Ammunition Plant. The RAB is not a replacement for other types of community outreach and participation required by law, regulation, or policy. All recommendations relating to environmental restoration activities at LHAAP provided by the RAB will be considered, including advice given that represents the minority view of members. Because the Department of Defense does not intend for Federal Advisory Committee Act (FACA) requirements to apply to RABs, consensus is not a prerequisite for RAB recommendations. Advice is provided by each individual rather than as a group.

3. Basis and Authority

The basis and authority for the RAB is the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), primarily Sections 120(a), 120(f), and 121(f) and 10 USC 2705 enacted by 211 of SARA. To the extent feasible, the activities of the RAB are to be conducted in accordance with the guidance stated in the Restoration Advisory Board Rule Handbook issued by the Office of the Secretary of Defense, February 2007 and the Management Guidance for the Defense Environmental Restoration Program (DERP), September 2001.

4. Membership

4.1. Community Members

Community membership of the RAB is voluntary and shall adequately reflect the diverse community interests regarding the environmental restoration activities at Longhorn Army Ammunition Plant. Unless the RAB decides to change the balance and diversity of its initial membership (requires Board consensus), the RAB will consist of members who reside or who work in Harrison County and surrounding areas, and individuals and groups directly impacted and having a vested interest in the environmental restoration activities at Longhorn Army Ammunition Plant. Community interests may include, but are not limited to:

Comment [m1]: Deleted homeowners association, environmental justice groups (low income and minority groups), health officials, senior citizens, and civic groups

- local residents
- business community
- All local environmental groups
- All local officials
- Interested community associations and groups

The RAB will maintain diversity and balance in regard to gender, age, race /ethnicity, type of employment, neighborhood, expertise, income, and education levels. Members are expected to attend and actively participate in regular meetings and be prepared to comment on documents and proposals.

4.2. Permanent Members

Permanent standing members of the RAB, not subject to rotation or term limits above, include representatives from the Army, U.S. EPA Region 6, and Texas Commission on Environmental Quality.

4.3 Appointment / Election of Board Officers

The RAB shall be co-chaired by the Longhorn Army Ammunition Plant (LHAAP) Site Manager, appointed by the Army, and a RAB community member. The Community Co-Chair shall be elected by a majority vote of the RAB community members. The Community Co-Chair may serve one or more terms, including consecutive terms, if approved by the RAB members. The Community Co-Chair may choose to resign his or her chair without affecting his or her RAB membership. If the Community Co-Chair is unable to attend a RAB meeting, he or she will designate another community member of the RAB to carry out the Community Co-Chairs duties at that meeting.

4.4 Nomination and Selection of RAB Members

Candidates for new RAB members may be presented at any time by current RAB members. Individuals interested in participating in the RAB must submit a completed RAB Application Form to the LHAAP Site Manager (Army Co-chair) in order to be eligible for selection. The RAB Membership Committee may, by a two-thirds majority vote, nominate replacement and new RAB members. The BRAC Division Industrial Branch Chief will make the final judgment/selection based on the diversity of all candidates.

4.5 No Compensation

Members shall serve without compensation. All expenses incidental to travel and document review shall be borne by the respective members of their organizations.

4.6 Attendance

Members are expected to attend all RAB meetings. RAB members must be present to vote on any and all topics. If a member fails to attend two consecutive meetings, the LHAAP or the Community RAB Co-Chair may ask the member to resign.

4.7 Terms

Members of the RAB shall serve terms of two years or more, to be determined by the Board. To maintain a constructive dialogue, the RAB shall not exceed 15 community members. If membership reaches capacity a rotation will be implemented to allow new members to participate. The rotation would limit terms to two years. The RAB community membership rotation schedule shall maintain the balance and diversity necessary for a successful RAB. This policy will be reviewed annually. Members of the RAB may choose to fill any vacancies as they occur, seeking candidates from the community as needed. A decision on the filling of vacancies should be made by the Membership Committee within 60 days, and selected in accordance with Section 4.4.

Comment [m2]: Removed one year term

Comment [m3]: Removed language to replace half of RAB members each year

4.8 Resignation or Removal of Community Members

4.8.1. Any member who determines he or she is unable to continue to participate fully may submit a resignation in writing to either of the Board Co-Chairs. Resigning members may nominate new members to replace them, and then chosen in accordance with section 4.4. New membership must continue to reflect the diversity of community interests.

4.8.2. The RAB members in attendance may, by a two-thirds majority vote, remove a community member prior to the expiration of his or her term, if that person is determined to be ineffective or detrimental to the progress of the RAB. The vote to remove a community member shall be taken at the meeting following the one at which the removal was proposed.

4.9 Membership Committee

The RAB Membership Committee shall be formed by RAB members at the time this charter is ratified. RAB members, by a two-thirds majority vote, will nominate and approve this committee which can be any size. Additions to this committee can be made at any time using the two-thirds majority voting process. Departing or resigning members will be replaced in accordance with section 4.7. Membership Committee members must be present at the RAB to cast a vote concerning membership.

5. STRUCURE AND OPERATING PROCEDURES

5.1 Meetings will be scheduled on a regular basis and will be open to the public. It is anticipated that meetings will be held on a quarterly basis or as needed. Each meeting will have a purpose and agenda. The agenda items will be compiled by the Co-Chairs. To encourage public attendance and RAB participation, meetings will be held at convenient times and locations. Meeting notice will be provided to the public.

5.2 The Longhorn Army Ammunition Plant Co-Chair will be responsible for notifying all members of scheduled meetings and providing logistical support.

5.3 The LHAAP Co-Chair will be responsible for preparing meeting minutes, including a list of attendees. Before the conclusion of the RAB meeting, the Co-Chairs will query members present for specific concerns and advisory comments. The concerns and comments will be set forth in the meeting minutes to include the RAB's desired methodology for a response. The concerns will remain as open items at following RAB meetings until the issues are resolved. Meeting minutes shall summarize the topics discussed at the RAB meetings; these will be concise summaries rather than verbatim transcripts to facilitate effective communication.

5.4 The meeting minutes will be reviewed by the RAB members and at the next scheduled RAB meeting, the Co-Chair(s) shall call for any corrections. The RAB will approve the minutes with the corrections noted.

5.4 The RAB shall develop, maintain, and use a mailing list of names and addresses of interested parties, who wish to receive information about environmental restoration activities at LHAAP. Information will be provided to the interested parties in a timely manner.

5.5 Community members will be asked to review and comment on various environmental restoration documents. RAB members should submit written comments to the Community Co-Chair on the subject documents within the time frame specified. The Community Co-Chair shall consolidate comments from the RAB community members and provide them to the LHAAP Co-Chair. The LHAAP Co-Chair will ensure that a written response is provided to the RAB in a timely manner.

5.6 RAB members who desire to speak to the media should speak only on their own behalf. The official spokesperson(s) for the RAB are the Community and the LHAAP

Co-Chairs. It is the responsibility of the Community and the LHAAP Co-Chairs to convey to the media only the facts of the environmental restoration activities discussed at the RAB. The Community Co-Chair may speak to the media on behalf of the RAB members and may convey to the media only the opinions/concerns held by the majority of the RAB members. If the community Co-Chair conveys to the media opinions/concerns not held by the majority of the RAB, he/she is not speaking for the RAB, but is expressing a personal opinion.

5.7 Board members will not make personal attacks or derogatory remarks during the meetings. Repeated offenses will result in a recommendation for removal of the offending party from the RAB by the Co-Chairs.

5.8 Training may be available for RAB and community members when requested. The LHAAP Site Manager will provide information on what is expected of a RAB and to assist RAB members in gaining an understanding of LHAAP-specific environmental and health issues.

5.9 The RAB will explore all available avenues for resolving disputes. In cases where communication becomes tangled and members doubt the sincerity of one another, the best solution is to discuss these concerns within the RAB.

5.10 Records of RAB activities, procedures, and meeting minutes shall be maintained in the Marshall Public Library.

6. RAB Adjournment

Appropriate circumstances for adjournment include program completion or inadequate sustained community interest. The LHAAP Co-Chair shall discuss potential adjournment and consider input from the Board and other stakeholders as appropriate prior to reaching a decision concerning RAB adjournment. If the RAB members decide they do not want to adjourn, the members may agree to decrease the frequency of RAB meetings rather than to adjourn. These guidelines shall expire without further action by the RAB or any other party upon the effective date of adjournment.

7. RAB Dissolution

Appropriate circumstances for dissolution are when a RAB is operating inefficiently or is not fulfilling its intended purpose. When this occurs, the BRAC Division Industrial Branch Chief will make a concerted attempt to resolve the issues that impact the RAB's effectiveness. If unsuccessful, the BRAC Division Industrial Branch Chief may elect to dissolve the RAB. In the event that the BRAC Division Industrial Branch Chief elects to dissolve the RAB, the BRAC Division Industrial Branch Chief shall follow steps outlined in section 10.7.5 of the Management Guidance for the DERP.

8. Effective Date

The effective date of these Guidelines shall be the date of approval by the Board and signed by the LHAAP Co-Chair and Community Co-Chair.

_____ _____
LHAAP Co-Chair Date

_____ _____
Community Co-Chair Date

LONGHORN ARMY AMMUNITION PLANT,

Karnack, Texas

MONTHLY MANAGERS' MEETING

AGENDA

DATE:	Thursday, 24 February 2011
TIME:	09:30 am.
PLACE:	Teleconference - Call In Number Courtesy of Shaw: 866-797-9304/4155734

Welcome **RMZ**

Action Items

Army

- Provide update on LHAAP-65 and 56.

Shaw

- Survey sumps at LHAAP-35/36
- Confirm with field personnel that the gauges in Harrison Bayou are being used (recorded) when gauging wells at the GWTP - completed
- Check MW-22 sampling results for last couple months to determine any plume changes - completed
- Confirm the exact date of next sampling event in March at GWTP so that EPA can split samples as part of QA. To be provided

EPA – Topics for Discussion **TZ**

- Gauges in Harrison Bayou near GWTP- Update
- RODs, RDs and schedule

Defense Environmental Restoration Program (DERP) PBC Update **PS/SGW**

- Document Status/Environmental Sites (Table)
- Site 29 Proposed Plan Meeting
- Groundwater Treatment Plant
- Groundwater and Surface Water Sampling Schedule Spreadsheet

DERP Total Environmental Restoration Contract Update **RMZ**

- LHAAP-37/67 – Status of RD Comment Responses

MMRP Update **RMZ**

- Address EPA-TCEQ Responses to Perchlorate Memo

Other Issues **RMZ**

- USFWS comments on documents

USFWS Update **RMZ/PB**

- Environmental Restoration Issues with Transfer Schedule Impact

Adjourn

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Subject:	**Draft Final Minutes, Monthly Managers Meeting, Longhorn Army Ammunition Plant (LHAAP)**
Location of Meeting:	**Teleconference**
Date of Meeting:	**February 24, 2011; 9:30AM – 10:30 AM**

Meeting Participants:

BRAC:	Rose M. Zeiler
USACE-Tulsa:	Aaron Williams, John Lambert
Shaw:	Praveen Srivastav, Susan Watson, Kay Everett
USEPA Region 6:	Steve Tzhone
TCEQ:	Fay Duke
USGS:	Kent Becher
USFWS:	Paul Bruckwicki, Barry Forsythe

Welcome **Rose M. Zeiler**

Action Item Status:

Army

- Provide update on document review for LHAAP-65 and -56 - *in progress; received comments from Fay; site LHAAP-56 response complete document is being prepared; an issue developed that the sump associated with LHAAP-56 was misidentified but has since been corrected.*

Shaw

- Survey sumps at LHAAP-35/36 – *in progress*
- Confirm with field personnel that the gauges in Harrison Bayou are being used (recorded) when gauging wells at the GWTP – *completed*
- Check MW-22 sampling results for last couple months to determine any plume changes- *completed. Shaw agreed to sample well 126 for VOCs and perchlorate*
- Confirm the exact date of next sampling event in March at GWTP so that EPA can split samples as part of QA. – *Will be the week of March 14, exact date to be provided. Richard Pruitt, videographer, would like to videotape the activity. EPA representatives will be present during this time to collect split samples and conduct surface water sampling.*

EPA -- Topics for Discussion

- Gauges in Harrison Bayou near GWTP – *one of the gauges is broken and they hope to repair it by next month; Shaw agreed to utilize and record the gauging data when*

sampling, but are not obligated to maintain. Shaw will maintain the gauges to the extent possible and report to the group if any of the gauges are found to be damaged.

- RODs, RDs and schedule

Fay Duke mentioned that the RCRA permit for Longhorn should be considered as we begin to close out sites. This is because the site is being addressed under CERCLA instead of RCRA. The Notice of Registration should be evaluated for status of each of the sites, so that the regulatory history can be properly documented.

Steve Tzhone stated that there will be a public health speaker at the next RAB meeting. He also noted that a new schedule for RODs and RDs should be ready for the next Managers' and RAB meetings.

Defense Environmental Restoration Program (DERP) PBC Update **Praveen Srivastav**

Document Status/Environmental Sites

Praveen Srivastav went over the document status/environmental sites table.

- LHAAP-03: Currently addressing TCEQ comments.
- LHAAP-04: Received EPA and TCEQ comments on the draft final completion report. Currently addressing regulatory comments. The preliminary draft FS for LHAAP-04 is in preparation. The Preliminary Draft FS is in Army's review.
- LHAAP-16: The preliminary draft ROD is in progress.
- LHAAP-17: Preliminary draft ROD is being prepared. It was discovered that some data as part of a data set that was used during the ECO risk assessment and in the earlier Jacob's report was used, but had been previously disqualified. It was not properly flagged in the database.
- LHAAP-18/24: The RTCs for regulatory comments are in Army's review.
- LHAAP-29: RTC resolution is in progress on the preliminary draft Proposed Plan for LHAAP-29. Will send to regulators shortly and after it becomes final, will send copies to the TAG and RAB. The Public Meeting is set for March 22, 2011.
- LHAAP-46: Currently addressing Army comments on the draft Remedial Design for LHAAP-46.
- LHAAP-47: Responses to Army's comments on revised Draft FS for LHAAP-47 have been submitted.
- LHAAP-50: Army comments have been addressed on the preliminary draft RD for LHAAP-50 and are in Army's review.
- LHAAP-58: Army comments have been received on the preliminary draft RD for LHAAP-58 and are currently being addressed.

Site 29 Proposed Plan Meeting

The Public Meeting for the LHAAP-29 Proposed Plan has been scheduled for March 22, 2011. As soon as the Proposed Plan is finalized, copies will be expedited to the TAG and RAB as well as the library, the official Administrative Record repository.

Groundwater Treatment Plant

The GWTP is functioning normally. There were some pipes that froze in January requiring repair. There has been flow in the creek so discharge to the creek has been possible for the last few weeks.

The INF pond is empty. Repairs to the liner at the INF pond were previously implemented in two locations, and eradication of trees and saplings growing in or on the liner is being implemented. Trees have been treated and Shaw is currently hiring a contractor to cut and grind the stumps.

Groundwater and Surface Water Sampling Schedule Spreadsheet
This document will be populated once the Remedial Design document has gone final. At the present time, the document shows the perimeter wells, the creek, LHAAP-12, LHAAP-16, and LHAAP-18/24.

DERP Total Environmental Restoration Contract Update

LHAAP-37/67 –Status of RD
The RD is being finalized.

MMRP Update

Address EPA- TCEQ Responses to Perchlorate Memo
There is nothing new to discuss for this section; however, work will be going forward soon.

Other Issues
USFWS comments on documents
The Army urged the USFWS to submit any comments they may have directly to Army.

USFWS Update
Environmental Restoration Issues with Transfer Schedule Impact

Kent asked if he could contact the GWTP directly for an idea of when the sampling at 18/24 would take place so they can plan their sampling split, which Shaw agreed.

Meeting Adjourned

Next monthly manager's meeting is tentatively set at Longhorn dependent on the USAEC audit schedule taking place that week.

[Meeting was later changed to teleconference on March 18, 2011 at 10:00].

Action Items
Shaw

- Provide fact sheets for LHAAP-17 and LHAAP-18/24 at the next RAB meeting.
- Update the Master Sampling Plan.

EPA

- Follow up with the health department about presenting to the RAB

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Status of Sites and Technical Documents
Longhorn Army Ammunition Plant – PBC Contract
February 22, 2011

No.	Document in Progress	Submittal Date	Army	Regulator	Next Submittal	Expected Date	Army	Regulator	Comment Resolution	Status	**Remarks**
1	Draft Final Soil Removal Work Plan, LHAAP-03	11/15/10	x	x	Final	02/28/11	x	x	In progress	Addressing TCEQ comments	
2	Draft Final Completion Report, LHAAP-04	05/24/10	x	x	Final	2/28/11	x	x	In progress	Regulatory comments received.	
3	Preliminary Draft FS, LHAAP-04	2/03/11	x							In Army review	
4	Preliminary Draft ROD, LHAAP-16	11/17/10	x		Draft	3/10/11	x	x	In progress		
5	Preliminary Draft Record of Decision, LHAAP-17	9/17/10	x		Draft	03/10/11	x	x	In progress		
6	Draft (Final) Feasibility Study, LHAAP-18/24	5/13/09	x	x	Draft Final	03/15/11	x	x	In progress	Received EPA and TCEQ comments on 8/5/10. Responses in Army review	
7	Draft Proposed Plan, LHAAP-29	2/1/11	x	x	Draft Final Proposed Plan	2/28/11	x	x	In progress	Received regulatory comments. RTC resolution in progress	
8	Draft Remedial Design, LHAAP-46	10/1/10	x		Draft Final	3/30/11	x	x	In progress	Addressing Army comments	

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Status of Sites and Technical Documents
Longhorn Army Ammunition Plant – PBC Contract
February 22, 2011

No.	Document in Progress	Submittal Date	Army	Regulator	Next Submittal	Expected Date	Army	Regulator	Comment Resolution	Status	**Remarks**
9	Revised Draft Final Feasibility Study, LHAAP-47	10/27/10	x		Revised Draft Final to Army	3/15/11	x	x	In progress	Received Army comments. Submitted response.	
10	(Preliminary) Draft Remedial Design, LHAAP-50	12/13/10	x		Draft	03/15/11				In Army review	
11	Draft Remedial Design, LHAAP-58	11/22/10	x		Draft to Regulators	3/15/11	x	x	In progress	Received Army comments. Preparing responses.	