

**REMEDIATION OVERSIGHT REPORT
FOR THE
D&G OPERATING CO., INC.
NO. 1 EVANS UNIT WELLSITE
NEAR WINNIE, TEXAS**



Prepared for:

Corrigan Consulting, Inc.
and the
Railroad Commission of Texas

Prepared by:



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**OVERSIGHT REPORT
FOR THE EVANS UNIT WELLSITE**

SIGNATURE PAGE

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Cover Photo

Shows the contaminated area containing (from left to right) the tool trailer, poly tanks with drums between them, the well head encased by a 6 foot diameter corrugated pipe filled with cement, two gray storage containers in the background which were brought by EnergySolutions, and the workover tank (red).

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Executive Summary

This report catalogs the observations made by Chesapeake Nuclear Services (ChesNuc) personnel of the remediation activities conducted by EnergySolutions. ChesNuc independently confirmed the radiation levels reported by EnergySolutions for each of the 20 m² grid areas. ChesNuc also assisted EnergySolutions in identifying small areas of elevated soil concentrations for excavation. Prior to departure, ChesNuc personnel observed that all contaminated material and excavated soil had been either shipped off the site or packaged for shipment; with one exception being the last soil bag was not yet sealed, which remained only as a formality for the final preparation for shipment.

In spite of the high temperatures, high humidity, and the rainy weather with a flood, EnergySolutions performed the remediation and had demobilized by August 20, 2007. There were several out-of-scope change orders required for EnergySolutions to complete the remediation: 1) removal and replacement of the concrete monolith over the wellhead, 2) an unexpected increase of ~3.3 cubic yards in the workover tank sediment volume, and 3) an increase from 465 cubic yards to ~800 cubic yards in contaminated soil.

This report is not a Final Status Survey report which is to be prepared by EnergySolutions. However, sample results provided to ChesNuc and the Texas Department of State Health Services (DSHS) indicate that the site will be released for unrestricted use except for the wellhead which is encased with a 6' diameter by 6' high corrugated pipe filled with pink concrete. A metal radiation caution placard indicating that the well is contaminated was reported to be attached to the top of the concrete.

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1.0 Background and Introduction

1.1 History

A logging tool containing a three-curie americium-241 (Am-241)/beryllium radioactive source became stuck in Well No. 1 at the D&G Operating Co., Inc. No. 1 Evans Unit wellsite 1.5 miles north of Winnie, Texas in Chambers County. During recovery operations, the source ruptured and resulted in contamination of the well, associated equipment, and the surface soil; the composite photo below shows the damage to the source capsule. The cover photo was taken near the beginning of the remediation and shows most of the surface objects which had to be removed for soil excavation; not visible is the pile of 40-some pipes which were covered with grass and other vegetation. The cover photo also shows the fence which had been constructed around a rectangular area of the site approximately 130 feet by 115 feet, which included the well and the area of known contamination. The Texas Railroad Commission Oil and Gas Division (the Commission) contracted EnergySolutions, a remediation firm, to excavate and remove contaminated material from the site in order to release the area for unrestricted use in accordance with State of Texas, Department of State Health Services (DSHS) requirements.



Figure 1. Damaged Source

1.2 Characteristics of the Source

Per Argonne National Laboratory¹ this type of source is a common neutron source composed of Am-241 and beryllium. The alpha particle given off during the radioactive decay of Am-241 is absorbed by beryllium-9, producing carbon-12 and a neutron. Americium oxide is the most common form in the environment. Average Am-241 levels in surface soil are about 0.01 picocuries/gram (pCi/g). Americium is typically quite insoluble, although a small fraction can become soluble through chemical and biological processes. It adheres very strongly to soil, with americium concentrations associated with sandy soil particles estimated to be 1,900 times higher than in interstitial water (the water in the pore spaces between the soil particles); it binds more tightly to loam and clay soils so those concentration ratios are even higher.

The half life of Am-241 is approximately 432.2 years. It decays by alpha emission. In the process of its decay, Am-241 emits several low energy photons. The primary photon associated with its decay is a 59.54 keV photon with a yield of 0.357/decay.

1.3 Oversight Groups

There were several groups of regulators and oversight. On any given day, the site could have from three to seven oversight/regulatory personnel observing work in progress. Regulators included 1) the US Department of Agriculture (USDA) regarding fire ants and the soil quarantine for the county and 2) the Texas DSHS regarding radiological issues.

Sun Oil provided representatives during excavation immediately over their active oil line which was located in Grid column B.

The Commission provided a representative every day that operations were ongoing including weekends. Due to data exchange, two Commission representatives would frequently be on site at the same time.

Texas DSHS personnel were on site four times for one or more days per inspection visit; as many as two individuals per visit. No items of noncompliance with regulations were reported which would routinely include an audit of air and personnel monitoring.

Chesapeake Nuclear Services, Inc. (ChesNuc) provided oversight of the remediation and the verification survey for the project as performed by EnergySolutions. ChesNuc was a contractor to Corrigan Consulting, Inc. (CCI), an environmental consulting firm located in Houston, Texas. CCI was directly contracted to the Commission to provide oversight services on an as needed basis and a representative from CCI periodically performed a site visit/review.

EnergySolutions also had its own internal group which provided health and safety evaluations at the site.

¹ US Argonne National Laboratory, EVS, Human Health Fact Sheet, August 2005

1.4 Mission of Chesapeake Nuclear Services

ChesNuc's scope of work included 1) on-site oversight provided by a Certified Health Physicist with experience in decontamination and decommissioning services, and 2) independent verification surveys of the remediation activities for ensuring adequacy of remediation activities in keeping with the established clean-up criteria. ChesNuc personnel were on site during the periods May 28 – June 16, 2007 and July 10 – August 7, 2007. The break in service was at the request of the Commission to assure that oversight personnel were available during soil excavation activities.

The scope of this oversight service included: 1) technical evaluation of contractor's methods for remediation activities for meeting clean-up criteria, 2) daily reviews of planned work activities, 3) safety evaluations of activities, 4) reviews and independent verifications of radiation surveys used for establishing affected areas and adequacy of remediation, and 5) weekly project status and progress reports. An independent review/evaluation of the contractor's baseline survey was also performed.

2.0 Technical Evaluations, Daily Reviews, and Weekly Reports

ChesNuc submitted weekly project status reports, copies of which are included in Appendix A. During the periods that ChesNuc personnel were on site, health and safety activities appeared to conform to standard practices generally accepted by the industry:

- Daily H&S meetings were held and attendance record with required signature.
- All work with radioactive material was controlled by Radiation Work Permit.
- Environmental air sampling was performed on both North and South sides of area.
- No reports of injuries except for a minor scratch were noted.
- The use of hard hats, safety glasses, and steel toe shoes was required for those work activities involving use of heavy equipment, soil excavation, and container movement. PPE for radiation work varied per task.
- Humidity and temperature were monitored every hour to assure proper rest periods.
- Night security guards were onsite daily; routinely 1800 to 0600 hours.

3.0 Review of Data From EnergySolutions Baseline Survey

Conclusions from EnergySolutions regarding their Baseline Survey have not been published but their conclusions are expected to be part of their final report. Discussions with EnergySolutions indicated that neither neutrons nor beryllium were detected during their evaluation. On July 12, 2007, ChesNuc provided an initial review of the scan data and results of soil sampling collected by EnergySolutions. A supplement was provided on July 24, 2007 to document that adequate surveys were performed to justify that the areas under the roads were not contaminated to levels greater than the release criteria of 6 pCi/g. This initial review and the supplement are provided in Appendix B.

Work at the site was based upon the data presented in the request for proposal (RFP) (455-7-0853) dated March 6, 2007 by the Commission. A grid to grid comparison could not be made between the data contained in the RFP and the Baseline Survey data as the Baseline Survey included only 20 sample points inside the fenced area. Further, a subsurface comparison could not be made as no subsurface samples were collected for the Baseline Survey. The reviewed data of the RFP and the Baseline Survey indicated discrepancies regarding which surface grid area should be considered as contaminated to levels greater than the release criteria of 6 pCi/g. Drawings 1-2 in Appendix C illustrate the RFP data and the Baseline Survey data, respectively.

4.0 Remediation Activities

This section describes the remediation requirements and certain issues which were observed during the process. Per the RFP and prior to any remediation, the site consisted of the following:

- Two (2) closed-topped polyethylene vessels approximately 750 gallons in capacity were located on site; see cover photo. Each vessel contained approximately 10 barrels of basic sediment and water (BS&W), a RCRA exempt oil and gas waste. The contents of each vessel were generated during well plugging activities and sampled for americium-241. The results were “not detected” and 1.3 pCi/L; respectively.
- Approximately 225 barrels of water contaminated with americium-241 contained in a steel workover tank. The americium-241 concentration detected in an unfiltered water sample was 17,300 pCi/L.
- Approximately 8 to 10 barrels of basic sediment contaminated with americium-241 in the same steel workover tank. The Am-241 concentration detected in a sediment sample was 189,000 pCi/g.
- Dry Active Waste (DAW) contaminated with americium-241 including the steel workover tank, one tool trailer containing tarps and trash, nine steel 55-gallon drums containing soil, one empty plastic 55-gallon drum, several lengths of drill pipe, and miscellaneous wood debris.
- Approximately 370 cubic yards (in-place volume) of soil contaminated with americium-241 at concentrations greater than 6 pCi/g; upgraded in the initial contract to 465 cubic yards.

ChesNuc personnel observed that all of the above listed material had been either shipped off the site or packaged for shipment; with one exception being the last soil bag was not yet sealed, which remained only as a formality for the final preparation for shipment. As clarification, the excavated soil volume was approximately 800 cubic yards and approved by change order to this level. It was also reported by Energy *Solutions* that in-scope sediment volume was 1.5 cubic yards and the out-of-scope sediment was about 3.3 cubic yards.

4.1 Fire Ant Treatment

The US Department of Agriculture (USDA) imposed a mandatory killing of fire ants prior to excavating and shipping soil. The USDA provided a protocol which required a waiting period for the ants to die. Ant bait was applied on 11 June 2007 with treatment by professional services on 14 June 2007. The USDA performed one inspection at the site to ensure that the soil was ant-free and excavation of soil and the filling of bags started on 12 July 2007. While waiting for approval to excavate, Energy *Solutions* revised their schedule and performed other remediation tasks within the Radiological Controlled Area (RCA), e.g. demolishing/ removal of the workover tank, the concrete over the wellhead, and the tool shed; see the photo below. As other remediation tasks were performed while waiting for the ants to die, the impact on the overall schedule is difficult to ascertain.



Figure 2. The Workover Tank, Wellhead Encasement, and Tool Trailer²

4.2 Treatment and Packaging of Contaminated Materials

Water from the workover tank was transferred to two tankers and shipped to the EnergySolutions facility in Oakridge, TN for treatment. Subsequent waste is to be sent to the burial site in Clive, Utah.

There was liquids remaining after the sediment was removed from the B-12 metal containers. These liquids were solidified in place with concrete.

One B-12 metal container held liquid from the two poly tanks shown in the cover photo. This liquid was solidified with crystals specifically for that purpose.

Items in the RCA that could not be free released were size reduced, packaged in an intermodal container, and shipped to the EnergySolutions disposal site in Clive, Utah. As the total weight of the package allowed, contaminated soil could be added to the packages as overfill. This applied to the 40-plus pipes in the field, the steel workover tank, the tool trailer, miscellaneous drums, piping, concrete blocks, wood, etc. The poly Shipping manifests are available from EnergySolutions to identify what went into an individual container.

4.3 Work Stoppages Due to Rain and Heat

Hours and days were lost due to inclement weather and several instances of lost time are documented in the Weekly Reports in Appendix A.

Humidity and temperature were monitored every hour to assure proper rest periods. Routinely and usually during the afternoon hours after 1400, the EnergySolutions work cycle, due to the combined heat and humidity, required 45 minutes of rest following 15 minutes of work. To compensate for this work time loss, EnergySolutions used a tag-

² Photo shows the workover tank in red color, the wellhead encasement in the corrugated pipe and the tool trailer.

team approach but the success of this approach was limited due to the small number of staff members. Further, if goals established for the day had been met; work was curtailed at the end of a work cycle.

Setup of the site and subsequent work was always dependent upon rain. As the interval between rain days was short, the soil tended to remain saturated; the work was stopped frequently due to rain and storm events. The following photo shows the flooded RCA during the week of July 4th, 2007.



Figure 3. Flooded RCA on July 4th, 2007

As shown in the following photo, surface water will pool wherever soil is removed. Often soil was piled near the track hoe to permit water drainage overnight. Please note that this issue required a great deal of attention as *EnergySolutions* was required to package and ship all containers without any standing water in them per US Department of Transportation regulations.



Figure 4. Pooling of Surface Water

4.4 Erosion Control

As a great deal of remediation work had already occurred before the flood and the RCA grid system had been under flowing water, it is possible that contamination from the work activities was available for spreading and subsequent cross contamination of other grids. No soil excavation had occurred before the flooding of the July 4th week so any cross contamination would be near the soil surface.

Typical construction erosion control techniques such as hay bails and plastic screens were not applied to the site as they were expected to provide no value during a rain event such as that which caused the flooding. For lesser rain events, the grassy areas between the RFP designated areas of Ditch 1 to Ditch 6 appeared to act as a natural control barrier and had been there for years.

However, timing and quick excavation was of the essence as the flood receded and another near term flood was not anticipated. The work schedule was set for 12 hours per day, seven days per week with weather permitting.

Further, the EnergySolutions Quality Assurance Project Plan (QAPP) described certain actions to reduce cross contaminations within the RCA which were also erosion control techniques. To minimize the potential for the excavated soil to be saturated and/or for the excavation itself to contain water, soil excavation would not proceed if it were raining or if there were an immediate threat of rain. Routinely, the soil was piled to permit dewatering overnight into an RCA grid area.

Although the QAPP permitted dewatering sumps to be placed outside of the RCA to minimize groundwater infiltration into open excavations within the RCA; this was deemed

as impractical. It appeared that the water level outside the RCA was nearly the same as that inside; for days after a rain, every lift yielded a small pool of water.

A strategy was developed to perform slightly deeper than 6" lifts of the areas with the higher known contamination levels, e.g., the workover tank area and the wellhead; see the following photo. This approach reduced potential exposure to personnel while affording a pooling area for any surface water. The excavation then proceeded to the east part of the site where Columns A and B which did not require as deep of a lift as those that were made at the workover tank area. RCA Columns A and B were the first areas to be remediated and partially backfilled. A benefit was that any runoff would go to the workover tank area and not toward a clean area. Columns C, and D-E were then excavated in a north to south direction which permitted most rain to pool in those excavated areas; most liquids evaporated or drained over several days. Finally, the vegetation was cut in the drainage ditch area, and the grass roots and topsoil to about 3" were removed between the areas designated in the RFP as Ditch 1 and Ditch 6. The grasses in the ditch appeared to act as it own erosion control as contamination was identified along the northern edge of it, an area immediately down slope from the RCA. Working in this manner, maintained control of remediated grids until backfill could be accomplished.

No water was collected and pumped to an existing drainage ditch. Water from Grid D4 was pumped to a 500 gallon poly tank to no avail as the water level was not reduced; this water was immediately returned to the grid.



Figure 5. Excavated Workover Tank Area

4.5 Wellhead Monolith and Cellar

4.5.1 Monolith

The well-head was encased with a ~6' diameter by ~6' tall corrugated pipe filled with concrete (dyed pink) to within two feet of the top. Photos of the corrugated pipe containing the monolith are presented in the cover photo and Figure 2 above. On top of the monolith was a radiation caution sign and a photo of that sign is provided below. Excavation under the monolith was required as it had been placed over an area which contained contamination greater than 6 pCi/g. It was deemed unsafe to simply excavate under the monolith (perhaps with hand digging) so it was removed. The monolith was broken into many small pieces using the track hoe with a pneumatic jack hammer attached. Results of two concrete samples were reported by EnergySolutions as positively identified with Am-241 concentrations but less than 1 pCi/g; the concrete was packaged in a metal container and sent to the EnergySolutions' site in Clive, Utah for burial. Note as reasoning for considering the concrete to be buried offsite as radioactive material that there was only a release criterion for soil and not other material such as concrete; further, a timely agreement between the Texas Department of State Health Services or perhaps the Texas Commission on Environmental Quality (TCEQ) to meet the Commission's schedule was not considered favorably. Also, EnergySolutions reported that their decommissioning license required them to consider the concrete as licensed material which must be dealt with as radioactive waste. The caution sign was reported by EnergySolutions as placed on the new replacement monolith; see Figure 6 below.



Figure 6. Radiation Caution Sign on Wellhead Monolith



Figure 7. Pumping Pink Concrete for the Replacement Monolith of the Wellhead

4.5.2 Cellar

EnergySolutions was working on the wellhead area on 31 July 2007 and discovered that a cellar existed with highly contaminated clay/soil inside of it. Three samples were collected near the 12 inch depth and the results were reported as 796, 223 and 22 pCi/g. The cellar is 6'x6' by 3' deep, it has a bottom, and the cellar walls are 6" thick. After cleaning out an ~1 foot depth of soil and clay like material, an additional composite sample was collected on 5 August 2007 from all four cellar corners with an analysis result of 23.9 pCi/g. A weighted average of 4.5 pCi/g of the Grid C2 including the cellar result was deemed as acceptable by DSHS; no further excavation was required in the cellar.



Figure 8. Wellhead With the Top of Cellar Showing

4.6 Forklift Replacement

On Monday morning, 16 July 2007, the load capacity of the fork lifts was questioned as the operators reported instability during operation under load. EnergySolutions immediately placed the site into a safe mode by stopping all movements of filled soil bags. It was determined that the operator manual limits were different from technical specifications; this situation continued into the next day. About two potential days of excavation were lost before replacement forklifts arrived with a higher lifting capacity.

There was a secondary problem with the forklifts as they caused rutting which is discussed in the next section. However, the replacement of the forklifts did not eliminate the rutting of the soil as the tires on the replacements appeared to be narrower which could make rutting worse. The replacement forklift inside the RCA was used to move bags in the drier areas (less rutting) with Commission onsite approval through the following Sunday. The crane discussed in the following section was procured because of the rutting and not due to the lifting capacity of the replacement forklifts.

4.7 Potential Grid Cross Contamination

A large industrial wheeled fork lift, discussed above, was initially used within the fenced RCA to transport filled soil bags. It was noted that field conditions were deteriorating and deep ruts were made as the fork lift carrying up to 11,000 pounds traversed the grids in wet soil; see photo below. It was feared that contamination on the tires could potentially cross contaminate grid areas and soil layers within a grid; the use of fork lifts in the gridded areas was ordered stopped by the Commission on July 20, 2007. Selective use was afforded by the Commission on July 21 and 22, 2007. Whether or not cross contamination contributed to the total excavated volume is not determined. Use of a crane was initiated on July 23, 2007.

The track hoe could not contribute as much to any vertical cross contamination as the tracks prevented it from sinking as far down as a fork lift; however, the track hoe was a potential contributor to cross grid area contamination. This issue was recognized by EnergySolutions as the track hoe was periodically surveyed to assure that high levels of contamination were not adhering to the tracks.

The remediation activities associated with the workover tank and sediment were also potential contributors to cross grid contamination as these items contained the very high concentrations (up to ~200,000 pCi/g) of Am-241. ChesNuc personnel were not present during the remediation activities of the workover tank but it was reported by EnergySolutions that transport of sections of the workover tank involved several grids spanning E1 to A3.

As discussed in Section 4.4, flooding during the week of July 4th could also have caused some cross grid contamination would it would be located near the soil surface.



Figure 9. Illustration of Rutting by Forklift

4.8 Drainage Ditch

Scanning by *EnergySolutions* and ChesNuc of the drainage ditch indicated elevated concentrations between the RFP sampling locations of Ditch 1 and Ditch 6. *EnergySolutions* excavated an approximate 4" lift from the entire length between these locations; see below photo. Note that this work was considered as part of a continuing verbal change order by the Commission as the RFP indicated that only areas designated as Ditch 1 and Ditch 6 were contaminated above the release criterion. The verbal change order was placed in effect post the initial contract for 465 cubic yards.



Figure 10. Excavation of Drainage Ditch

4.9 Workover Tank and Sediment

The sediment in the work over tank was so highly concentrated (189,000 pCi/g per the RFP and similar levels confirmed by EnergySolutions testing) that it had to be mixed with soil with lower levels of contamination to be shipped over the roads. This decision was made following several tests conducted by EnergySolutions regarding the costs of treatment in Tennessee, mixing with concrete at the site, or mixing with soil at the site.

The sediment was removed from the workover tank and the workover tank dismantled during a period when ChesNuc were not assigned to the site. The work reportedly involved hand shoveling, back hoe work, and vacuuming the sediment into small metal boxes. The workover box was reported to be cut up into smaller sections with an electric torch; spayed with a mixture of glue to reduce or eliminate the spread of contamination, and carried to a large roll-off box for ultimate disposal. As stated earlier, it was reported by EnergySolutions that transport of the sections of the workover tank involved several grids spanning E1 to A3.

For the sediment, the safest course of action was probably that selected; place small bags containing sediment into several routine soil bags for dilution and then shipment. EnergySolutions calculated the weight of sediment that could be mixed into an individual bag and this occurred with soil bags numbered 68 through 108. The following composite photo illustrates the transfer technique from the B-12 containers to the regular soil bags.



Figure 11. (1) Transfer of the Sediment Into Small Bags and (2) Placing the Sediment Into A 5 yd³ Soil Bag

4.10 Excavation and Soil Bags

All soil areas being evaluated for remediation were first scanned by EnergySolutions with a FIDLER (Field Instrument for the Detection of Low Energy Radiation), which is a thin window, thin crystal NaI detector designed for detecting low energy gamma emitters like Am-241. Any elevated scan indicating concentrations greater than 6 pCi/g were excavated. Drawing 3 in Appendix C illustrates the grid areas which were excavated without reference to the depth of excavation. Attempts were made by EnergySolutions to maintain accountability of what soil was placed in each bag per subgrid; however, soils from several 20 m² subgrids were frequently piled and mixed to permit water drainage which limited knowledge of the grid origin.

EnergySolutions completed soil excavation with a total of ~800 yd³ of contaminated soil into 163 bags for shipment. Appendix D presents a listing of the soil bags, the date filled, the grids excavated, weight and concentration as known at demobilization. Each bag was considered to contain a nominal 5 cubic yards with certain exceptions as noted in Appendix D. Bag Number 162 remained open and in the grid area upon ChesNuc departure.

Radiological controls for transferring the bags from the RCA included dose rate measurements and testing for surface contamination by smears. Data logs were maintained by EnergySolutions.

The following Figure 12 illustrates the soil bags being loaded for transport by truck to the Houston rail yard where they were to be transferred to gondolas for shipment by rail for burial at Clive, Utah. Figure 13 shows metal containers with the solidified liquids and other surface contaminated objects Loaded on a truck. Figure 14 shows part of the backfill work with clean soil.



Figure 12. Loading Soil Bags for Transport to Houston Railroad



Figure 13. Containers With solidified Liquids and Other Surface Contaminated Objects Loaded on Truck



Figure 14. Leveling of Backfill

5.0 Equipment Decontamination and Disposal of Contaminated Waste

Decontamination of equipment used in the remediation activity was an ongoing process as equipment was replaced or exchanged. The tires of forklifts and the treads of track hoes used in the RCA were the most difficult as the contaminated dirt had to be manually scrapped off. However, the most notable item at this site was the bucket for the small track hoe which was used in operations involving the workover tank. Apparently the liquid sediment got into small cracks of the bucket, could not be decontaminated to release levels, and the bucket was scrapped.

All contaminated waste generated by remediation operations such as PPE and also soil samples, air samples, etc., not required for quality control purposes were discarded as radioactive waste. This material was packaged for shipment to the Clive, Utah burial site.

6.0 Verification Survey

Upon completion of remedial activities in a given area and prior to backfill, a verification survey was performed by *EnergySolutions* to ensure that all soils with excessive Am-241 concentrations had been removed. The survey consisted of measurements/scans using a FIDLER probe and soil samples.

Clarification of the release criteria was requested by the Commission and it was provided by DSHS.

- Each 100 square meter grid may be released provided that the results of the five 20 square meter sub grids average 6 pCi/g or less AND as long as each subgrid result is not greater than 12 pCi/g.
- If a 20 square meter sub grid has a concentration of 6 pCi/g or less after any 4 to 6 inch lift is removed and the tabulated results of the RFP indicate

contamination greater than 6 pCi/g at deeper depths, then the removal of additional soil is not necessary as the results of the average 5-point composite sample is deemed more representative of the average concentration than the single RFP sample result.

- For Grid C2 which contains the well head cellar, the weighted average of the soil concentrations across the grid must average 6 pCi/g or less; a residual contamination level of 30 pCi/g within the five foot by five foot area of the well head cellar was acceptable.

In explanation of the release criteria listed above, for most land areas release criteria are developed and established for individual land areas up to 2,000 m². Also release criteria usually represent an average contamination level and provide for small areas of elevated contamination greater than the average. Note that the Winnie site criteria require averaging over a much smaller area (5% of the standard area in industry practice) which is very conservative. Also note that results of soil sampling presented by EnergySolutions indicate an overall average of 2.3 pCi/g at the soil level beneath the excavated areas. These areas are now covered with backfill and do not represent a surface soil hazard.

As a standard practice by EnergySolutions, the areas within the RCA received a 100% scan using the FIDLER probe following each 6 inch lift. ChesNuc's instrumentation was proven more sensitive in field use and scans were made to supplement the EnergySolutions' scans. Drawing 4 in Appendix C shows several elevated areas (orange dots) identified by ChesNuc scans which were removed by EnergySolutions. Most of the scan measurements were recorded by ChesNuc along with the GPS coordinates. Certain of the areas do not indicate measurements due to GPS not being available but all were scanned except where standing water made the survey null.



Figure 15. Scanning With A FIDLER

If scanning did not indicate elevated contamination levels, systematic soil samples were collected from the within the affected areas. Using the established grid pattern, a 5-point composite surface (0-6 in.) soil sample was collected from each 20 m² grid. The Commission indicated that it was permissible to release an area based only upon soil sample results if the areas could not be dried and scanned thoroughly. This was a continuing problem as the rain had saturated the ground which drained very slowly. ChesNuc was not to slow backfill efforts due to standing water or lack of scanning. As a not unexpected consequence, several grids were excavated to additional depth due to unacceptable concentrations being found in samples but were shielded to the FIDLER detectors by the high moisture content of the soil or standing water.

The area between RFP samples identified as Ditch 1 and Ditch 6 was found as contaminated and the length of the ditch between them was excavated, see Drawing 3 in Appendix C. Within the area of the drainage ditch, three 5-point composite soil samples were collected as the RFP requirement to sample from each of only two 100 ft² areas could no longer be applied.

EnergySolutions provided the results of the soil samples prior to ChesNuc's departure and the release criteria presented above were met. Drawing 5 in Appendix C presents the average concentration in each grid as well as the results of the three ditch samples. The onsite Commission representative gave permission for the areas to be backfilled.

The areas within approximately 100 feet of the RCA were also surveyed. The survey by EnergySolutions consisted of scans of approximately 10% of the area using the FIDLER probe and soil samples. Biased soil samples were to be collected from areas identified with the potential for elevated activity. Once the scanning has been completed and the biased samples, if required due to elevated scan measurements greater than background levels, had been analyzed, approximately 20 random soil samples would be collected. Apparently no bias samples were required and the EnergySolutions survey team elected to collect five samples from each of sides of the RCA extending out to 100 feet; with the actual locations to be determined by the survey team as an aid to assure that locations were random. The EnergySolutions team was observed performing the scans and collection of samples during the last day at the site; however, results were not available at that time.

It should be noted that the maps (drawings) presented in the RFP do not reflect the actual locations of the roads and ditch. For example, the north-south road borders the gridded area fence in Column AA and the east-west road also borders the fence but dissects the row 4. The pond at the entrance gate from the north as shown in the RFP might actually be a stagnant ditch which is also part of Column AA and continues beyond to the south. There is also a small standing area of water where the East-West road meets the North-South road; this water is connected by culvert to the stagnant ditch (described above as part of Column AA). The drawings in Appendix C were made to show as found conditions.

APPENDIX A
WEEKLY STATUS REPORTS

WINNIE WEEKLY REPORT 5/28-6/3/2007

Prepared by Claude Wiblin, CHP

Personnel & Site Safety:

- Daily H&S meetings are held and attendance record by signature is required.
- All work inside the fence area is controlled by Radiation Work Permit.
- Environmental air sampling started on 6/2 on both North and South sides of area.
- No reports of injuries except for a barbed wire puncture on a laborer's arm.
- The use of hard hats, safety glasses, and steel toe shoes is required for most work. PPE for radiation work varies per task.
- Humidity and temperature are monitored every hour to assure proper rest periods.
- Night guards started 5/30, 6 pm to 6 am.
- Pest control personnel sprayed the bees in the tool trailer and also the general area for fire ants.

Visitors and Staff:

Brian Voles, Texas RR Commission on 5/30.

Wayne Long, Corrigan, on 5/30.

Energy *Solutions* staff: 1 site supervisor, 1 lab supervisor, 1 lab technician, 2 HP technicians, 1 equipment operator, and 2 laborers.

Accomplishments by Energy *Solutions*:

- Road improved with several truckloads of rock.
- Mobile laboratory was provided with electricity.
- 4'x8' boards used during the well-capping (~1.5 years ago) were checked for contamination and removed from area (10% scan verification by ChesNuc).
- Fenced area was weed whacked (6/2&3) and cleared of major vegetation including one tree.
- A basic grid was established based upon the fence line using stakes and white paint.
- Scanning for the base line survey was started.

Comments/Issues:

- Although the fence area was reported in the RFP as 130' by 115', the actual dimensions were about 140' by 115'. This means that figure 3 of the RFP (page 19 of 63) does not accurately show the location of the smaller cells. The location for Sample id C4-4 which requires excavation covers most of the access road to the mobile laboratory. Further, the mobile laboratory trailer sets on portions of grid cells E4 and D4. Note that subcell D4-2 was identified as > 6 pCi/g and must be excavated and it is in close proximity to the trailer.
- There is a Mr. Dustin Grant of the Texas USDA (512.925.8097) who may impose a mandatory killing of fire ants prior to shipping soil. Apparently the USDA must approve the protocol and USDA will perform periodic inspections of the soil to ensure that it is ant-free. The process is reported to initially take two-three weeks. If this is true, soil shipments should not be expected at least until the end of June or early July.
- Rain and thunder storms hampered work this week. All drainage ditches near the site contain water and it has not rained for over 24 hours. This may become an issue during excavation as wet soil may not be shipped.
- Collection of samples for the TCLP has slipped as total field access was not available until 6/3.

- Liquid and soil samples could not be analyzed in the mobile laboratory this week as the pressure of liquid nitrogen tanks exceeded the supply hoses to the lab.
- Work week consisted of working 7-12s.

WINNIE WEEKLY REPORT 6/4-10/2007

Prepared by Claude Wiblin, CHP

Personnel & Site Safety:

- Daily H&S meetings are held and attendance record with signature is required.
- All work inside the fence area is controlled by Radiation Work Permit.
- Environmental air sampling continues on both North and South sides of area.
- No reports of injuries.
- The use of hard hats, safety glasses, and steel toe shoes is required for most work. PPE for radiation work varies per task.
- Humidity and temperature are monitored every hour to assure proper rest periods.
- Night guards onsite daily from 6 pm to 6 am.

Visitors and Staff:

Brian Voles, Texas RR Commission on 6/4-7.

Byron Krysher, Texas RR Commission on 6/4-8.

Rubin Cortez, DSHS 6/5-8

EnergySolutions staff: Doug Schultz, Project Manager, with 1 site supervisor, 1 lab supervisor, 1 lab technician, 2 HP technicians, 1 equipment operator, and 2 laborers.

Accomplishments by EnergySolutions:

- Sampling for the Baseline Characterization Survey was completed.
- Liquid from the tall plastic tank was pumped to the shorter one.
- The mobile laboratory performed quality control tests on Friday and Saturday; expected to be fully functional next week.
- ~30 pipes each 30' long were cut into sections to fit into shipping boxes. One box was filled with the remainder staged for a second box.

Comments/Issues:

- Work performance is hindered due to the mandatory and long rest periods for relief from the excessive humidity; 15 min of work followed by 45 min of rest which is imposed about one-half of the work day.
- The USDA requires the killing of fire ants prior to shipping soil. The USDA has provided a protocol and USDA will perform periodic inspections of the soil to ensure that it is ant-free. Depending upon the process selected it may take one-three weeks to complete.
- On Wednesday June 6, cattle escaped into the field adjacent to the work area. The rancher was upset and the staff assisted with driving the ~60 or so cows back to the proper area. All gates are now required to be closed as used.
- Sunday, June 10 was first non-work day. The work week consisted of 10 hour days and 12 hour days.
- The well-head is encased with a ~6' diameter ~7' tall corrugated pipe filled with concrete (dyed pink) to within a two feet of the top. This mass is sitting on an area which is greater than 6 pCi/g and must be excavated. Per Mr. Krysher; the concrete at the well-head will stay in place which will make excavation difficult.
- Mr. Parkhurst indicated that the sediment in the work-over tank was one foot deep at the western side and sloped to bottom in six feet. This correlates to a sediment volume of 170 gallons.
- The ChesNuc office trailer arrived Thursday and was set up. Chesnuc personnel are now independent of EnergySolutions. An office space in this trailer is available for use by DSHS and the RR Commission staff.

- Mr. Krysher reported that per Mr. Pete Fisher's agreement with Rubin Cortez, DSHS, there will be no MARSSIM survey.
- Mr. Schultz has a broken ankle and must use crutches. He has not entered the RWP area but he must traverse other potential hazards such as the loose rocks in the temporary roadbed and the stairs to enter and exit the trailers.
- Joe Moon will replace Claude Wiblin until June 19. Mr. Moon received his onsite briefing Friday, June 8

WINNIE WEEKLY REPORT 6/11-17/2007

Prepared by Claude Wiblin, CHP,
With Field Notes of Joe Moon, CHP

Personnel & Site Safety:

- Daily H&S meetings are held and attendance record with signature is required.
- All work inside the fence area is controlled by Radiation Work Permit.
- Environmental air sampling continues on both North and South sides of area.
- No reports of injuries.
- The use of hard hats, safety glasses, and steel toe shoes is required for most work. PPE for radiation work varies per task.
- Humidity and temperature are monitored every hour to assure proper rest periods.
- Night guards are onsite daily.

Visitors and Staff this Week:

Brian Voles, Texas RR Commission.
Tim Prude, Texas RR Commission.
Pete Fisher, Texas RR Commission.
Byron Krysher, Texas RR Commission.
Jeffrey Santor, Laborer's Union

EnergySolutions staff: Doug Schultz, Project Manager, with 1 site supervisor, 1 lab supervisor, 1 lab technician, 2 HP technicians, 1 equipment operator, and 1 laborer.

Accomplishments by EnergySolutions:

- Two B-25 boxes were filled with cut up pipe, etc., removed from the fenced area, weighed, and stored on site. Tare and gross weights are available.
- Water from the workover tank was pumped to the poly tanks. Liquid was filtered prior to loading into a tank truck and the liquid was reported to be less than the exempt concentration limit for DOT shipments. The tank truck left on Saturday 6/16; a second truck is expected next week on Wednesday 6/20.
- Several core samples were obtained of the sediment in the workover tank. The sampling process was mostly successful but the sediment material appears to have a higher density towards the bottom, i.e., difficulty in obtaining a bottom sample.
- Gridding/painting of the smaller 20 square meter cells was performed on 6/12 -15. Note this process can not be completed yet as the site area still has several large surface objects (tanks, the wellhead, etc.).
- Ant bait was applied on 6/11 with treatment by professional services on 6/14.
- General cleanup of the area continued with material placed in a roll-off container for shipment at a later date. Several items were placed in the roll-off box. The honeybee colony in the tool trailer was exterminated which permitted the tool trailer to be broken apart and placed into the roll-off box also on 6/15.
- Two soil support frames were built to hold the dirt bags.
- The weighing scale was setup and leveled.

Comments/Issues/Schedule:

- At Mr. Fisher's suggestion as a cost saving measure, personnel from Chesapeake Nuclear Services left the site on 6/16 and are to return when soil excavation begins. Excavation is currently planned for two weeks post the ant treatment which corresponds to a return date of July 1. Please note that it rained immediately after the initial application and another application may be required which could delay the schedule.

- The performance of site work, including laboratory analysis, continues to be in accordance with EnergySolutions procedures.
- Doug Schultz reported that he has verbal permission to remove the concrete monolith above the well-head. Where this activity fits into the schedule is not yet known; the bottom of the concrete is probably contaminated. This will probably be a change order.
- Preparation and shipment of the liquid waste was six days behind (6/16) but should be completed by 6/23.
- Most of the water has been pumped out but preparation and shipment of the walkover tank sediment was six days behind (6/16). The current hold up is the dewatering which can commence after all liquid is pumped to poly tanks. Note: To keep additional rain out, a light plastic tarp was placed over the walkover tank.
- Rain and storms continue to hamper work. All outdoor work must stop during storms; work ended at 1500 hours on 6/14 due to a storm and there were two short storms causing some time loss on 6/15 (more than one hour).
- Most work days are ending after 10 hours at 1600. The crew was reduced to one laborer this week.
- Mr. Fisher indicated that the baseline data/report should be available next week from ES and wants our review/evaluation of it. This review work can be performed away from the site.

WINNIE WEEKLY REPORT 6/18-24/2007

Prepared by Claude Wiblin, CHP

No Chesapeake Nuclear Services personnel were on site this week. Personnel will return to the site on Monday, July 2. The following comments are primarily derived from email and phone conversation with Wayne B. Long, Corrigan Consulting, Inc.

Personnel & Site Safety: No issues are noted.

Observed Visitors and Staff this Week:

No laborers were observed on site on Tuesday, June 19.

ES personnel present: Schult, Parkhurst, 2 techs, 1 rig operator, 1 lab person
Brian Voyles (RRC) (06/19/07)

Wayne B. Long, Corrigan Consulting, Inc. (06/19/07)

Two ES employees from the ES Transportation Group (06/19/07)

One unidentified man – talked with Schult (06/19/07)

Accomplishments by Energy Solutions:

- Activity included the breaking up of the red concrete around the wellhead using a Bobcat with a jackhammer attached to the front (06/19/07)
- The 2nd tanker truck was filled on Wednesday, 06/20/07, and left the site for the ES Tennessee facility.

Comments/Issues/Schedule:

- There is still some activity by the ants. The impact on the schedule due to the potential shipment of living ants is not yet determined. The planned excavation is set for two weeks post the ant treatment which corresponds to July 2.
- The ES baseline data/report was not available for review/evaluation.
- The red concrete around the wellhead was reported to contain detectable concentrations of americium-241 of < 1 pCi/g (clean-up standard is 6 pCi/g). The disposition of this material is expected to prompt a change authorization request if shipped off site for burial at the ES Clive Utah facility.
- Preparation and shipment of the workover tank sediment is about two weeks behind schedule. This tank was to be emptied of sediment and removed prior to the excavation of the nearby contaminated soil. As the soil adjacent to this tank is contaminated above the release criteria, there is a potential for soil to be contaminated under the tank.

WINNIE WEEKLY REPORT 6/25- 7/1/2007

Prepared by Claude Wiblin, CHP

No Chesapeake Nuclear Services personnel were on site this week.

Comments/Issues/Schedule:

ChesNuc received the ES baseline characterization report on Friday, 6/29. Comments will be provided on Monday July 2.

Remobilization was postponed for ChesNuc personnel pending the ES actual start of soil excavation.

WINNIE WEEKLY REPORT 7/2-8/2007
Prepared by Claude Wiblin, CHP

No Chesapeake Nuclear Services personnel were on site this week.

Remobilization was postponed for ChesNuc personnel pending the ES actual start of soil excavation. Photos received from Roxie Voran (taken by Glen Parkhurst) on July 4 show the road access to the site and most of the site under water from the recent rains.

Mr. Michael Pries has replaced Doug Schult as the ES project Manager.

Baseline Characterization Report:

ChesNuc received the ES baseline characterization report on Friday, 6/29. Comments and questions were provided on Monday July 2 and repeated here. Comments were also provided on the attached excel sheet. On the excel sheet, a yellow highlight was placed on results now considered > the release criteria from the baseline survey but were not in the RFP. A blue highlight was placed on results now considered < the release criteria from the baseline survey but were reported as contaminated (> 6 pCi/g) in the RFP. A red highlight was used to draw attention to certain items that are discussed below.

For sample results inside the RCA:

Results from the RFP for Samples 3, 4 and 12 were not correctly listed. This is particularly important for sample number 12 as the RFP results were 23.2 pCi/g not 1 pCi/g. Number 4 was reported as 294 pCi/g in the RFP and this area is in the drainage path from the walkover tank and expected to vary; the baseline reported value of 1,095 pCi/g should not be considered as unexpected.

Areas D2-1, C2-3 and B3-2 need further characterization as baseline results are < 6 pCi/g; the RFP indicates these areas as > 6 pCi/g.

Areas E2-1 and D4-1 need further characterization as baseline results are > 6 pCi/g; the RFP indicates these areas as < 6 pCi/g.

I have not seen the excavation plan for ES on a map; is area B3-2 in the excavation plan for ES? The same question must be asked for area C3-5. The RFP does list the concentration for this area at 2.12 pCi/g but the baseline survey results are similar to the 12/06 results identified in the RFP showing the debris pile at 110 pCi/g and 49 pCi/g on the N and W sides.

Baseline sampling of the RFP Ditch 6 area shows two results from two samples: one at 0.37 pCi/g and one at 12.6 pCi/g. How far apart were these samples? What were the scan results? These results indicate non-homogeneous contamination and that contamination may be localized in some areas; less excavation could be possible? The current plan is to excavate layers of an entire sub-cell which may not be necessary for all areas.

Were the samples taken inside the fence bias or random? Are there direct results for a long count over the sampling area? I observed the ES team scanning but the scan results are not included; is there a correlation to the scan results and the concentration results? If the scan results could be provided including the approximate area scanned (shown on a map) then better recommendations could be made regarding follow-up surveys.

Without the scan data, I would recommend that the new areas now considered as > release criteria but were not shown as such in the RFP and vice-versa be rescanned and resampled. A 100% scan of the immediate area (100 square feet) surrounding sample points with scan data

recorded and soil sampling of elevated areas is recommended. This would help assure that we are surveying where those are listed in the RFP. This new survey would also provide data on the physical size of elevated areas which has not been available.

If there are new surface areas > 6 pCi/g, then the possibility does exist that sub-surface contamination exceeding the release criteria exists also. For projecting volumes and costs, these sub-surface areas should be sampled now.

For the samples outside the RCA and collected prior to improving the road only one requires comment. Sample number 10 indicates a 2.99 pCi/g contamination level which is half of the release criteria; the highest of all samples in this series. This result is not unexpected as this area appears to be close to C4-4 which the RFP reported as 20.5 pCi/g and the grid area extends beyond the fence. This sampling area appears to be in a planned excavation area.

WINNIE WEEKLY REPORT 7/9-15/2007

Prepared by Claude Wiblin, CHP,

Personnel & Site Safety:

- Daily H&S meetings are held and attendance record with signature is required.
- All work inside the fence area is controlled by Radiation Work Permit.
- Environmental air sampling continues on both North and South sides of area.
- No reports of injuries.
- The use of hard hats, safety glasses, and steel toe shoes is required for most work. PPE for radiation work varies per task.
- Humidity and temperature are monitored every hour to assure proper rest periods.
- Night security guards are onsite daily.

Visitors and Staff this Week:

7/11 Byron Krysher, Texas RR Commission.
7/11-13 Brian Voles, Texas RR Commission.
7/12-15 Arthur Correa, Texas RR Commission
7/12&13 Thomas Cardwell, Manager Radiation Inspection Branch, DSHS
7/12&13 Rubin Cortez, Inspector, DSHS
7/13 Wayne Long, Corrigan

EnergySolutions staff: Michael Pries, Project Manager, with 1 site supervisor, 1 lab technician, 2 HP technicians, 2 equipment operators, and 2 laborers.

ChesNuc personnel Claude Wiblin and Byron Bland on site beginning 7/11.

Accomplishments by EnergySolutions:

Twenty-one soil bags were filled 7/12-15. The weights and concentrations that were available at report time are attached in a table. Figure 1 below shows the filling of one; only the inner plastic liner is visible here. A drawing is also attached indicating where excavation took place this week.



Figure 1

Figure 2 below shows Cell D-1 (to the left) and part of Cell C-1 after the first lift.



Figure 2

Figure 3 below shows a bag being checked for contamination prior to weighing it.



Figure 3

Grid areas E-1 through E-4 were scanned with FIDLER probe detectors which are sensitive to Am-241 gamma energy. ES determined that contamination was identified >6 pCi/g in the 20 m² sub-cells 1, East half of 3, and 4 in each of the Cells E1, E2, E3, and E4. There is a sloping drainage ditch (see small valley between the surveyors in Figure 4 below) which separates these cells from the western half of the E cells and contamination has been found only on the eastern side; one exception being Cell E-1 while Cell E-0 has not been fully scanned. Note that excavation of the sub-cell 3's is planned in only the eastern half of each pending acceptance of a QAPP change.



Figure 4

Comments/Issues/Schedule:

- The ChesNuc review of the baseline data/report was submitted via e-mail on 7/12. The review included comments on ES scan data and soil sampling results. As identified in the review, higher surface radiation levels were reduced through excavation this week. ES plans on cleanup of the E cells next week followed by excavation of the first lifts on D-2, C-2, and B-2. This effort should permit better demarcation of small elevated areas and “focused” remediation.
- With the removal of the elevated areas, scanning has revealed that a larger portion of the Grids E1- E4 should be considered contaminated > 6 pCi/g. Samples were collected on 7-13 but result are not yet available from the lab. Enough data from samples and scanning should be available by COB Tuesday to perform a review of the potential volume of contaminated soil. This review will include the impact of “focused” remediation.
- Work stopped due to rain on Sunday about 9 am.

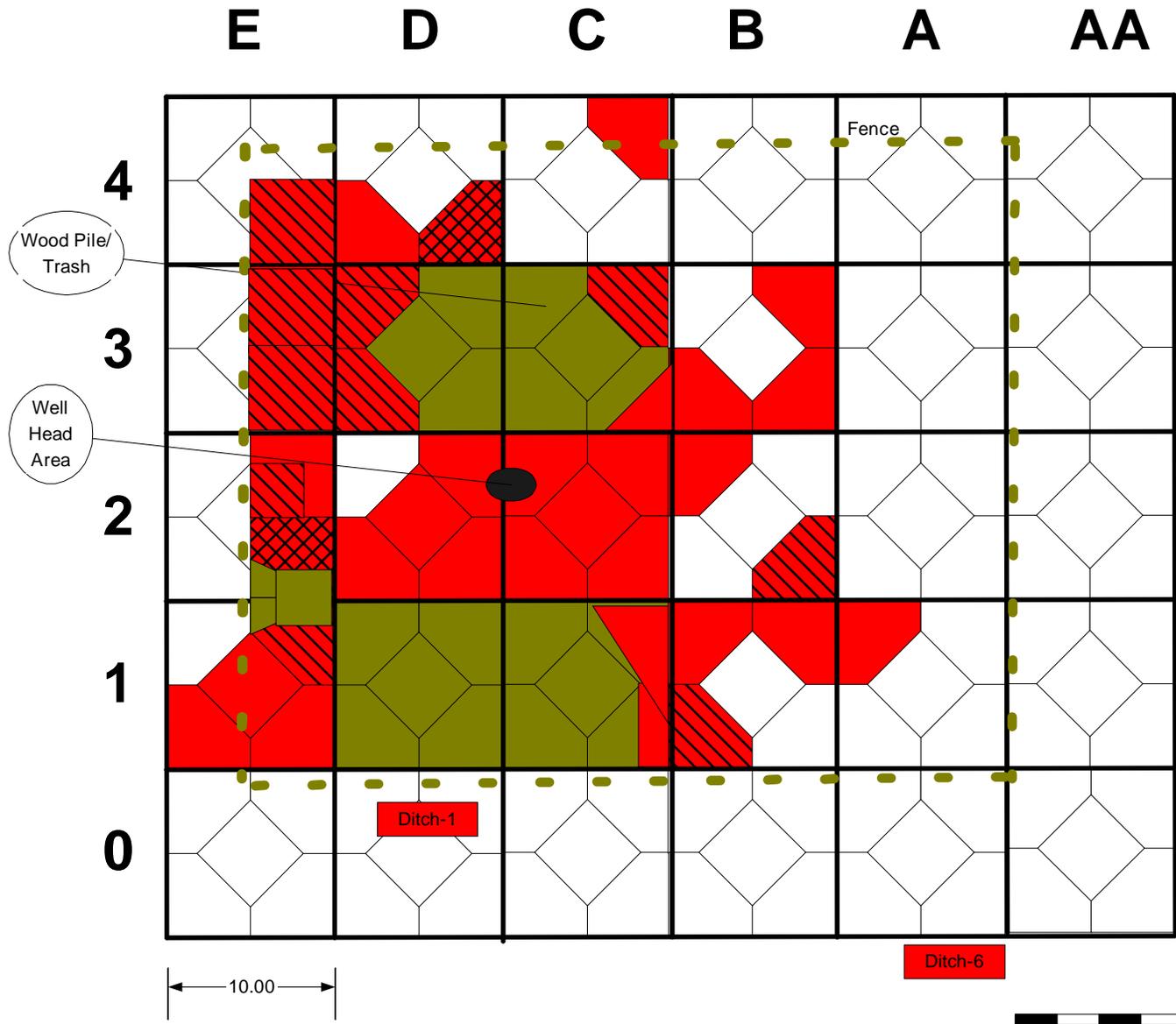
Filled Soil Bags (7-15-07 Weekly Report)

Date Filled	ES Bag #	Collected In Grid/Cells	Weight (lbs)	Conc. (pCi/g)
12-Jul	3	D-1/1,2	8105	90
12-Jul	4	D-1/1,2	8836	2410
13-Jul	5	D-1/1,5	9539	322
13-Jul	6	D-1/1,5	10170	1111
13-Jul	7	D-1/1,2,3	8832	1360
13-Jul	8	D-1/1,3,4	9620	100
13-Jul	9	D-1/1 C1/2,5	9039	200
13-Jul	10	D-1/4 C1/2,4,5	8772	113
13-Jul	11	C-1/2,3,5	8872	61
13-Jul	12	C-1/1,2,3,4	9717	55
13-Jul	13	C-1/1,2,3,4,5	10275	33
14-Jul	14	D-3/4	7796	*
14-Jul	15	D-3/3,4 C-3/2	8712	*
14-Jul	16	C-3/2,3	9543	*
14-Jul	17	C-3/2,3	8743	*
14-Jul	18	D-3/1,3,4	9537	*
14-Jul	19	D-3/1	9631	*
14-Jul	20	D-3/4 C-3/1,3,5	9682	*
14-Jul	21	C-3/1,3,5	10190	*
14-Jul	22	C-3/1,3	**	*
15-Jul	23	E-1/4 E-2/1	7446	*

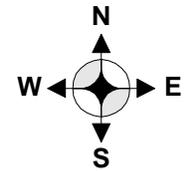
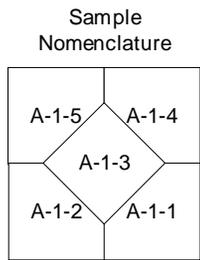
* Lab results were not available at report time.

** Scale was broken when filled; > 10,000 lbs and to be weighed later.

7/15/2007 Excavated Areas - 1st Six Inch Lift



-  RFP Sample Results > 6 pCi/g
-  Baseline Sample Results > 6 pCi/g
-  Scan >12k cpm
-  Excavated Area - 6" Lift



Former D&G Operating Company
 Evans Unit 05775 Lease
 Chambers County
 Winne, Texas

C. Wiblin 7/15/07



WINNIE WEEKLY REPORT 7/16-22/2007

Prepared by Claude Wiblin, CHP

Personnel & Site Safety:

- Daily H&S meetings are held and attendance record with signature is required.
- All work inside the fence area is controlled by Radiation Work Permit.
- Environmental air sampling continues on both North and South sides of area.
- No reports of injuries.
- The use of hard hats, safety glasses, and steel toe shoes is required for most work. PPE for radiation work varies per task.
- Humidity and temperature are monitored every hour to assure proper rest periods.
- Night security guards are onsite daily.

Visitors & Staff This Week:

7/16-18 Brian Voles, Texas RR Commission.
7/17 Arthur Correa, Texas RR Commission
7/17 Richard Moss, ES Health & Safety
7/17-19 Barron Bradly, ES Waste Shipping
7/17-19 Lance Lowe, CHP, ES Oakridge
7/18-20 Byron Krysher, Texas RR Commission.
7/21-22 Peter Fisher, Texas RR Commission

EnergySolutions staff: Michael Pries, Project Manager, with 1 site supervisor, 1 lab technician, 2 HP technicians, 2 equipment operators, and 2 laborers.

ChesNuc personnel Claude Wiblin and Byron Bland on site.

Accomplishments by EnergySolutions:

- Two waste shipments were made Thursday to Clive, Utah consisting of one roll off box on one truck and one C-Lan box, 2 B-25 boxes and one B-12 box on the second. Volumes for the roll off – 675 ft³, C-Lan- 1,280 ft³, B-25 box - 95 ft³, and the B-12 box – 45 ft³. See figures below.



Figures 1&2 Waste Loaded on Hittman Trucks to Clive, Utah

- With this week's effort of filling 21 soil bags, ES has placed a total of ~218 yd³ of contaminated soil into 44 bags for shipment; 47% of the contract estimate of 465 yd³. Attached is a listing of the filled bags, the date filled, the grids filled from, weight and concentration as known at report time.
- ES presented soil sampling results for two 100 m² grid areas (A1 and A2) which averaged < 6 pCi/g in each individual grid. These areas were independently scanned by ES and ChesNuc and no elevated areas were identified. As a quality control check and at Mr. Fisher's direction, Area A1-5 was sampled once at a two foot depth and the results were 0.04 pCi/g. Areas A1 and A2 were accepted by the RRC as decontaminated and a control rope was hung to preclude additional traffic in the area. Soil sampling results are presented in the following table. Note that the value of 8.96 pCi/g in cell A1-3 is acceptable per DSHS and RRC averaging directions discussed below.

Grid-Cell	Conc. (pCi/g)	Grid-Cell	Conc. (pCi/g)
A1-1	4.13	A2-1	0.07
A1-2	1.70	A2-2	1.46
A1-3	8.96	A2-3	4.2
A1-4	2.80	A2-4	4.1
A1-5	2.84	A2-5	0.3
Average	4.09		2.04

Comments/Issues/Schedule:

- Rains, equipment stuck in the mud, and lifting limits of fork lifts were the primary issues which slowed work this week. In spite of the hindrances listed below, ES made considerable progress this week as shown above.
 - On Monday morning, the load capacity of the fork lifts was questioned as the operators had reported instability during operation under load. Operator manual limits were different from technical specifications; situation continued into Tuesday.
 - Work stopped due to rain on Monday about 2 pm.
 - Tuesday- No bag loading as fork lifts had not been replaced.
 - Wednesday- One fork lift stuck in Grid E3-4 until 1530; no bags filled.
 - Thursday, work stopped due to rain at 0930, resumed about 12:30.
 - Work stopped about 1 pm on Friday due to rain.
- The tires on the fork lifts are making ruts in the wet soil, routinely > 6" deep, and occasionally getting stuck. This creates a potential for cross contamination from one grid area to another; also from one layer to one or more layers below. See the following photos 3 and 4 illustrating the deep rutting. On Friday, Byron Krysher, RRC, requested M. Pries to limit moving bags across the grid areas to reduce potential of cross contamination. Work in the A grids was performed under Mr. Fisher's observation on Saturday and Sunday.



Figure 3, Deep Ruts In Approximate Center of Grids (Looking NE)



Figure 4, Ruts in Eastern Part of Grid Area (Looking South)

- Although both fork lifts have been replaced with those that can safely handle the weight of a filled bag, the new lifts did not solve the rutting issue. ES has ordered a large crane to lift an individual bag from the point of fill to outside the grid area. The crane is expected to be setup and operational before noon on Monday, July 23; at that time, the excavator will be the only moving piece of equipment in the grid area. These changes will eliminate the current rutting problem and improve bag handling efficiency as the crane can also weigh the bags. The bags had been weighed after they were transferred outside the grid area; time will be saved.
- On Sunday, Mr. Fisher, RRC, provided an e-mail describing an operational decision in which DSHS concurs. This decision provides guidance for averaging grid sample results and for when additional excavation in a subgrid is not required. Mr. Fisher requested ES to implement the following immediately:
 - Each 100 square meter grid may be released provided that the results of the five 20 square meter sub grids average 6 pCi/g or less AND as long as each subgrid result is not greater than 12 pCi/g.
 - If a 20 meter sub grid has a concentration of 6 pCi/g or less after any 4 to 6 inch lift is removed and the tabulated results of the RFP indicate contamination greater than 6 pCi/g at deeper depths, then the removal of additional soil is not necessary as the results of the average 5-point composite sample is deemed more representative of the average concentration than the single RFP sample result.
- A rough estimate of the total soil volume for removal was developed by ChesNuc for the RRC and submitted by e-mail on 7-18. The estimate considers an entire small grid of 20 sq meters, when found contaminated, must be removed entirely in a 6 inch lift. Identified volumes were about 500 cubic yards from the RFP data and 200 cubic yards from the additional surface areas now considered > 6 pCi/g. This volume is considerable higher than that under discussion and could go even higher if there is sub-surface contamination under the grid areas recently considered as > 6 pCi/g. There are 22 more small cells to evaluate and about half of those are expected to be contaminated due to their proximity of other contaminated cells. This evaluation will be updated next week with consideration of the DSHS and RRC averaging decision.
- Following Mr. Lowe's test for mixing the workover tank sediment with cement this week, a decision has not been reached on the best path forward. ES may propose one of the following:
 - Ship in special casts for treatment in Tennessee.
 - Mix and reduce concentration with sand/concrete at the Winnie site.
 - Place small bags containing sediment into several routine soil bags for dilution and then shipment. The small bags would not be opened.

If the 2nd option above is selected, detailed procedures and a work plan needs to be established to handle the highly concentrated radioactive material. If the 3rd option is selected, procedures should be developed immediately as bagging efforts will intensify next week and will most probably end before two weeks from now.

Filled Soil Bags

Date Filled	ES Bag #	Collected In Grid/Cells	Weight (lbs)	Conc. (pCi/g)
12-Jul	3	D-1/1,2	8105	90
12-Jul	4	D-1/1,2	8836	2410
13-Jul	5	D-1/1,5	9539	322
13-Jul	6	D-1/1,5	10170	1111
13-Jul	7	D-1/1,2,3	8832	1360
13-Jul	8	D-1/1,3,4	9620	100
13-Jul	9	D-1/1 C1/2,5	9039	200
13-Jul	10	D-1/4 C1/2,4,5	8772	113
13-Jul	11	C-1/2,3,5	8872	61
13-Jul	12	C-1/1,2,3,4	9717	55
13-Jul	13	C-1/1,2,3,4,5	10275	33
14-Jul	14	D-3/4	7796	89
14-Jul	15	D-3/3,4 C-3/2	8712	37
14-Jul	16	C-3/2,3	9543	38
14-Jul	17	C-3/2,3	8743	86
14-Jul	18	D-3/1,3,4	9537	120
14-Jul	19	D-3/1	9631	101
14-Jul	20	D-3/4 C-3/1,3,5	9682	19
14-Jul	21	C-3/1,3,5	10190	22
14-Jul	22	C-3/1,3	**	42
15-Jul	23	E-1/4 E-2/1	7446	15
15-Jul	24	E1-4, E2-1	**	*
15-Jul	25	D2-2, D1-5	**	201.2

* Lab results were not available at report time.

** To be weighed later.

Filled Soil Bags (Continued)

Date Filled	ES Bag #	Collected In Grid/Cells	Weight (lbs)	Conc. (pCi/g)
16-Jul	26	D2-2, D1-5	7480	228.6
16-Jul	27	D2-3 + drums***	7520	65.8
16-Jul	28	D2-3, C2-2	10360	37.3
16-Jul	29	C1-4, D2-1	8814	27.2
16-Jul	30	C1-4, C2-2	10226	49.6
21-Jul	31	A1-2	**	65.4
21-Jul	32	A1-2	**	32.7
21-Jul	33	A1-5	**	18.9
21-Jul	34	A2-1,2	**	106.1
21-Jul	35	A2-1,2	**	30.5
21-Jul	36	A2-1,2	**	4.3
21-Jul	37	A1-2	**	*
21-Jul	38	A1-2,5	**	*
22-Jul	39	A2-1,5	**	*
22-Jul	40	A2-1,5	**	*
22-Jul	41	A2-1,5	**	*
22-Jul	42	A2-1,5	**	*
22-Jul	43	C2-2,3	**	*
22-Jul	44	C2-2,3	**	*
22-Jul	45	C2-2,3	**	*
22-Jul	46	C2-2,3	**	*

* Lab results were not available at report time.

** To be weighed later.

*** Considered as 3 yd³ as drums and another bag material were also placed in this bag.

Note that Bag 1 which contained site drum waste has been placed into Bag 27. A similar fate for Bag 2 is planned into a future bag.

Bags identified as < 6 pCi/g may be re-sampled for qc purposes.

WINNIE WEEKLY REPORT 7/23-29/2007

Prepared by Claude Wiblin, CHP

Personnel & Site Safety:

- Daily H&S meetings are held and attendance record with signature is required.
- All work inside the fence area is controlled by Radiation Work Permit.
- Environmental air sampling continues on both North and South sides of area.
- No reports of injuries.
- The use of hard hats, safety glasses, and steel toe shoes is required for most work. PPE for radiation work varies per task.
- Humidity and temperature are monitored every hour to assure proper rest periods.
- Night security guards are onsite daily.

Visitors & Staff This Week:

7/23,28,29 Peter Fisher, Texas RR Commission
7/24,25 Byron Krysher, Texas RR Commission.
7/25,26,27 Brian Voles, Texas RR Commission
7/24-26 Lance Lowe, CHP, ES Oakridge
7/26 Two representatives from Sun Oil to observe digging near underground line.

EnergySolutions staff: Michael Pries, Project Manager, with 1 site supervisor, 1 lab technician, 2 HP technicians, 2 equipment operators, and 2 laborers.

ChesNuc personnel Claude Wiblin and Byron Bland on site.

Accomplishments by EnergySolutions:

- With this week's effort of filling 47 soil bags, ES has placed a total of ~440 yd³ of contaminated soil into 91 bags for shipment; 96% of the contract estimate of 465 yd³. Attached is a listing of the filled bags, the date filled, the grids excavated, weight and concentration as known at report time. In-scope sediment was placed into several bags and completed; discussed in detail below. The following photo shows the bags stored for shipment.



Figure 1. Filled Soil Bags Stored At Site

- ES has presented soil sampling results for several grid areas, see attached drawings. Results of soil sampling for most are still pending. These areas were independently scanned by ES and ChesNuc and no elevated areas were identified. Control ropes were hung to preclude additional traffic in the areas. Soil sampling results are presented in the following table. Mr. Krysher informed Mr. Pries on 7/25 that backfilling could be performed as areas are confirmed to be < 6 pCi/g.
- The in-scope sediment (2 yd^3) was placed into soil bags this week. The sediment was hand shoveled into plastic lined 5-gallon pails with the pail contents distributed over 23 soil bags. See the following three photos.



Figure 2. Pails Used For Sediment Transport To Bags



Figure 3. Sediment Transfer Into Pails



Figure 4. Placing Sediment In Soil Bag

Comments/Issues/Schedule:

On 7-23, a crane was setup in Row A to lift the soil bags from the work area to the roadway. As the reach of the crane for the weight of the bags is ~75 feet, it will be moved into Row B and then Row C as necessary. The use of the crane versus fork lifts will significantly decrease the cross contamination of grids and layers in grids. See photo below showing the crane in operation.



Figure 5. Crane Lifting Soil Bag to Road

- A rough estimate of the total soil volume for removal as developed by ChesNuc is now at about 262 yd³ or 52 bags. The estimate considers an entire small grid of 20 sq meters, when found contaminated, must be removed entirely in a 6 inch lift. This estimate is pending actual conditions found in the C and D areas near the well head.
- Mr. Fisher gave a written change order to ES to mix the out of scope sediment into the soil as it is placed in bags. He also gave verbal permission to excavate out of scope soil.
- Rain continues to be an issue as work must stop during any rain. Wet ground will impact the final scans of the grid areas as the gamma energy is low and will be partially shielded by any standing water. Mr. Fisher agreed to permit ES to backfill any area that

has been scanned by ES and results of soil samples average < 6 pCi/g. This will preclude potential holdups of waiting for soil to dry.

- Work stopped due to rain Thursday at 10:30 am; resumed at 11 am only to be stopped again at 14:30.
- On Friday, digging was not possible due to rain.
- ChesNuc prepared a supplement review to the ES baseline survey which is enclosed. There appears to be enough data to indicate that areas outside the fence to the north and east are not contaminated to levels >6 pCi/g. Recommendations include that additional sampling of these areas in particular under the roadways is not necessary. DSHS needs to review and concur in the recommendations.
- All soil excavation should be completed this week and trucks are scheduled to begin taking soil bags to the Houston rail yard on Monday, August 6.

WINNIE WEEKLY REPORT 7/30-8/5/2007

Prepared by Claude Wiblin, CHP

Personnel & Site Safety:

- Daily H&S meetings are held and attendance record with signature is required.
- All work inside the fence area is controlled by Radiation Work Permit.
- Environmental air sampling continues on both North and South sides of area.
- No reports of injuries.
- The use of hard hats, safety glasses, and steel toe shoes is required for most work. PPE for radiation work varies per task.
- Humidity and temperature are monitored every hour to assure proper rest periods.
- Night security guards are onsite daily.

Visitors & Staff This Week:

7/29,30,31 & 8/1	Brian Voles, Texas RR Commission
8/1,2,3	Byron Krysher, Texas RR Commission
8/2,3,4,5	Carroll Mayfield, Texas RR Commission
7/29,31	Representatives from Sun Oil to observe digging near underground line.
8/3	Wayne Long, Corrigan Consulting, Inc.
8/3,4	Angela Slupe, Texas DSHS
8/3,4	Ruben Cortez, Texas DSHS

EnergySolutions staff: Michael Pries, Project Manager, with 1 site supervisor, 1 lab technician, 2 HP technicians, 2 equipment operators, and 2 laborers.

ChesNuc personnel Claude Wiblin and Byron Bland on site.

Accomplishments by EnergySolutions:

- With this week's effort of filling 69 soil bags, ES has placed a total of ~786 yd³ of contaminated soil into 160 bags for shipment. Attached is a listing of the filled bags, the date filled, the grids excavated, weight and concentration as known at report time. All sediment was placed into several bags; the listing shows what bags the sediment was placed in.
- ES has presented soil sampling results for several grid areas, see attached drawing. Results of soil sampling for most grids are still pending. These areas were independently scanned by ES and ChesNuc and as elevated areas are identified, they are further decontaminated. Control ropes are hung to preclude additional traffic in the acceptable areas.
- Backfilling is performed as areas are confirmed to be < 6 pCi/g and fill dirt is available. A total of 10 dump trucks have delivered about 12 cubic yards each.
- ES solidified all remaining liquids from the work over tank sediment.

Comments/Issues/Schedule:

- As shown in the photo, surface water will pool wherever soil is removed. Mr. Fisher has indicated that it is permissible to release an area based only upon soil sample results if the areas can not be dried and scanned thoroughly. ChesNuc is not to slow backfill efforts due to standing water or lack of scanning.



Figure 1. Pooling of Surface Water

- ES was working on the wellhead area on 7/31 and discovered that a cellar existed with highly contaminated clay/soil inside of it. Three samples were collected near the 12 inch depth and the results were reported as 796, 223 and 22 pCi/g. The cellar is 6'x6' by 3' deep and has a bottom; the cellar walls are 6" thick. Cleaning within the cellar walls is difficult as it must be done by hand shoveling in a small space. After cleaning out a 1 foot depth of soil and clay like material, two samples at that level were collected with results of ~1.4 pCi/g and 56.5 pCi/g. An additional composite sample was collected on 8/5 from all four cellar corners but analysis results were not available at report time.



Figure 2, Well Head Photo With Top of Cellar Showing

- All soil excavation should be completed this week and trucks are scheduled to begin taking soil bags to the Houston rail yard on Tuesday, August 7.
- A 1" to 2" thick concrete pad (~8'x8' and covered with 2" of soil) was discovered in grid C0; sampling above and below the pad did not indicate a radiological concern.
- ChesNuc presented the Supplement to the ES Baseline Survey Report and Mr. Cortez, DSHS, promised a favorable response via e-mail on 8/6.
- Scanning of the drainage ditch indicated elevated concentrations between the RFP sampling locations of Ditch 1 and Ditch 6. ES excavated a lift from the entire length between these locations; see below photo.



Figure 3, Excavation of Drainage Ditch

WINNIE WEEKLY REPORT 8/6-7/2007

Prepared by Claude Wiblin, CHP

ChesNuc personnel demobilized on 7 August 2007. No ChesNuc personnel were on site beyond that date and this report is limited to that time.

Personnel & Site Safety:

- Daily H&S meetings are held and attendance record with signature is required.
- All work inside the fence area is controlled by Radiation Work Permit.
- Environmental air sampling continues on both North and South sides of area.
- No reports of injuries.
- The use of hard hats, safety glasses, and steel toe shoes is required for most work. PPE for radiation work varies per task.
- Humidity and temperature are monitored every hour to assure proper rest periods.
- Night security guards are onsite daily.

Visitors & Staff This Week:

8/6-7 Byron Krysher, Texas RR Commission
8/7 Ruben Cortez, Texas DSHS

EnergySolutions staff: Michael Pries, Project Manager, with 1 site supervisor, 1 lab technician, 2 HP technicians, 2 equipment operators, and 2 laborers. Three ES employees arrived to prep the soil bags for transportation, grouping for weight and placarding.

ChesNuc personnel Claude Wiblin and Byron Bland on site.

Accomplishments by EnergySolutions:

- ES completed soil excavation with a total of ~800 yd³ of contaminated soil into 163 bags for shipment. Attached is a listing of the filled bags, the date filled, the grids excavated, weight and concentration as known at report time. Bag Number 162 remained open and in the grid area upon ChesNuc departure.
- Backfilling is performed as fill dirt is available. Fill dirt was spread on Grid areas A3-4 and B3-4 this week.
- Two tractor trailers were loaded with four soil bags each on Tuesday which were to stay on site overnight.

Comments/Issues/Schedule:

- A composite sample from the four corners of the wellhead cellar was collected and analyzed with results of 23.9 pCi/g. Considering the area within the grid C2, the weighted average for the grid including the cellar sample results was 4.5 pCi/g. Based on this weighted average, DSHS concurred that the remediation was acceptable.
- Mr. Krysher, RR Commission, stopped further excavation on Monday morning pending a review of additional required excavation. Based upon the additional minimal volume, dirt was added from Grid D1 to Bag 162.
- All soil excavation was completed this week and trucks are scheduled to begin taking soil bags to the Houston rail yard on Wednesday, August 8.
- Mr. Cortez, DSHS, indicated a favorable response to the ChesNuc Supplement to the ES Baseline Survey Report; however, no written response was received.

APPENDIX B

Review of Data From Energy *Solutions* Baseline Survey

REVIEW OF ENERGYSOLUTIONS BASELINE/CONFIRMATORY SURVEY

Prepared by Claude Wiblin, CHP

July 12, 2007

Baseline Characterization Report:

ChesNuc received the ES baseline characterization report on Friday, 6/29; a formal report from ES with their conclusions has not been made. Comments and questions were provided on Monday July 2 and repeated here. Comments were also provided on the attached excel sheet. On the excel sheet, a yellow highlight was placed on results now considered > the release criteria from the baseline survey but were not in the RFP. A blue highlight was placed on results now considered < the release criteria from the baseline survey but were reported as contaminated (> 6 pCi/g) in the RFP. A red highlight was used to draw attention to certain items that are discussed below.

Scan data was received on July 10 and comments are provided.

The radiation levels from the higher contamination sources (walkover tank, debris field, certain drums, etc.) probably skewed scan results to the high side for nearby measurements. Removal of these sources (including at least the top six inches of soil) should reduce the ambient gamma levels and then rescanning will provide more reliable data than that obtained in this survey.

Overall, ten new subcells have been identified as being potentially contaminated that were not identified as such in the RFP. A map is attached indicating the soil contamination from RFP data and the new areas under consideration because of results off ES Baseline Survey.

Soil Samples

For soil sample results inside the RCA:

Results from the RFP for Samples 3, 4 and 12 were not correctly listed. This is particularly important for sample number 12 as the RFP results were 23.2 pCi/g not 1 pCi/g. Number 4 was reported as 294 pCi/g in the RFP and this area is in the drainage path from the walkover tank and expected to vary; the baseline reported value of 1,095 pCi/g should not be considered as unexpected.

Areas D2-1, C2-3 and B3-2 need further characterization as baseline results are < 6 pCi/g; the RFP indicates these areas as > 6 pCi/g.

Areas E2-1 and D4-1 need further characterization as baseline results are > 6 pCi/g; the RFP indicates these areas as < 6 pCi/g.

Is area B3-2 in the excavation plan for ES? The same question must be asked for area C3-5. The RFP does list the concentration for this area at 2.12 pCi/g but the baseline survey results are similar to the 12/06 results identified in the RFP showing the debris pile at 110 pCi/g and 49 pCi/g on the N and W sides.

Baseline sampling of the RFP Ditch 6 area shows two results from two samples: one at 0.37 pCi/g and one at 12.6 pCi/g. These results indicate non-homogeneous contamination and that contamination may be localized in some areas; less excavation could be possible. The current plan is to excavate layers of an entire sub-cell which may not be necessary for all areas.

The new areas now considered as > release criteria but were not shown as such in the RFP and vice-versa be rescanned and resampled. A 100% scan of the immediate area (100 square feet) surrounding sample points with scan data recorded and soil sampling of elevated areas is

recommended. This would help assure that we are surveying where those are listed in the RFP. This new survey would also provide data on the physical size of elevated areas which has not been available.

If there are new surface areas > 6 pCi/g, then the possibility does exist that sub-surface contamination exceeding the release criteria exists also. For projecting volumes and costs, these sub-surface areas should be sampled now.

For the soil samples outside the RCA and collected prior to improving the road only one requires comment. Sample number 10 indicates a 2.99 pCi/g contamination level which is half of the release criteria; the highest of all samples in this series. This result is not unexpected as this area appears to be close to C4-4 which the RFP reported as 20.5 pCi/g and the grid area extends beyond the fence. This sampling area appears to be in a planned excavation area.

Scan Data

The baseline instructions did not require the higher scan data measurements to be accompanied with soil samples. 50 logged readings were in the area outside the fenced area and 35 readings inside the fenced area. The plan required that 50% of the accessible area within and without the fence area be scanned; however, conversation with the technicians indicated that a 100% scan was performed inside the fence.

Scan data outside the fence

Scan data outside the fence indicate a range of 8k to 10k which implies that contamination levels are low or background. Ditch one and Ditch six areas should be rescanned to confirm the boundary of contamination.

Scan data inside the fence

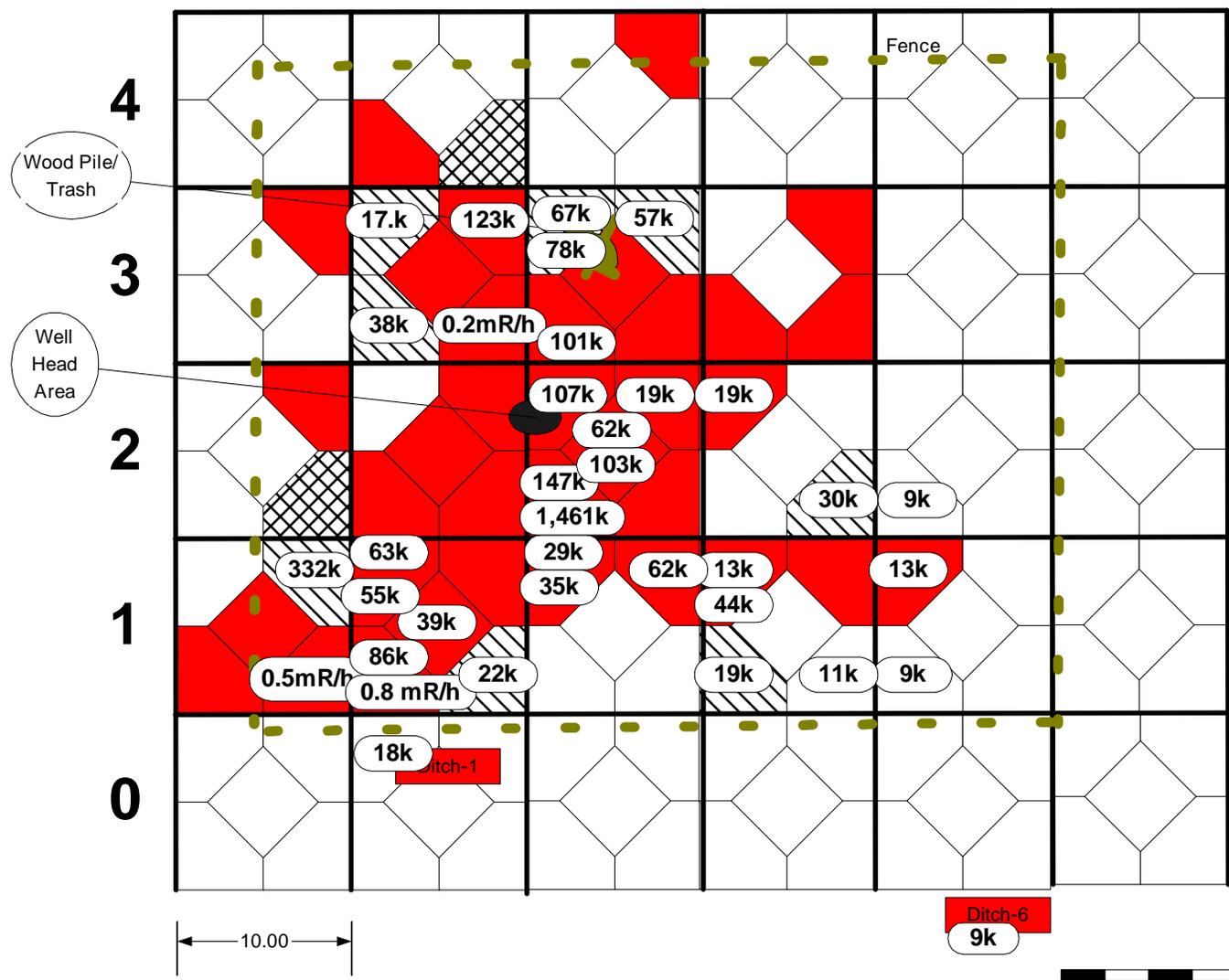
Scan data from inside the fence indicate that at least eight more subcells may be contaminated: B1-2, B2-1, C3-4, C3-5, D1-1, D3-2, D3-5, and E1-4. All of these subcells were logged as greater than 12k cpm while RFP soil sample results do not indicate > 6pCi/g. *These eight subcell areas need further characterization, both scanning and soil sampling, to confirm the contamination level.*

Attachments:

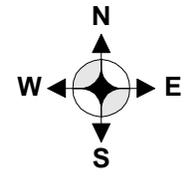
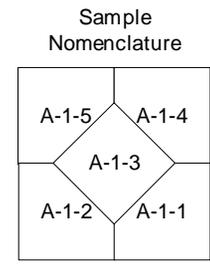
Map with Soil and Scan Results

Excel Spreadsheet

E D C B A AA



- RFP Sample Results > 6 pCi/g
- Baseline Sample Results > 6 pCi/g
- Baseline Scan >12k cpm
- 13k Baseline Scan Results cpm



Former D&G Operating Company
 Evans Unit 05775 Lease
 Chambers County
 Winne, Texas

C. Wiblin 7/12/07



BASELINE SAMPLE ANALYSIS RESULTS
In Side RCA

Detector	Samples Number	Analysis Date	Am-241	2 Sigma	MDA	Description	Grid Location	RFP Analysis	CW RFP	CW Comment
			Activity pCi/g	Error pCi/g				Results pCi/g	Review	
D-2	WI07-0096	6/13/2007	13.25	0.95		# 1	A1-5	32.23	okay	
D-1	WI07-0097	6/13/2007	30.18	1.69		# 2	B1-5	37.41	okay	
D-2	WI07-0097	6/13/2007	31.53	1.60		# 2	B1-5	37.41	okay	
D-1	WI07-0098	6/13/2007	20.98	1.66		# 3	C1-5	18.29	16.3	
D-2	WI07-0099	6/13/2007	1095.20	40.98		# 4	D1-2	15.21	294	walkover tank drain area
D-1	WI07-0100	6/13/2007	1.87	0.61		# 5	E1-1	0.71	okay	
D-2	WI07-0101	6/13/2007	12.70	0.85		# 6	E2-1	0.19	okay	NW of walkover tank
D-1	WI07-0102	6/13/2007	2.35	0.67		# 7	D2-1	15.21	okay	SW of Well head; down to 24"
D-2	WI07-0103	6/13/2007	1.06	0.26		# 8	C2-3	50.64	okay	ESE of Well head; down to 12"
D-1	WI07-0104	6/25/2007	30.48	1.67		# 9	B2-5	17.56	okay	
D-2	WI07-0104	6/25/2007	32.21	1.61		# 9	B2-5	17.56	okay	
D-1	WI07-0104 (QC)	6/25/2007	26.78	1.47		# 9	B2-5	17.56	okay	
D-2	WI07-0104 (QC)	6/25/2007	26.84	1.42		# 9	B2-5	17.56	okay	
D-1	WI07-0105	6/13/2007	0.22	0.32		# 10	A2-1	0.07	okay	
D-2	WI07-0106	6/13/2007	<		0.045	# 11	A3-4	0.26	okay	
D-2	WI07-0107	6/14/2007	3.78	0.43		# 12	B3-2	1.00	23.2	SW of tool trailer; down to 12"
D-2	WI07-0108	6/14/2007	75.03	3.29		# 13	C3-5	2.12	110 & 49	N & W of debris pile 12/06
D-1	WI07-0109	6/14/2007	17.39	1.08		# 14	D3-1	11.69	okay	
D-2	WI07-0110	6/14/2007	25.53	1.35		# 15	E3-4	6.50	okay	
D-1	WI07-0111	6/14/2007	1.63	0.36		# 16	E4-1	1.24	okay	
D-2	WI07-0112	6/14/2007	9.73	0.80		# 17	D4-1	2.57	okay	Far NW of debris pile
D-1	WI07-0113	6/14/2007	0.37	0.26		# 18	C4-3	1.17	okay	
D-2	WI07-0113 (QC)	6/14/2007	0.58	0.28		# 18	C4-3	1.17	okay	
D-1	WI07-0114	6/14/2007	0.43	0.23		# 19	B4-1	0.54	okay	
D-2	WI07-0115	6/14/2007	0.54	0.25		# 20	A4-1	0.08	okay	
D-1	WI07-0116	6/14/2007	0.56	0.24		# 21	D0-5	35.100 (Ditch 1)	okay	
D-2	WI07-0117	6/14/2007	0.37	0.17		# 22	Drainage Ditch	7,703 (Ditch 6)	okay	What about #13 below

BASELINE SAMPLE ANALYSIS RESULTS

Out Side RCA

Detector	Samples Number	Analysis Date	Am-241 Activity pCi/g	2 Sigma Error pCi/g	MDA	Description	Grid Location	RFP Analysis Results pCi/g
D-2	WI07-0027	6/11/2007	<		0.039	# 1		
D-2	WI07-0028	6/11/2007	0.20	0.22		# 2		
D-2	WI07-0028 (QC)	6/11/2007	0.10	0.20		# 2		
D-2	VI07-0028 (Recoun	6/11/2007	0.18	0.16		# 2		
D-1	WI07-0029	6/11/2007	0.16	0.23		# 3		
D-2	WI07-0030	6/11/2007	<		0.045	# 4		
D-2	WI07-0031	6/11/2007	0.13	0.18		# 5		
D-1	WI07-0032	6/11/2007	0.11	0.19		# 6		
D-2	WI07-0033	6/11/2007	<		0.070	# 7		
D-1	WI07-0034	6/11/2007	0.18	0.21		# 8		
D-2	WI07-0035	6/11/2007	<		0.060	# 9		
D-1	WI07-0036	6/11/2007	<		0.047	# 10		
D-2	WI07-0037	6/11/2007	0.13	0.22		# 11		
D-1	WI07-0038	6/11/2007	0.44	0.24		# 12		
D-2	WI07-0038 (QC)	6/11/2007	0.63	0.25		# 12		
D-1	VI07-0038 (Recoun	6/11/2007	0.57	0.23		# 12		
D-1	WI07-0039	6/11/2007	12.58	1.05		# 13	Drainage Ditch	7.703 (Ditch 6)
D-2	WI07-0040	6/12/2007	0.25	0.20		# 14		
D-1	WI07-0041	6/13/2007	1.46	0.48		# 15		
D-2	WI07-0042	6/13/2007	0.13	0.25		# 16		
D-1	WI07-0043	6/13/2007	0.14	0.22		# 17		
D-2	WI07-0044	6/13/2007	0.16	0.22		# 18		
D-1	WI07-0045	6/13/2007	0.26	0.20		# 19		
D-2	WI07-0046	6/13/2007	0.47	0.57		# 20		
D-2	WI07-0046	6/13/2007	0.47	0.57		# 20		
D-1	WI07-0047	6/13/2007	0.87	0.35		# 21		
D-2	WI07-0048	6/13/2007	0.12	0.13		# 22		
D-1	WI07-0049	6/13/2007	<		0.052	# 23		
D-2	WI07-0050	6/13/2007	0.48	0.33		# 24		
D-1	WI07-0051	6/13/2007	1.86	0.39		# 25		
D-2	WI07-0052	6/13/2007	1.62	0.29		# 26		
D-1	WI07-0053	6/13/2007	0.45	0.28		# 27		
D-2	WI07-0054	6/13/2007	0.16	0.21		# 28		
D-1	WI07-0055	6/13/2007	5.79	0.73		# 29		
D-2	WI07-0055	6/13/2007	5.98	0.62		# 29		
D-2	WI07-0056	6/13/2007	0.25	0.35		# 30		

BASELINE SAMPLE ANALYSIS RESULTS

Out Side RCA, Prior To Improving Road

Detector	Samples Number	Analysis Date	Am-241 Activity pCi/g	2 Sigma Error pCi/g	MDA	Description	Grid Location	RFP Analysis Results pCi/g
D-2	WI07-0010	6/10/2007	0.20	0.16		# 1		
D-2	WI07-0011	6/10/2007	0.31	0.14		# 2		
D-2	WI07-0012	6/10/2007	0.21	0.12		# 3		
D-2	WI07-0013	6/10/2007	0.88	0.22		# 4		
D-2	WI07-0014	6/10/2007	0.20	0.20		# 5		
D-2	WI07-0015	6/10/2007	<		0.049	# 6		
D-2	WI07-0016	6/10/2007	0.16	0.13		# 7		
D-2	WI07-0017	6/11/2007	0.40	0.23		# 8		
D-2	WI07-0018	6/11/2007	0.96	0.19		# 9		
D-2	WI07-0019	6/11/2007	2.99	0.36		# 10		
D-2	WI07-0020	6/11/2007	0.42	0.23		# 11		
D-2	WI07-0021	6/11/2007	<		0.102	# 12		

**REVIEW OF ENERGYSOLUTIONS BASELINE/CONFIRMATORY SURVEY
SUPPLEMENT 1**

Prepared by Claude Wiblin, CHP

July 24, 2007

Purpose of Supplement:

ChesNuc provided initial comments on the ES Baseline Survey data on July 12, 2007. A formal report from ES with their conclusions has not been made. The purpose of this supplement is to point out that data collected in the ES Baseline Survey supports the RFP assertion that most contamination was within the fenced area. Further, the data indicates that the grid areas identified as column AA and the northern half of Row 4 are below the release criteria of 6 pCi/g; both are roadways.

Many existing drawings do not have the gridded area shown which can lead to error. Although drawings with the grids show the northern edge of the fence as almost dividing sub-grid cells 4 and 5; the fence is actually closer to the southern border of them and dividing the central sub-grid 3 cells. Additionally, the fence on the east side is actually adjacent to the north south road which makes up the western half of the grids AA. The eastern half of the grids AA is mostly a ditch with standing (stagnant) water. See Drawing 1 as reflective of as found conditions with the RFP indicated contaminated areas > 6 pCi/g.

Data Review:

Drawing 2 indicates the soil samples collected before improvements and additional rock layers was placed on the road. Locations 2 through 7 would be located within the AA grid column and 9 through 11 would be located within the northern half of Row 4. The following table lists the sample results.

Table 1. Soil Sample Results Before Road Improvement

Description	ES Sample Number	Am-241 Activity	2 Sigma Error	MDA
		pCi/g	pCi/g	
# 1	WI07-0010	0.20	0.16	
# 2	WI07-0011	0.31	0.14	
# 3	WI07-0012	0.21	0.12	
# 4	WI07-0013	0.88	0.22	
# 5	WI07-0014	0.20	0.20	
# 6	WI07-0015	<		0.049
# 7	WI07-0016	0.16	0.13	
# 8	WI07-0017	0.40	0.23	
# 9	WI07-0018	0.96	0.19	
# 10	WI07-0019	2.99	0.36	
# 11	WI07-0020	0.42	0.23	

Drawing 3 indicates the random soil sample locations collected by ES outside the fenced area during the baseline survey. The sample locations 5 and 6 are in close proximity to the Grid areas AA and sample numbers 29 and 30 are outside the fence area but in Row 4. The following table lists these sample results.

Table 2. Results of Baseline Samples Near Roads

Description	ES Sample Number	Am-241 Activity	2 Sigma Error
		pCi/g	pCi/g
# 5	WI07-0031	0.13	0.18
# 6	WI07-0032	0.11	0.19
# 29	WI07-0055	5.98	0.62
# 30	WI07-0056	0.25	0.35

Sample number 29 indicates a 5.98 pCi/g contamination level which will be removed as part of the excavation effort. This sample location is at the border of the fence in the grassy area between the fence and the road. The sampling area is off the road and the result does not indicate that the road is contaminated above the release criteria.

Drawing 4 is shows the locations of scan data points. For this supplement review, scan points 2 through 7 and 47-48 are part of the grids AA; and 9-11 and 49-50 are part of Row 2. The scan data attached as ES Survey Number WI-07-0023 does not indicate elevated levels of contamination.

Comments/Suggestions:

Future drawings of the area should reflect that there is no pond immediately inside the gate (NE corner of most drawings). Drawings should reflect that the N-S road has its western edge at the fence line; show that about half of the AA column is a ditch on the eastern side. Drawings should reflect that the E-W road.

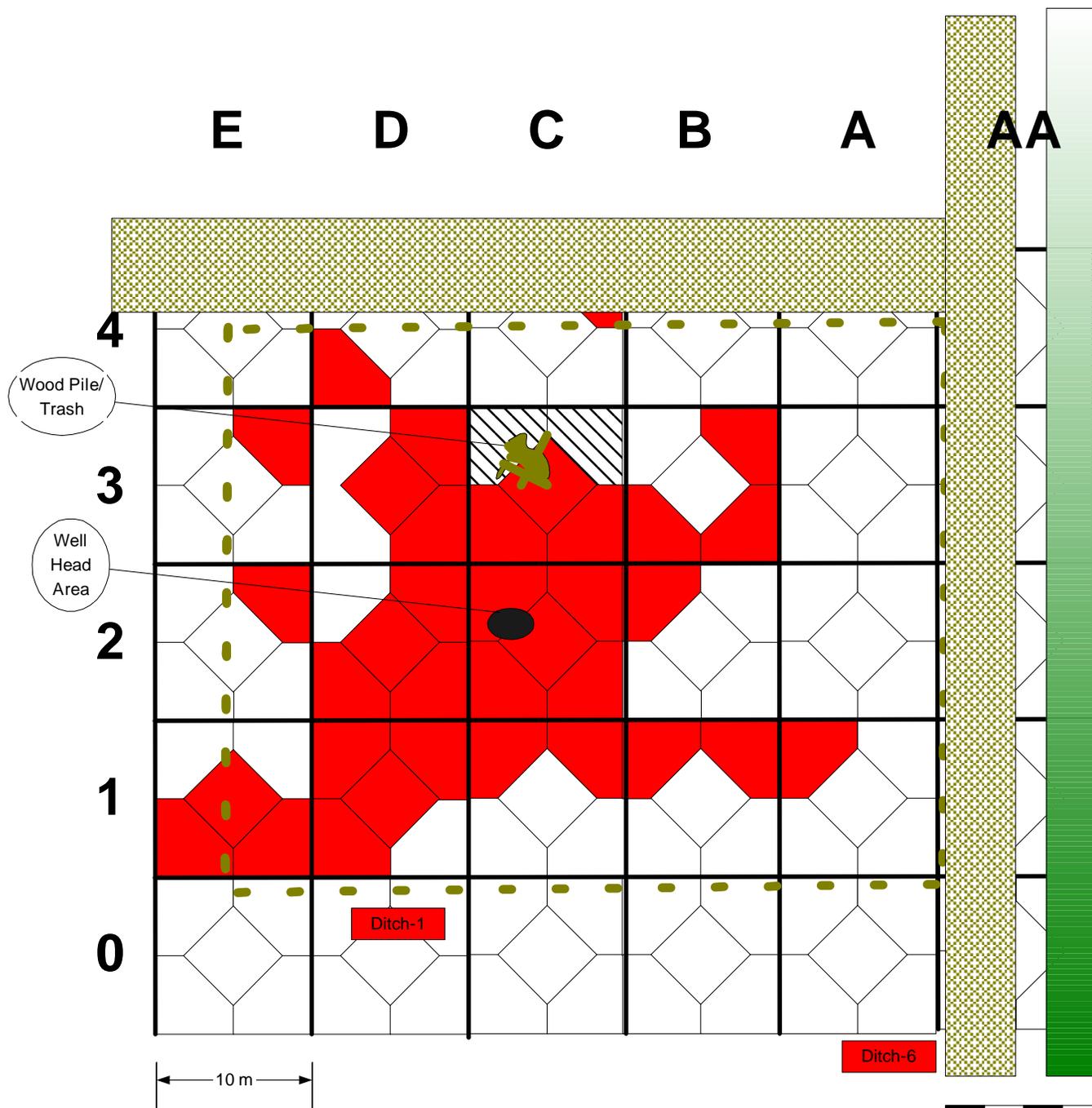
The boundaries of contamination on the north and west sides of the fenced area should be the road sides adjacent to the fenced area.

Scanning data and soil sampling results of the roadways demonstrate that the contamination levels are below 6 pCi/g; additional scanning and sampling is not warranted.

Scanning and soil sampling for final survey purposes should continue between the fenced area and the roadway in row 4. As the sub-grid cell 3 areas are reduced to about half, it is suggested that a 4 point composite is adequate (each point of the triangle and the approximate center of the remaining cell). For the sub-grid cell 4 and 5 areas, it is suggested that a one point sample is adequate. Particular attention should be made to Area C4-4 to assess that contamination does not continue under the roadway; excavation of the C4-4 would continue to where > 6 pCi/g is identified.

Attachments:

- Drawing 1 – As Found Survey Areas With RFP Contaminated Areas
- Drawing 2 – ES Soil Sample Locations Before Road Improvement
- Drawing 3 – ES Baseline Soil Sampling Locations Outside Fence Line
- Drawing 4 – ES Baseline Scan Data Locations
- Scan Data Survey WI-07-0023



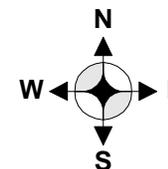
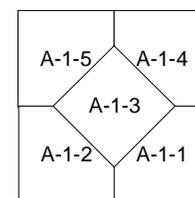
 RFP Sample Results > 6 pCi/g

 RFP Sample Results > 6 pCi/g; 1 m from debris

 Roadways

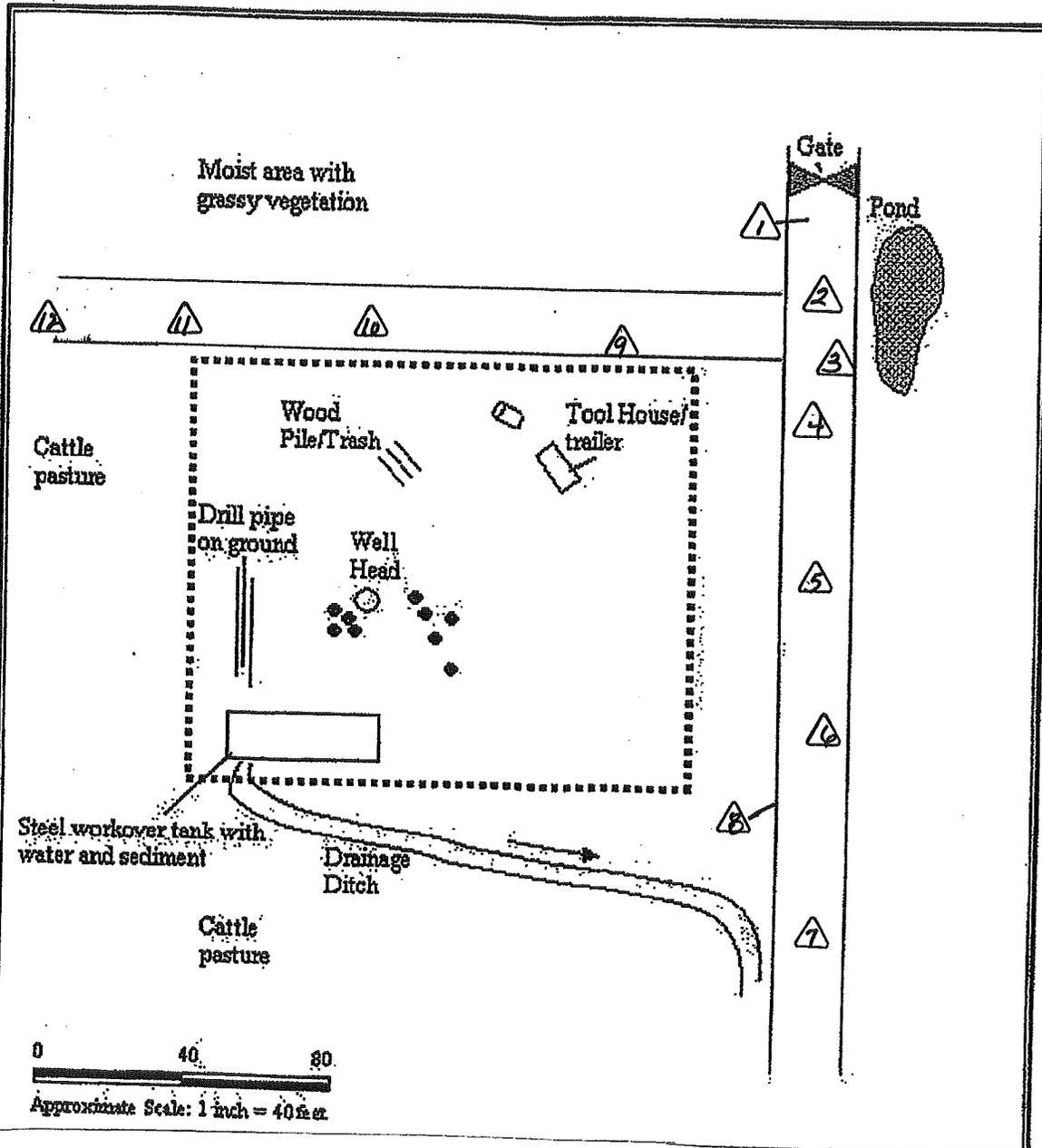
 Stagnant Ditch

Sample Nomenclature

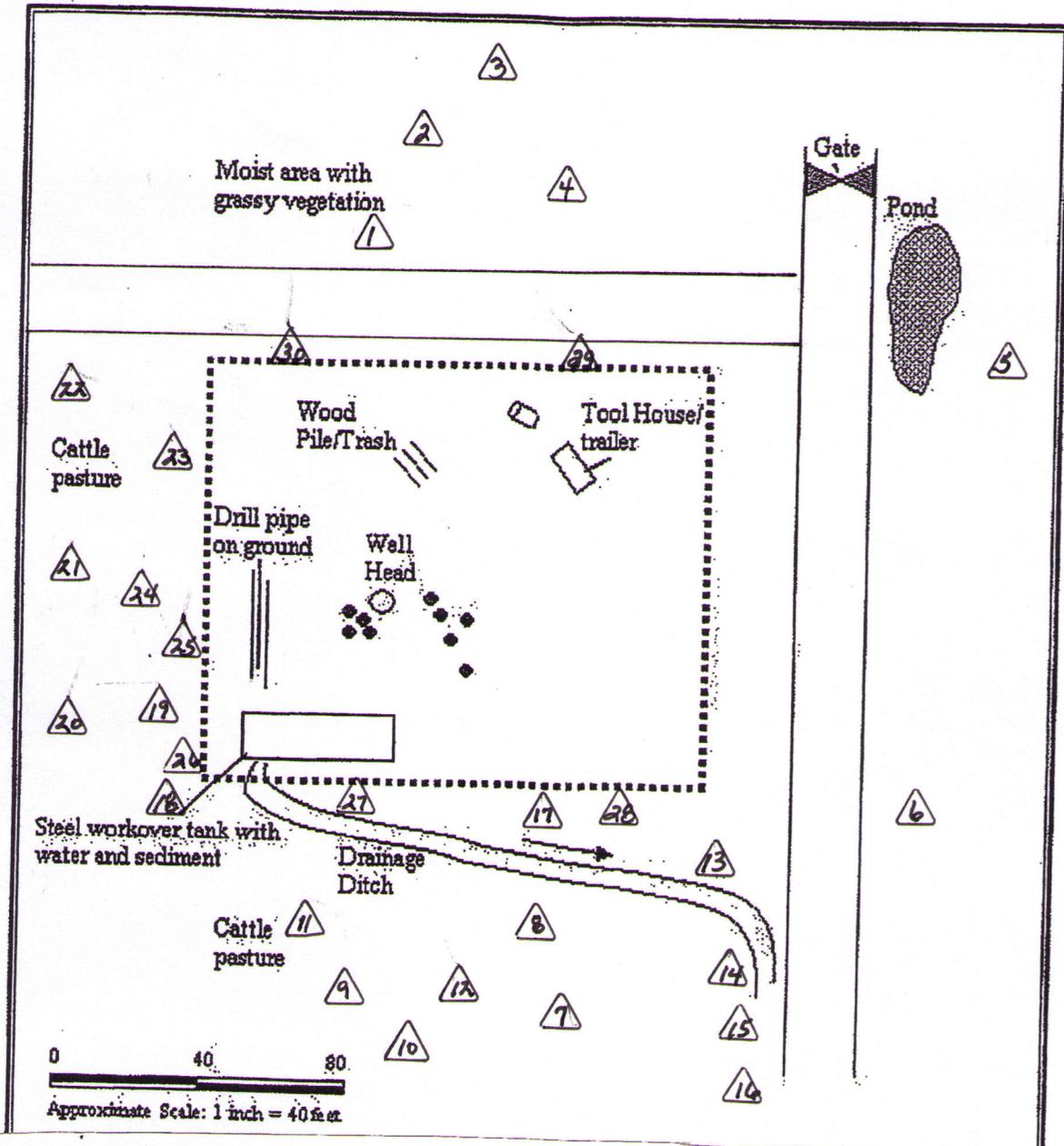


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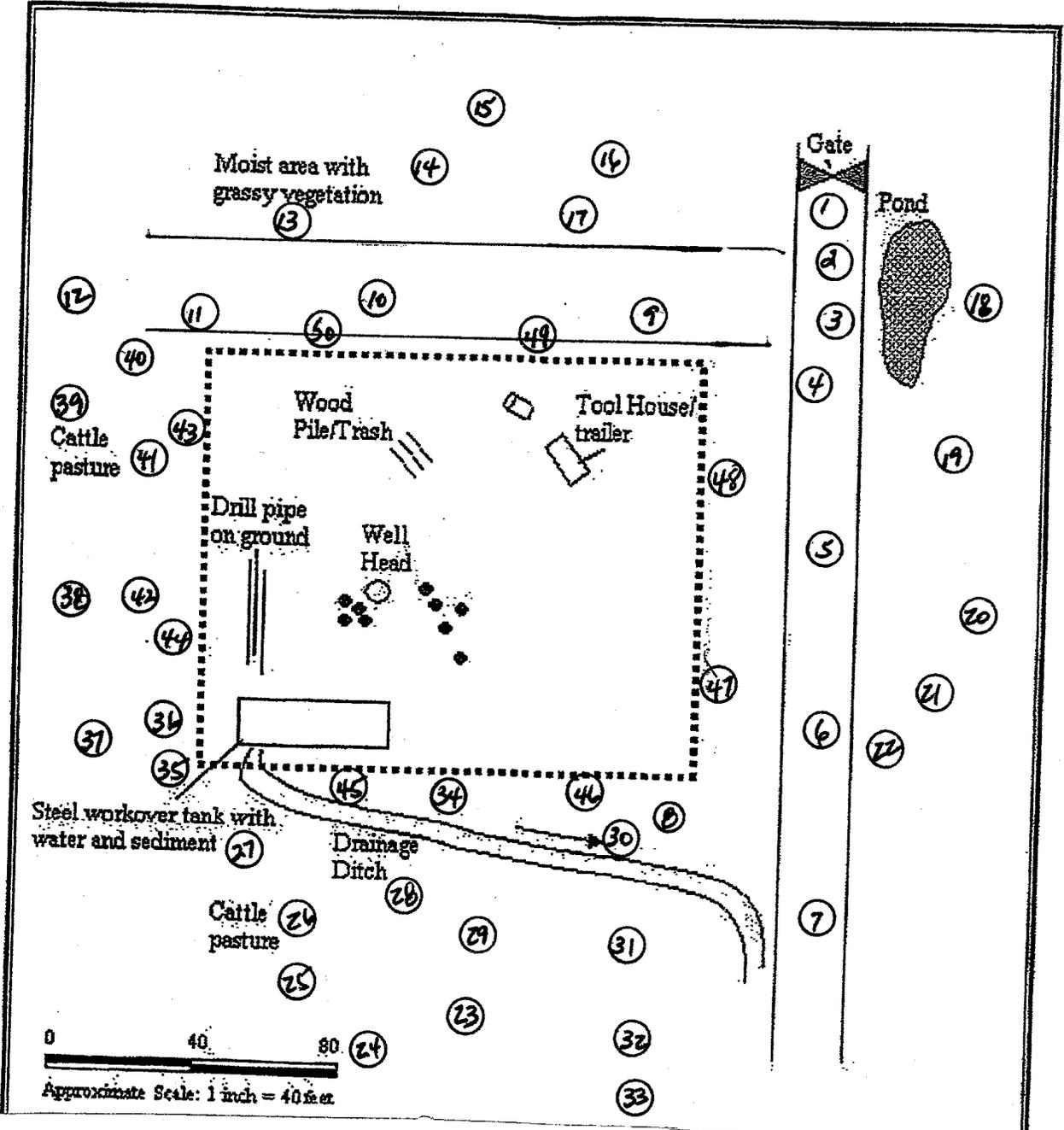


▲ - indicates soil sample locations prior to road being put down.



▲ - indicates soil sample locations at random outside areas

Jack Mueia
M 2350/44-10
S/N 126170/P 2230079
Cal due 5/21/08



Ⓝ indicates direct reading locations

82A8008
Survey Cover Sheet

Survey No. WI-07-0023

SOLUTIONS

by: Jack Mucia
Print

Reviewer: Chris Higgins
Print

[Signature]
Sign

[Signature]
Sign

6/4/2007
Date

6/4/2007
Date

Survey Meters

Direct Frisk		β γ Smear Results		α Smear Results		Dose Rate Results	
Meter Model #	N/A	Meter Model #	N/A	Meter Model #	N/A	Meter Model #	2350w44-10
Meter Serial #	N/A	Meter Serial #	N/A	Meter Serial #	N/A	Meter Serial #	126179-230079
Cal Due	N/A	Cal Due	N/A	Cal Due	N/A	Cal Due	5/8/08-8/16/07
Efficiency (%)	N/A	Efficiency (%)	N/A	Efficiency (%)	N/A	Efficiency (%)	
Type	N/A	Type	N/A	Type	N/A	Type	gamma
Sample Time (min)	N/A	Sample Time (min)	N/A	Sample Time (min)	N/A	Sample Time (min)	NA
Background Time (min)	N/A	Background Time (min)	N/A	Background Time (min)	N/A	Background Time (min)	NA
BKG (cpm)	N/A	BKG (cpm)	N/A	BKG (cpm)	N/A	BKG (cpm)	NA
MDC (dpm/100cm ²)	N/A	MDC (dpm/100cm ²)	N/A	MDC (dpm/100cm ²)	N/A	MDC (dpm/100cm ²)	NA
Guideline (dpm/100cm ²)	NA						
Action Level (dpm/100cm ²)	NA						

page 1 of 2

ATTENTION: Surrounding Area O/S RCA DOSE: Random Locations after Scans	Location	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	CPM
		Beta/G - Direct	Beta/G	Alpha	Dose Rate
SEE ATTACHED SHEET FOR LOCATIONS	1				7966
	2				8771
	3				8277
	4				8787
	5				8008
	6				7491
	7				7245
	8				8483
	9				9364
	10				8848
	11				9557
	12				9095
	13				9390
	14				9485
	15				9299
	16				8690
	17				9305
	18				8242
	19				9567
	20				8979
	21				8780
	22				9789
	23				9093
	24				9049
	25				8797
	26				9293
	27				9358
	28				8753
	29				8864
	30				9784
	31				9314
	32				9218
	33				9311

$$A = \sqrt{\frac{R_b + 3.29 \sqrt{R_b}}{eff}}$$

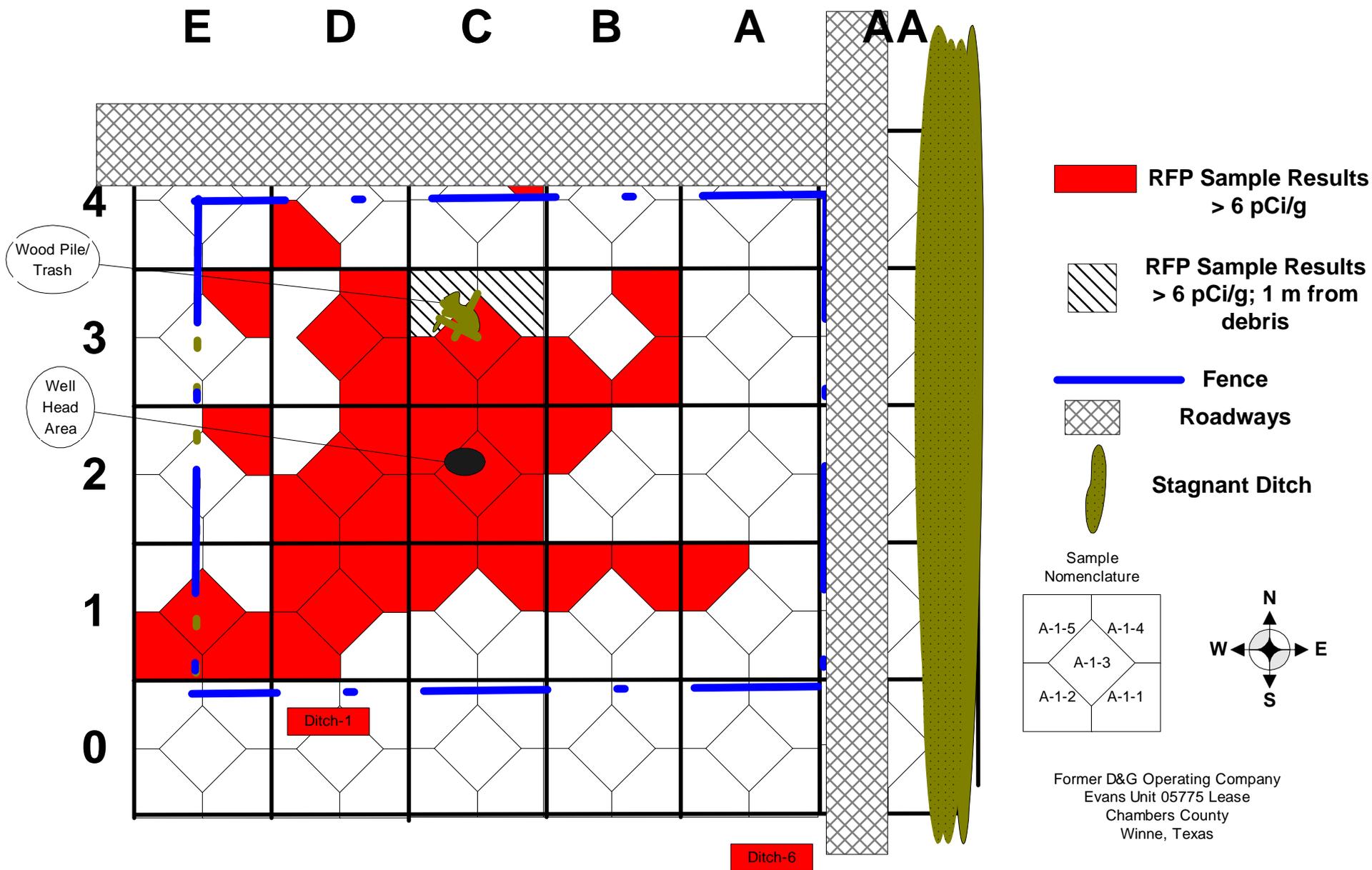
(cpm/100cm²)

$$A = R_b + ((guideline) (eff.))$$

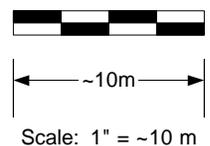
$$dpm / 100cm^2 = \frac{gross\ cpm - bkg\ cpm}{(efficiency)}$$

where:
 Rb = background counting rate
 Tb = background counting time
 Tc = sample count time
 A = actual level

APPENDIX C
SITE RELATED DRAWINGS

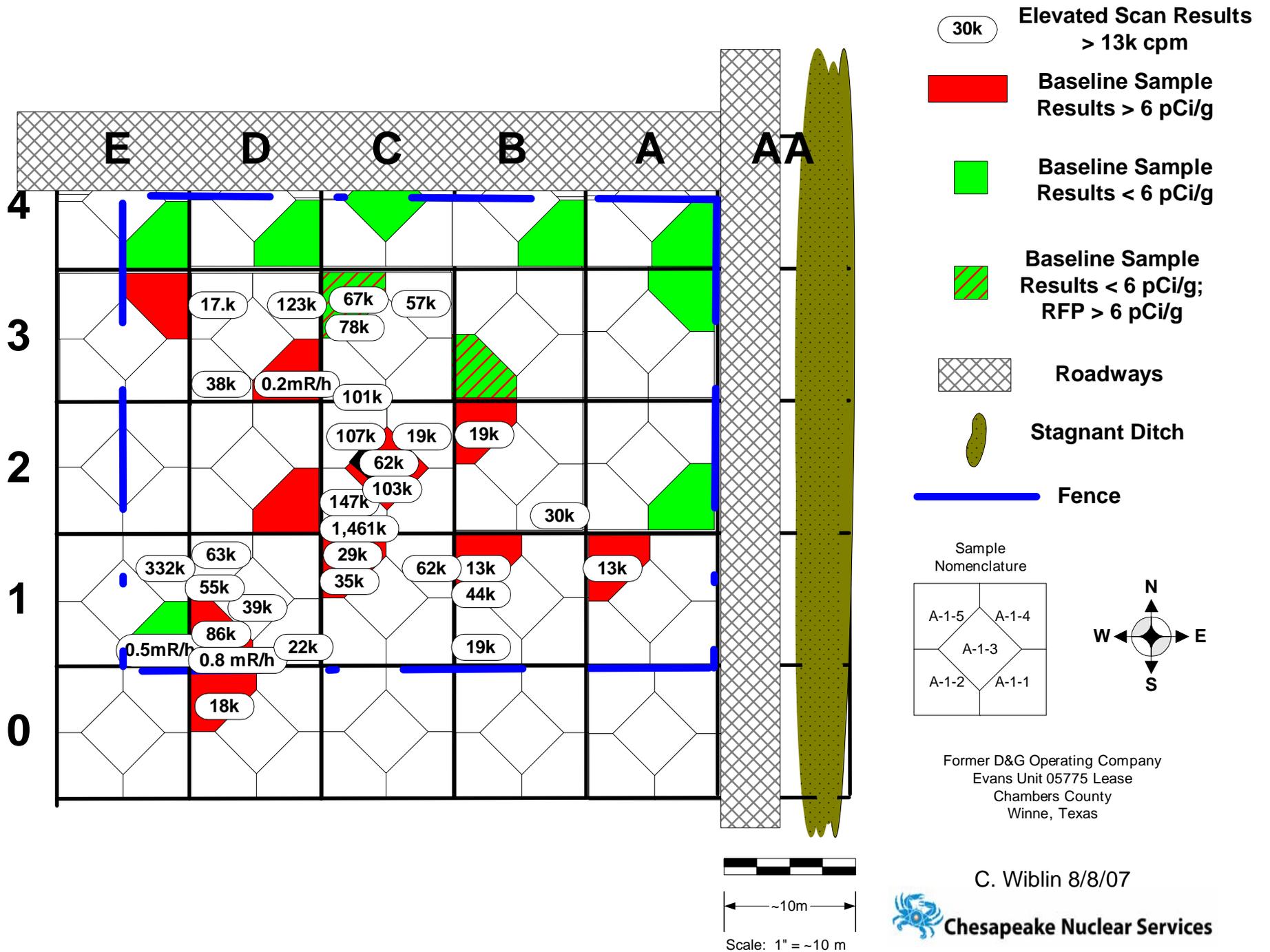


Drawing 1- RFP Sample Results > 6 pCi/g

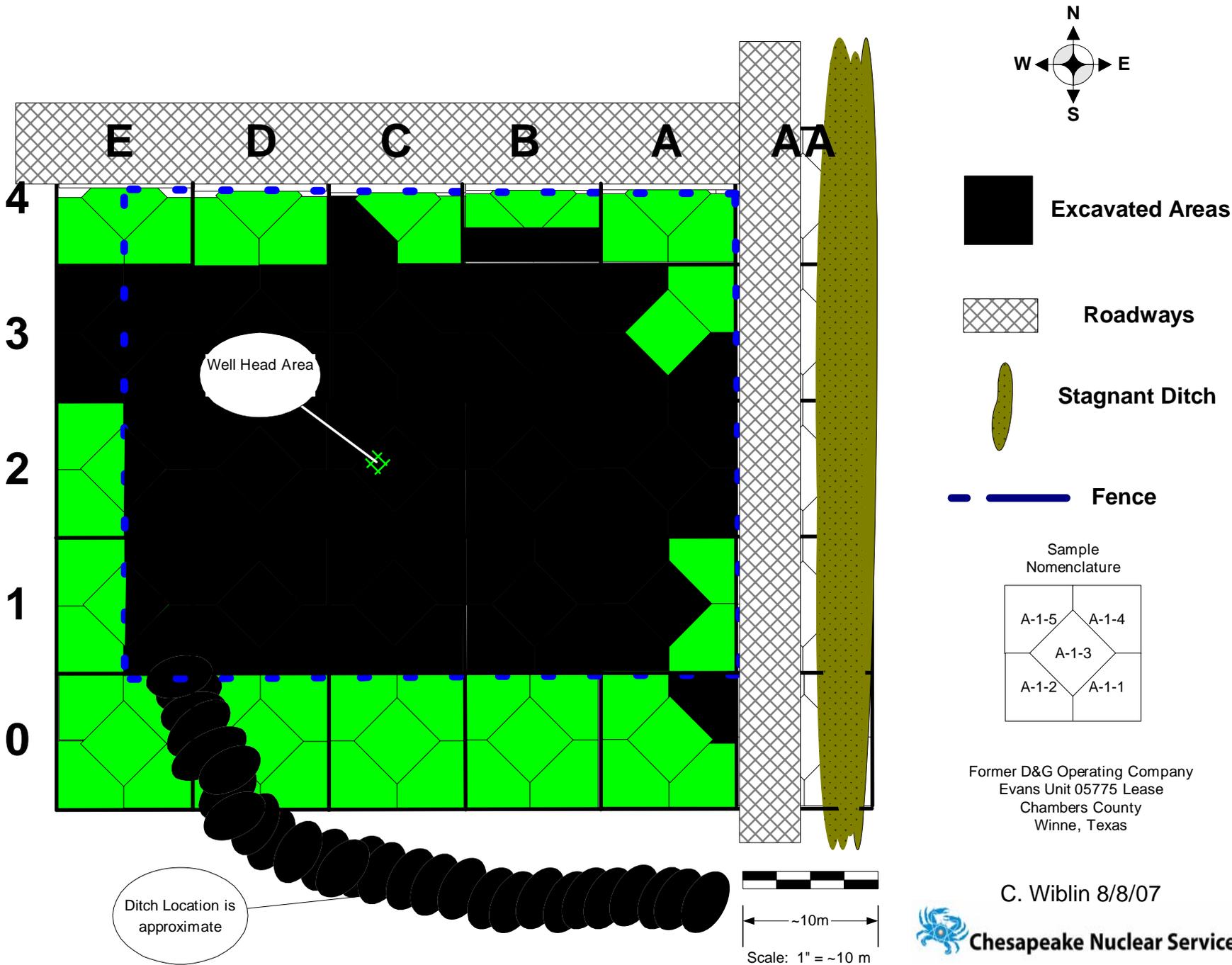


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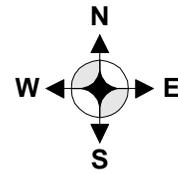
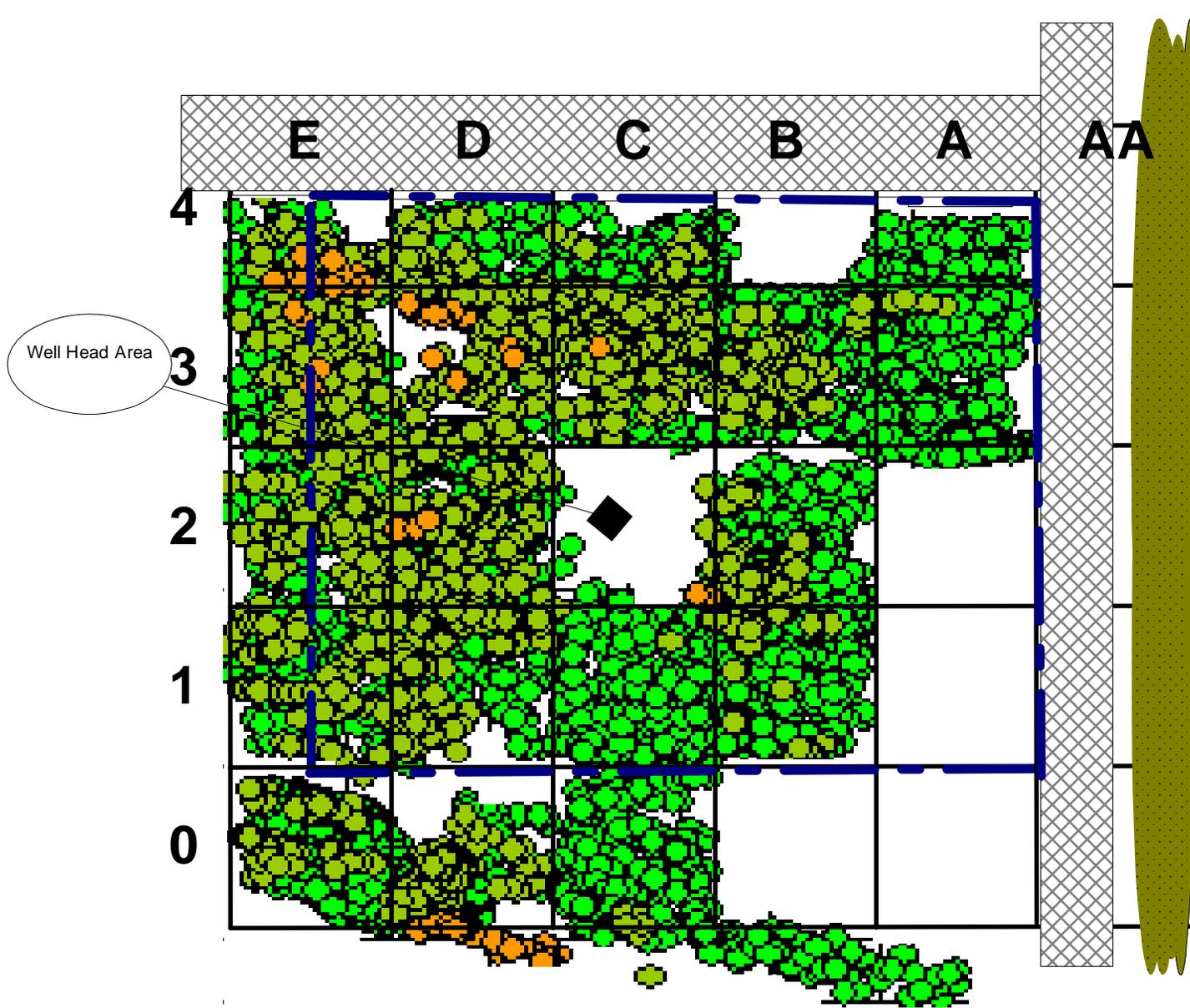
C. Wiblin 8/12/07



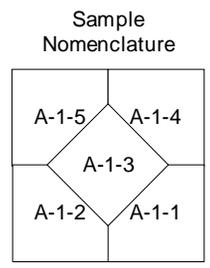
Drawing 2- Baseline Scan and Soil Sample Results



Drawing 3- Excavated Areas

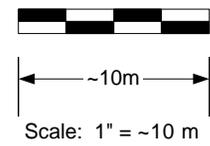


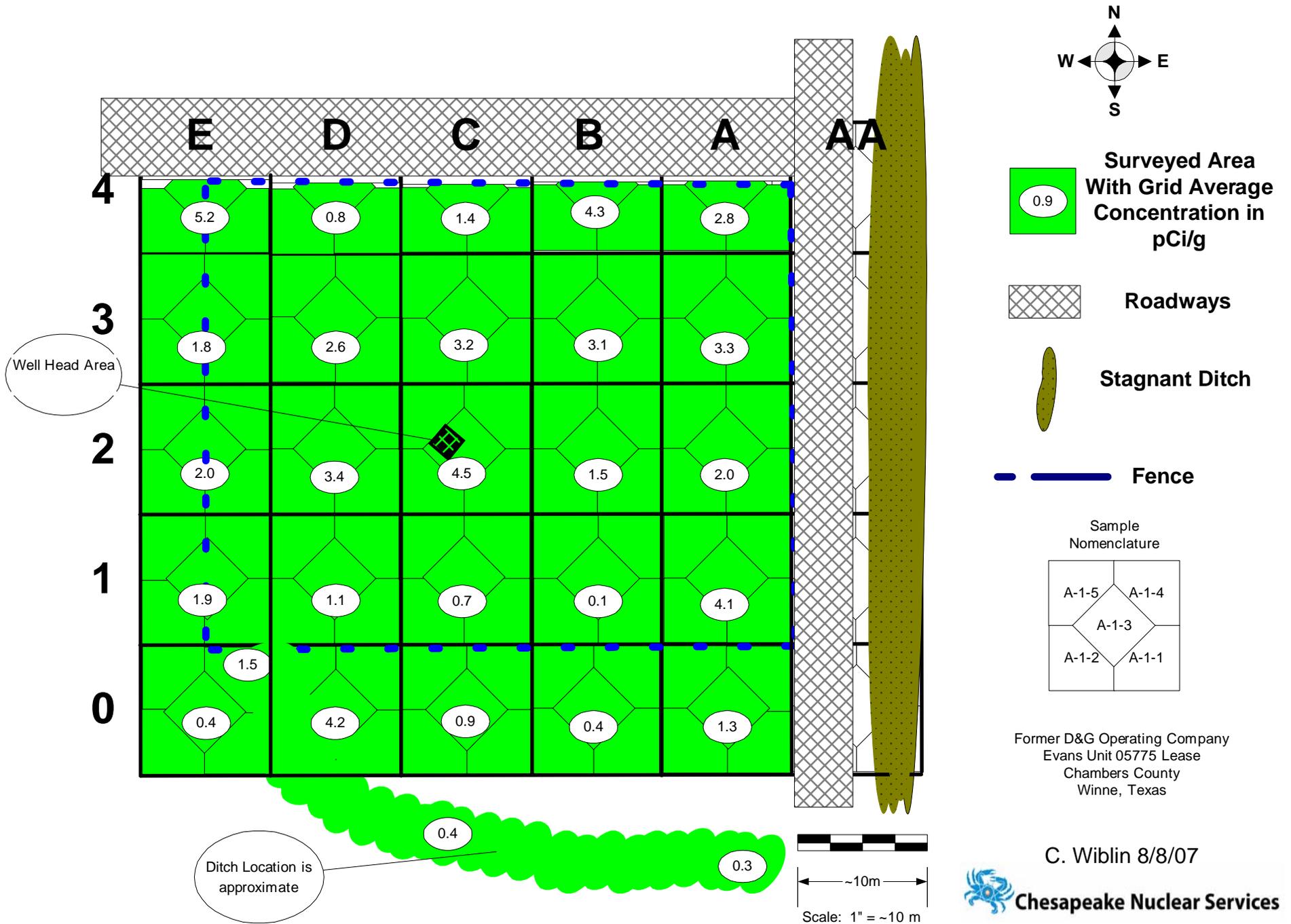
-  **Assisted Scan Locations**
-  **Roadways**
-  **Stagnant Ditch**
-  **Fence**



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Drawing 4- Grid Areas Scanned With GPS





Drawing 5- Final Status of Grid Area and Drainage Ditch

APPENDIX D

Soil Bag Data

Filled Soil Bags

Date Filled	ES Bag #	Collected In Grid/Cells	Weight (lbs)	Conc. (pCi/g)
12-Jul	3	D-1/1,2	8105	90
12-Jul	4	D-1/1,2	8836	2410
13-Jul	5	D-1/1,5	9539	322
13-Jul	6	D-1/1,5	10170	1111
13-Jul	7	D-1/1,2,3	8832	1360
13-Jul	8	D-1/1,3,4	9620	100
13-Jul	9	D-1/1 C1/2,5	9039	200
13-Jul	10	D-1/4 C1/2,4,5	8772	113
13-Jul	11	C-1/2,3,5	8872	61
13-Jul	12	C-1/1,2,3,4	9717	55
13-Jul	13	C-1/1,2,3,4,5	10275	33
14-Jul	14	D-3/4	7796	89
14-Jul	15	D-3/3,4 C-3/2	8712	37
14-Jul	16	C-3/2,3	9543	38
14-Jul	17	C-3/2,3	8743	86
14-Jul	18	D-3/1,3,4	9537	120
14-Jul	19	D-3/1	9631	101
14-Jul	20	D-3/4 C-3/1,3,5	9682	19
14-Jul	21	C-3/1,3,5	10190	22
14-Jul	22	C-3/1,3	*	42
15-Jul	23	E-1/4 E-2/1	7446	15
15-Jul	24	E1-4, E2-1	9500	1
15-Jul	25	D2-2, D1-5	*	201.2
16-Jul	26	D2-2, D1-5	7480	228.6
16-Jul	27	D2-3 + drums**	7520	65.8
16-Jul	28	D2-3, C2-2	10360	37.3
16-Jul	29	C1-4, D2-1	8814	27.2
16-Jul	30	C1-4, C2-2	10226	49.6
21-Jul	31	A1-2	7600	65.4
21-Jul	32	A1-2	8000	32.7
21-Jul	33	A1-5	8400	18.9
21-Jul	34	A2-1,2	8000	106.1

* To be weighed later.

** Considered as 3 yd³ as drums and another bag material were also placed in this bag.

Date Filled	ES Bag #	Collected In Grid/Cells	Weight (lbs)	Conc. (pCi/g)
21-Jul	35	A2-1,2	10500	30.5
21-Jul	36	A2-1,2	9300	4.3
21-Jul	37	A1-2	10400	0.31
21-Jul	38	A1-2,5	8600	0.44
22-Jul	39	A2-1,5	10300	5.29
22-Jul	40	A2-1,5	10400	4.44
22-Jul	41	A2-1,5	10200	7.81
22-Jul	42	A2-1,5	9900	5.15
22-Jul	43	C2-2,3	9900	84.1
22-Jul	44	C2-2,3	8400	204.6
22-Jul	45	C2-2,3	9400	291.1
22-Jul	46	C2-2,3	8000	111.2
24-Jul	47	A3-1	8800	2.3
24-Jul	48	A3-1	9000	1.9
24-Jul	49	A3-1	9300	1.1
24-Jul	50	A3-1,2	9500	0.4
24-Jul	51	A3-2,5	9400	3.6
24-Jul	52	A3-2,5	9100	54.5
24-Jul	53	A3-5	10300	18.6
24-Jul	54	C2-5	9600	65.2
24-Jul	55	C2-5	8700	80.3
24-Jul	56	C2-1,5	9300	55.2
24-Jul	57	C2-3,4,5	9500	254.9
24-Jul	58	C2-4	9900	7.4
24-Jul	59	C2-1,4	9500	3.8
24-Jul	60	C2-4	10400	39.1
24-Jul	61	C2-1,4	10200	28.1
25-Jul	62	C4-1,2 *	8100	1.3
25-Jul	1	C4 drums **	7300	0.8
25-Jul	63	C4-2	8400	2.8
25-Jul	64	C4-2	8700	3.4
25-Jul	65	C4-2	9900	3.4
25-Jul	66	C4-2	9200	1.7

* C4-1,2 were excavated due to hot spots identified by ES scans.

** Considered as 2 yd³ as drums and another

Date Filled	ES Bag #	Collected In Grid/Cells	Weight (lbs)	Conc. (pCi/g)***
26-Jul	67	C3-3,4	9200	23.2
26-Jul	68*	C2-4,5	8300	55.2
26-Jul	69	C3-4	7800	7.3
26-Jul	70	C3-4	8200	15.4
28-Jul	71	B3-4,5	9000	18.2
28-Jul	72	B3-4,5	8100	15.2
28-Jul	73	B3-1,2	9300	38.5
28-Jul	74	B3-1,2	9100	13.2
28-Jul	75	B3-3,4,5	10000	20.0
28-Jul	76	B3-4,5	10500	16.5
28-Jul	77	B1-1	9500	6.2
28-Jul	78	B1-1	8300	93.6
28-Jul	79	B1-1,2	9000	55.1
28-Jul	80	B1-1,2	11600	18.5
28-Jul	81	B1-3,4,5	10800	39.5
28-Jul	82	B1-3,5	12000	26.4
28-Jul	83	B1-3,5	11100	20.0
28-Jul	84	B1-3,5	10300	12.5
28-Jul	85	B1-2,3	9800	21.1
28-Jul	86	B1-4 B2-3	8000	2.1
28-Jul	87	B1-2,3	8800	8.7
28-Jul	88	B1-2,3	9600	18.8
29-Jul	89	B1-4,5 & B2-1,2	8000	11.4
29-Jul	90**	B1-4,5 & B2-1,2	10300	13.3
29-Jul	91	B3-1	7400	14.5
29-Jul	92	B1-1,2,3	9200	22.9
30-Jul	93	B3-3,1	7400	3.8
30-Jul	94	B1-1,2,4	9200	16.3
30-Jul	95	C2-4	8500	8.1
30-Jul	96****	C2-4	8000	11.6
30-Jul	97	C2-3	8500	31.6

* First bag with sediment

** Last bag with inscope sediment.

*** Does not include any contribution by sediment.

**** Bag mixed as in and out of scope

Date Filled	ES Bag #	Collected In Grid/Cells	Weight (lbs)	Conc. (pCi/g) ***
30-Jul	98	C2-1,3	8200	22.1
30-Jul	99	C2-1,3,4	8900	18.2
30-Jul	100*	C2-1,3,4	8400	13.3
30-Jul	101	C2-2,3	8800	26.2
30-Jul	102**	C2-2,3	3900	23.0
31-Jul	103	B1-4,5	8300	3.5
31-Jul	104	B1-4,5	8100	1.3
31-Jul	105	B1-1	9000	1.1
31-Jul	106	B1-1	8400	0.9
31-Jul	107	B2-1	8900	3.9
31-Jul	108	B2-1	8400	21.2
31-Jul	109	B2-1,2	8600	5.5
31-Jul	110	B2-1,2	9200	1.1
31-Jul	111	B1-2	8800	7.6
31-Jul	112	B1-2	9200	5.2
31-Jul	113	B1-2	8700	26.6
31-Jul	114	B1-2	8500	0.7
1-Aug	115	B1-3,5	8600	2.4
1-Aug	116	C1-4	9800	3.9
1-Aug	117	C1-4,5	9200	16.7
1-Aug	118	C1-4,5	9700	14.6
1-Aug	119	C1-4,5	9500	18.6
1-Aug	120	C1-3,5	10000	0.1
1-Aug	121	C1-2,5	10500	4.1
1-Aug	122	C1-1,4	9700	2.0
1-Aug	123	C1-2,4,5	10600	2.1
1-Aug	124	C1-1,3,4	10800	3.8
1-Aug	125	E4-1,2	8200	3.4
1-Aug	126	E4-1,2	8800	14.0
3-Aug	127	E4-1,2,3,4,5	8200	63.3
3-Aug	128	E3-1,3,4	8300	12.5
3-Aug	129	E3-2,3,4,5	9600	18.0
3-Aug	130	E3- 1,4	10300	20.5

* Vol of 3 yd³ due to sediment spill on liner.

** Last of sediment

*** Does not include any contribution by sediment.

Date Filled	ES Bag #	Collected In Grid/Cells	Weight (lbs)	Conc. (pCi/g) ***
3-Aug	131	E3-1,3 & D2-4	9800	52.0
3-Aug	132	E2-1,2,3	9400	41.3
3-Aug	133	D2-3,4	10000	2.2
3-Aug	134	D2-4,5	10200	40.1
3-Aug	135	D2-1,2	9100	2.7
4-Aug	136	D1-2,4,5	11000	
4-Aug	137	D1-3,4	11800	
4-Aug	138	D1-4,5	10100	
4-Aug	139	D1-1,2	11900	
4-Aug	140	D1-1,2	11800	
4-Aug	141	D1-2	8600	
4-Aug	142	D1-2	9800	
4-Aug	143	D1-4	10200	
4-Aug	144	D1-1,2,5	10800	
4-Aug	145	D3-4,5	10400	
4-Aug	146	D3-4,5	10500	
4-Aug	147	D3-1,5	10000	
4-Aug	148	D2-3,4	8600	
4-Aug	149	D2-3,4,5	10900	
5-Aug	150	T654	9800	
5-Aug	151	T654	9200	
5-Aug	152	T32	9200	
5-Aug	153	T12	10400	
5-Aug	154	T12	9400	
5-Aug	155	T12	11000	
5-Aug	156	T0D0	11200	
5-Aug	157	D2-2,3,4	9900	
5-Aug	158	D2-1,2,3 & D1-1,3	10100	
5-Aug	159	D1-1,2	9700	
5-Aug	160*	D2	6400	
5-Aug	161	A0	9500	
TBD	162	D1-1,2,3		
6-Aug	163	E3-2,3	8900	
6-Aug	164	E3-2,3	9100	

* Vol of 3 yd³ due to enclosed polytank.