

PHASE I ENVIRONMENTAL SITE ASSESSMENT

"Wild Boar Project"

Two Undeveloped Tracts Totaling +/- 400 Acres

Northern Portion of NASA Fee Area

NASA - John C. Stennis Space Center, Mississippi 39563

Subcontract No. S-3-M640000181

"Task Order No. 525 - Phase 2"

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Environmental Professional Statement:

I declare that, to the best of my professional knowledge and belief, I meet the definition of an environmental professional as defined in §312.10 of 40 CFR Part 312 and we have the specific qualifications based on education, training, and experience to assess a properties of the nature, history, and setting of the properties. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



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COMMON ACRONYMS

These acronyms are commonly used in Phase I ESA reports:

AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials, now known as ASTM International
AULs	Activity and Use Limitations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CORRACTS	Facilities subject to Corrective Action under RCRA
CREC	Controlled Recognized Environmental Condition
DOD	Department of Defense
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FOIA	U.S. Freedom of Information Act
HREC	Historical Recognized Environmental Condition
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank
MSDS	Material Safety Data Sheet
NFRAP	No Further Remedial Action Planned
NFA	No Further Action
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
PCBs	Polychlorinated biphenyls
PRP	Potentially Responsible Party
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RMP	Risk Management Plan
SQG	Small Quantity Generator
SSTS	Section Seven Tracking System for Toxics/Pesticides
TIER 2	Reporting Required by the Emergency Planning and Community Right-to-Know Act (EPCRA), Section 312
TSDF	Treatment, Storage and Disposal Facility
USGS	United States Geological Survey
UST	Underground Storage Tank

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1.0 EXECUTIVE SUMMARY

Pursuant to the terms and conditions of the Subcontract Agreement No. M640000181 with Syncom Space Services (S3) executed January 20, 2017, Larson Environmental, LLC (LE, LLC) performed a Phase I Environmental Site Assessment (ESA) of two separate and undeveloped tracts of land (subject properties) totaling +/- 400 acres in the northern portion of the NASA Fee Area of the John C. Stennis Space Center (SSC) of Hancock County, Mississippi. The subject properties occupy portions of Sections 29, 31, 32 and 37 of Township 7 South, Range 16 West. Figure 1 - Site Location Map - Appendix A illustrates the location of the NASA SSC within Hancock County, Mississippi. Figure 2 - Detailed Map of Area A and Area B - Appendix A illustrates the locations of the two subject properties within the overall +/- 1,160 acre AOI of the Project Wild Boar. The two subject properties are referred to as:

- **Area A** +/- 250 acre parcel located near the northwestern boundary of the NASA Fee Area that includes a site access road and railroad spurs constructed for and used during the previous operations associated with the **Mississippi Army Ammunition Plant (MSAAP)**, and
- **Area B** +/- 150 acres of undeveloped wooded acreage along the eastern boundary of State Highway 607 and north of Moses Cook Road.

In November 2016, LE, LLC under subcontract no. S3-0006271, completed a wetland delineation of a +/- 1,160 acre area that is inclusive of the two subject properties (Areas A and B) within the northern portion of the NASA Fee area. This wetland delineation was considered to be Phase 1 of the overall "Project Ready" initiative conducted on behalf of S3. Project Ready (i.e. Project Wild Boar) is an effort by NASA, and supported by S3, to assess this overall +/- 1,160 acre AOI for specific candidate tracts of land that would be most suitable for potential future commercial development. Accordingly, the wetlands assessment (Phase 1) was conducted to delineate the areas of this larger Area of Investigation (AOI) within which the U.S. Army Corps of Engineers (USACE) would most likely consider to represent jurisdictional wetlands. The findings of that wetland delineation confirm that approximately 295 acres of the total +/- 1,160 acre AOI contain jurisdictional wetlands. Given those findings, NASA chose Areas A and B from within the overall AOI to conduct additional investigations that included a Phase 1 Cultural Resources Assessment, a Geotechnical Investigation, as well as a Phase I Environmental Site Assessment (ESA). The Phase 1 Cultural Resource Assessment and the Geotechnical Investigation have both been completed and are addressed in separate reports. The subject properties assessed during this Phase 1 ESA are currently undeveloped; however, portions of Area A have been partially developed, or rather, have improvements consisting of an access road and railroad spur infrastructure from the historical operations that took place in association with the MSAAP. Area A is located geomorphically within a pine flatwoods dominated environment in the central and northern portions of the area, with bottom land hardwood habitats along the southern and eastern perimeter. Area B, to the south, has a more consistent elevation range but is also dominated by pine flatwoods and laterally contiguous wetland habitats in the central and southeastern portions of the area.

This portion of the NASA SSC has a rather extensive history dating back to the early 1940's, when the United States War Department reportedly began leasing over 30,000 acres land in the area as a gunnery and bombing range. In 1961, LE, LLC understands that NASA began its planning to develop a national rocket test site in the same general area as the bombing range that included land acquisitions from various timber companies such as International Paper that managed the land for saw log and pulpwood production. These activities reportedly ceased after NASA acquired the subject properties. The 1960's land acquisitions reportedly included over 13,000 acres that were considered the "Fee Area" and included bomb targets partially within the MSAAP boundary. The Stennis Buffer Zone, a permanently recorded land easement, precludes the development of habitable structures within lands immediately surrounding NASA SSC.

In 1978, LE, LLC understands that the US Army secured a lease agreement from NASA to use approximately 7,100 acres of SSC properties to construct and operate MSAAP. The subject properties (Area A and Area B) are located within that originally leased acreage. The MSAAP lease agreement was reportedly a 50-year arrangement that was subsequently amended several times as land and properties were eventually returned to NASA's control.

LE, LLC understands that the U.S. Army selected Mason Technologies Inc. (MTI), formerly Mason Chamberlain Inc., as the contractor operator of MSAAP. The primary mission of the MSAAP was reportedly to manage, test, develop, and manufacture of the M483, a dual-purpose projectile for the 155-millimeter (mm) Howitzer using anti-armor/anti-personnel controlled grenades. MSAAP was reportedly capable of producing 120,000 packaged rounds per month; however, LE, LLC understands that the total amount produced was, on average, approximately 20,000 rounds per month. The construction of the various munitions manufacturing buildings and supporting raw material and chemical storage facilities reportedly began in 1978. The first testing of finished munitions projectiles was in 1984. The MSAAP production facilities consisted of three separate manufacturing complexes: the Projectile Metal Parts (PMPT) area; the Cargo Metal Parts (CMPT) area; and the Load, Assemble, and Pack (LAP) area. These three production complexes were supported by other industrial facilities, including igloo storage areas, an industrial wastewater treatment plant (IWTP), mechanical plant, explosive waste incinerator (EWI), contaminated waste processor (CWP), a landfill, on-site laboratories, and a vehicle maintenance shop.

LE, LLC understands that the "Subject Properties" did not include any of these various munitions production or chemical storage facilities, and that most of these facilities were located within tracts of land considerably removed from the subject properties, or in some instances located on tracts that adjoin the subject properties. LE, LLC is aware that Area A includes a site access road, railroad facilities, and a loading bay area that facilitated the inspection of rail cars and trucks with finished munitions products prior to leaving the MSAAP. The relevance of mentioning this limited history of the MSAAP is the proximity of some of the historical operations at MSAAP to subject properties. Figure 3 - Areas of

Interest Near Subject Properties - Appendix A, illustrates the locations of the former MSAAP facilities and other pertinent features that have historical and/or environmental significance with respect to the subject properties. Figure 4 - Water Well Location Map - depicts the locations of potable water wells currently in existence and historical locations of documented potable wells near the subject property for which the MDEQ has record.

In 1990, the DOD reportedly placed MSAAP on inactive status and began the layaway process for the equipment and facilities. Munitions production reportedly ceased in circa 1991. In the late 1990s, the LAP and projectile mission was discontinued but the grenade production mission was retained. Through a facility use contract, the plant was available to the private sector to provide or produce commercial services and products. By the time the federally mandated Base Realignment and Closure (BRAC) Program (circa 2005) was implemented and the BRAC Report prepared for the MSAAP facility in November 2006, the MSAAP encompassed approximately 4,200 acres of land within the boundaries of SSC and the SSC buffer zone. In January 2006, Applied Geo Technologies, Inc. (AGT) became the MSAAP operating contractor.

In 2011, LE, LLC understands that lands on which the MSAAP operated were returned to the custodianship of NASA and that Baseline Environmental Surveys were completed for the various parcels of land within which the MSAAP maintained chemical and fuel storage areas, raw material storage areas, production and manufacturing areas, land disposal areas, waste water treatment facilities, etc. The Baseline Environmental Survey was reportedly performed in order to document the history of the various environmental assessments of each area within MSAAP, the soil and groundwater remediation and corrective action programs that had been completed, as well as state and federal environmental regulatory oversight and permitting programs that took place for each MSAAP unit. Given the extensive and well documented history of environmental site assessment and remediation programs conducted within MSAAP and NASA SSC since the 1970's, this Phase I ESA does not focus on re-evaluating all of those historical documents specifically or comprehensively. Rather, this ESA will concentrate on Areas A and B (subject properties) and discuss the various MSAAP facilities and infrastructure that were within, or immediately adjacent to the subject properties, and whether the historical activities that occurred in conjunction with those MSAAP facilities, or other features of interest, have potentially affected the environmental condition of the subject properties.

This ESA consisted of research, interviews and physical properties inspections intended to develop an overall understanding of the history of the subject properties, and identify potentially contaminated adjoining tracts that could have affected and/or been a concern to the subject properties. The ESA was conducted with the objective of identifying: (1) potential abandoned hazardous and solid waste sites, (2) active hazardous waste generators, (3) facilities that treat, store, and/or dispose of hazardous wastes, (4) underground and aboveground storage tanks, (5) dry cleaning facilities, and (6) other potential environmental improprieties.

This ESA was conducted in general compliance with the scope and limitations of the standards of the American Society for Testing and Materials (ASTM), *Designation 1527-13 Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process*. Procedures described in this document were used to determine if any recognized environmental conditions, including hazardous waste generators, underground storage tank facilities, and/or other actual or potential environmental improprieties are present on or adjacent to the subject properties.

1.1 DATA FAILURES/GAPS

Based on the information obtained during this ESA, it is the professional opinion of LE, LLC that historical data gaps, as defined in the ASTM guidelines, have occurred in attempting to document the history of the subject properties back to 1952, or the first developed use of the properties.

Common data gaps, as defined by the ASTM standard, include but are not limited to:

- Unknown site usage during certain time periods,
- Inability to conduct visual inspections,
- Inability to interview key site managers, adjoining properties owners, regulatory or local officials, etc, and
- Inability to review data from previous site investigations.

During this ESA, the LE, LLC was able to make visual inspections of the subject properties and most of the adjoining parcels, conduct interviews with various employees of NASA in charge of managing environmental compliance and regulatory matters for the subject properties, as well as previous employees of NASA or the contractors in charge of construction operations or material production processes within the MSAAP. LE, LLC was not able to visually inspect all adjoining parcels due to either security or safety access restrictions, or inaccessibility due to physical barriers. LE, LLC was also unable to interview all of the key site managers that it desired to interview in association with the MSAAP facility, or review all of the data from previous site investigations conducted on parcels of land adjoining the subject property. A discussion as to whether these data failures produced data gaps that effected LE, LLCs ability to make an environmental determination is provided in Section 5.5.

1.2 FINDINGS AND OPINIONS

LE, LLC has performed this Phase I ESA in general conformance with the scope and limitations of ASTM Standard E1527-13 of Area A and Area B within northern portion of the NASA SSC Fee Area located in Hancock County, Mississippi. Any limitations or exceptions to, or deletions from, this practice are described in Section 2.4 of this report. The overall findings and opinions reached by LE, LLC during this assessment include the following:

Aerial Photography

- Based on Historical Aerial Photography from 1952 through 2014, the subject properties appear to have always been undeveloped parcels of land. However, aerial photography from 1976 and 1983 clearly demonstrates that the site access roads, the railroad infrastructure, the block and brace yard and inspection stations for the MSAAP were constructed between that time period. These features are located within or to the east of Area A (refer to Figure 3). Historical aerial photography from 1952 does appear to illustrate signs of surface mining or land clearing and silvicultural practices within various portions of what is now the Fee area, as well as areas just outside the northern portion of the Fee area.
- Aerial photography from 1976 documents an overall lack of development of most of the Fee area, with the exception of the expansion of former logging roads and areas of timber removal in specific areas.
- Historical aerial photography from 1983 and 1985 illustrates what appears to be an extensive ditch construction or drainage improvement project in the lower portion of Area B and into the adjoining property to the east of Area B along Moses Cook Road. The adjoining tract located to the east of Area B on the north side of Moses Cook Road is reportedly the location of Building No. 9115 (former Blount Building) from which construction operations and administrative services directed during the early days of the MSAAP construction program. Sand blasting and painting were also reportedly conducted within this general area. Morgan Chamberlain (later MTI) reportedly used this building as storage facility and electronics repair center for computers and other IT equipment. These photographs also document power line and gas transmission line right-of-way improvements in the same area.
- Aerial photography from the same period, and into 1989, illustrate the greatest land use changes within the former MSAAP and SSC areas. These photographs document the establishment and development of the Area 9100 complex of MSAAP, the Keller Range landfill and the MSAAP landfill to the east of Area B, the development of the Colonel Sawyer landfill to the northeast of Area A, as well as land clearing and reportedly surface mining on property owned by W.C. Fore to the west of Area A.
- Aerial photography from 1994 and 1996 document these same features, as well as the NASA landfill located approximately 0.5 miles to the southwest of Area B.
- Historical aerial photography from 2005 through 2012 illustrate or confirm the existing of these aforementioned features. These more recent photographs also illustrate specific areas within the overall AOI where site clearing, logging or other land management activities have taken place.

City Directories

- City Directories sources do not provide information regarding business or residences within the subject properties. An address search location of intersection of Highway 607 and Moses Cook Road were provided; however, the City Directory sources do not list documented addresses for this area. The Phase 1

Cultural Resources Assessment completed in association with this project confirm the original ownership plat of lands within the subject AOI and properties. These sources confirm that historical homesteads and residences were documented to exist with the overall AOI during the mid to latter part of the 19th century and the early to mid 20th century. These residential structures are no longer in existence.

Topographic Maps

- Historical Topographic Maps from 1959 through 2012 were reviewed for this project. The historical topographic maps from 1959 and 1970 do not provide a real meaningful information other than the relatively undeveloped nature of the overall area during that time period. Historical topographic maps from 1996 and 2012 offer some additional confirmation of the development of the NASA SSC, the expansion of railroads and site access roads, as well as logging roads within the NASA Fee area. The topographic maps confirm the relatively flat land surface gradient in the majority of the two subject properties, with an increase topographic gradient within the southern and eastern portions of Area A near the riparian buffer zone associated with Turtleskin Creek.

Lien Search and Land Records

- The lien search conducted in conjunction with this project confirms the ownership of the title for the lands within which the subject properties exist to be vested with the United States Government. A 2003 "Judgment of Estate Closing" associated with a portion of land with Section 31, Township 7 South, Range 17 West documents legal proceedings for conveyance of administrative authority to a Ms. Chelsea Bond for the estate of the decedent Mr. James A. Bond. Although this property is within the same Section, Township and Range of the subject properties, it appears to be, from the legal description in an area located on the west side of Highway 607 and does not represent real property within Areas A or B.

Historical Environmental Records

- A review of an extensive series of environmental reports for the MSAAP and NASA documenting historical site audits, environmental site investigations and remediation initiatives, regulatory directives and Records of Decision (RODs), permits and other documents included the following: (1) the four part Baseline Environmental Survey of the MSAAP Complex (2011), (2) the Baseline Survey of the NCCIPS Facility (2010), (3) the US Army BRAC-Environmental Condition Report of MSAAP (2006), and various related environmental and regulatory documents at the Mississippi Department of Environmental Quality (MDEQ) in Jackson, MS including Title V Air Construction and Equipment Operating permits, Stormwater and Wastewater NPDES permits, Solid and Hazardous waste permits, UST Assessment and Closure records, Remedial Investigation (RI) reports, as well as soil and groundwater assessment, monitoring

and closure records for Area 9100, the MSAAP landfill, and the Kellar Range. These records reveal the following findings with respect to the subject properties (Area A and Area B).

- 1. Building #9115 (former Blount Building)** - In the Baseline Environmental Survey from 2011, building 9115 was described as a 2,400 square foot metal framed, slab-on-grade structure built in approximately 1983. It apparently served as the construction office for Morgan Chamberlain (later MTI) during the power plant construction, and was subsequently used for the computer and electronics repair services and equipment storage. Building 9115 is considered to be part of the former Area 9100. The Baseline Report and BRAC report state that sandblasting and painting took place somewhere north of the building, but do not specify the location. In 2005, EarthCon Consultants, Inc (EarthCon) reportedly conducted a subsurface investigation on behalf of MTI to determine if past operations at building 9115 had impacted the soil and/or groundwater. No indication was provided in the BRAC or Baseline reports as to what those impacts may have been. LE, LLC was unable to obtain a copy of this report from various sources. The subsurface investigation reportedly included the advancement of subsurface borings and the construction of temporary monitoring wells near the former Blount building. The BRAC and Baseline reports document that EarthCon reported concentrations of chloroform (1 ppb), 1,2,4-trimethylbenzene (35 ppb) and naphthalene (36 ppb) in the groundwater from this investigation. These concentrations are reportedly higher than the MDEQs Tier 1 Target Remediation Goals (TRGs) for groundwater for these specific organic compounds. Other semi-volatile organic and metals concentrations were also reported to have been detected in minor concentrations in the groundwater. The EarthCon report apparently recommended additional sampling to further investigate this area and that an alternate source of potable water be identified for this building. As previously mentioned, a copy of the EarthCon report could not be located during this Phase I ESA. Additionally, no clear or definitive information from other historical sources including former operations and regulatory personnel working with MCI-MTI, NASA or the MDEQ regarding the historical operations at this building and the reasons that would have prompted a more extensive subsurface investigation. Based on inability to review the complete 2005 EarthCon report to glean more definitive information about the potential source of impacts, the assessment methodologies used and the locations of the monitoring wells, as well as the reported concentrations of regulated compounds that exceed the MDEQ's regulatory limits on property that adjoins the subject property (Area B), these documented groundwater impacts would appear to represent a recognized environmental condition (REC) with respect to the subject property at this time.

- 2. Area 9100** - Area 9100, located across Moses Cook Road to the southeast of the subject property (Area B), is a 218 acre complex of buildings and facilities that previously included Cargo Metal Parts and Projectile and Munitions Parts facilities, process cooling towers, industrial wastewater treatment and sanitary waste treatment facilities, fuel and raw material drum storage areas, above grade fuel tank storage, coal stockpile areas in association with the flue gas facility, chemical, fuel and other liquid material storage areas, etc. These facilities all supported the munitions management production at the MSAAP. The BRAC and Baseline Environmental reports document extensive soil, groundwater, surface water and sediment investigations and remedial/corrective action programs that have taken place within this area. The ECP (BRAC) report of 2006 characterizes the whole of Area 9100 as a Category 7 Parcel, which reportedly indicates that it is unevaluated and/or requires further evaluations. A review of the URS SI report (2008) and subsequent reports reveal that the majority of the past fuel and chemical releases and other environmental infractions associated with Area 9100 have been addressed to the satisfaction of the state and/or federal regulatory authorities (MDEQ and the EPA), or are in the process of being monitored or assessed for future decisions. The two historically documented environmental conditions associated with Area 9100 that appear to warrant examination with respect to the subject properties include: (a) a confirmed Trichloroethylene (TCE) plume in the groundwater in between buildings 9101 and 9100, and (b) the documented concentrations of Polynuclear Aromatic Hydrocarbons (PAH's) detected in surface water and sediment samples collected from the drainage ditches along the east and west sides of the Area 9100 complex and within drainage ditches located on north side of Moses Cook Road adjacent to the subject property (Area B). Based on reported information obtained from the BRAC report, the Baseline Environmental Report and subsequent groundwater monitoring reports prepared by URS, the TCE plume in the groundwater on the north side of Building 9101 has been delineated and the source mass area appears to be shrinking in size over time. Based on the MDEQ's concurrence that the TCE plume appears to be stable and not migrating further to the northwest, although groundwater flow is generally toward the direction of Area B, LE, LLC believes that the well documented and monitored TCE plume within Area 9100 constitutes a Controlled REC (CREC), but does not appear to pose an environmental concern with respect to the subject property, at this time.

With respect to the confirmed concentrations of PAHs that have been identified by URS in previous SI reports in the surface water and the sediments of the drainage ditches on the east and west sides of Area 9100, Health and Human Risk and Ecological Risk Assessment were reportedly conducted by URS to determine exposure risks to humans and ecological

communities based on identified chemicals of concern in the groundwater, surface water or sediments within Area 9100 and within the drainage canals. The findings of these risk assessments reported that exceedances of residential screening levels were initially documented; however, further evaluations revealed that the potential risk posed to industrial site workers/trespassers exposed to intermittent intervals of the reported compounds of interest within the groundwater, surface water and sediments was minimal and that no further evaluation with respect to human health risks was required. The report states further that ecological risk evaluations establish that the low frequency of detections of PAH's and other compounds of interest, as well as the attenuation of those concentrations within the surface water and sediments of the canals on the East and West sides of Area 9100 "make the risk to downstream biological communities low", and that no further evaluations with respect to ecological risk to biological communities near Area 9100 is required. Additional sediment and surface water samples collected north of Area 9100 adjacent to, and possibly within the subject property were also evaluated. These concentrations appeared to be considerably lower than the concentrations reported in the canals adjacent to Area 9100, and based on findings of the report and the opinions of the MDEQ, did not appear to reflect a source mass area to the north of Area 9100. The MDEQ reportedly agreed with these observations and the recommendation that no further evaluation of ditch and surface water samples within the drainage canals on the east and west sides of and to the north of Area 9100 warranted additional assessment as long as the land use for this area does not change. Visual inspections of the drainage ditches on the north side of Moses Cook Road did not reveal obvious indications of sediment or surface water impacts. Based on these findings and regulatory opinions, LE, LLC believes that these conditions represent a Historical REC (HREC) with respect to the subject property. Nevertheless, given the past regulatory scrutiny of these investigations, the identified PAH compounds reported in the drainage ditch along the southeastern side of Area B (subject property) do not appear to represent a significant environmental concern for the subject property at this time.

- 3. MSAAP Landfill** - the MSAAP Landfill occupies a 33 acre area approximately 0.5 mile to the east of Area B along Andrew Hancock Road. Information from former MCI contract employees and previous assessment reports revealed that construction began in the late 1970's, and the landfill operated from the early 1980's through 1994 under an MDEQ Solid Waste permit. Waste streams disposed of in the landfill include wood and paper products, wooden pallets, dry sewage sludge, flue gas desulfurization sludge, metal and other non-hazardous waste streams. The landfill had a designed leachate collection system and a monitoring well network for assessment of groundwater quality around the landfill. Groundwater sample collecting from these monitoring

wells reportedly indicated no detections of contaminants above drinking water standards. The various landfill cells were subsequently covered with fill and compacted to appropriate permeability standards, re-vegetated and then subsequently closed. Visual observations of the area during this Phase 1 ESA did not reveal evidence of surface contamination or seeps around the sides of the landfill. Based on this information and site observations, the MSAAP landfill does not appear to be an environmental concern for the subject properties at this time.

- 4. Former Kellar Range** - Information obtained from former MSAAP, AGT and NASA employees and previous assessment reports indicates that the Kellar Range was originally part of the Army's bombing range in the 1950's. It is located within 0.5 miles of the subject property along Andrew Hancock Road. Maps of the former Kellar Range show the boundary actually extending into the east side of the overall +/- 1,160 acre AOI of Project Wild Boar, but does not extend into the subject properties (Areas A and B). Munitions explosion, propellant and pyrotechnic testing was reportedly conducted in this area in the late 1960's and 1970's prior to MSAAP operations. In 1981, these testing activities were reportedly removed to the EMTF. It was reportedly not used by MSAAP as part of their operations. Site investigations consisting of soil and groundwater assessment were reportedly conducted in the 1980's and 1990's. The site is also referred to as Area I and is a CERCLA site. Subsurface groundwater and geophysical investigations were reportedly conducted in this area during the 1990's to characterize the subsurface geology and document groundwater quality in the area. A May 17, 2007 letter from the MDEQ to NASA states that low levels of explosive compounds for which there are no apparent groundwater standards were reported in the groundwater samples collected from monitoring wells within the Kellar Range. The letter also states that there are no apparent risks to ecological receptors in the area and the fencing around the area serves as a sufficient institutional and security control to limit access due to documented areas with unexploded ordinance (UXO). The MDEQ concurred with the No Further Action recommendation for this site. No visual observations of the interior of the Kellar Range were performed due to the site access restrictions. However, based on this information and the distance from the subject properties, the Kellar Range does not appear to represent an environmental concern with respect to the subject properties at this time.
- 5. Building 9138 (former Block and Brace Yard)** - the former Block and Brace facility is located approximately 0.25 miles east of Area A, in the northwestern portion of the Project Wild Boar AOI. It represents a 6,300 square foot loading dock facility where finished munitions products were loaded on to railcars and the materials secured (blocked and braced) in stable arrangements to reduce vibrations that may cause accidental detonation

during transport. There is no record of this area having been used for the storage of fuels or chemicals or any resulting releases in this area from such products. There were no previous assessments reported for this area. Visual inspections of this area did not reveal indications of surface staining, stressed vegetation or other obvious indications of environmental impact. Given these findings, the Block and Brace facility does not appear to represent an environmental condition with respect to the subject property.

6. **Colonel Sawyer Landfill** - this is located in the very northeastern portion of the AOI approximately 0.6 miles northeast of Area A. The site is referred to in the BRAC report as the rubbish landfill and apparently began operating in circa 1980. The land fill reportedly does not have a formal design associated with it (i.e. constructed liner, leachate collection mechanism, etc.); however, the BRAC report documents that it only received construction and demolition debris including concrete, rebar and paving materials associated with the construction of the MSAAP facility. The area was reportedly covered and capped in the mid 1990's. No apparent documentation of disposal records associated with this rubbish landfill unit supposedly exist, but multiple sources all confirm the same general understanding of the history of this feature. Visual observations of this area did not reveal evidence of leaching from the toe of this structure or indications of staining or stressed vegetation. Accordingly, the Colonel Sawyer Landfill does not appear to pose an environmental concern with respect to the subject property at this time.

7. **Railroad Spurs, Control Loading Area and Inspection Station** - These site features, with the exception of the rail car inspection station, are located within Area A in the northern portion of the Wild Boar Project Area. The rail spur facilities are simply the transportation improvements constructed to move raw materials and finished products to or from the MSAAP facility. LE, LLC understands that this area was used primarily as a rail car staging until finished or raw materials that the cars contained could be moved on to other areas of the MSAAP, or shipped off site. Loading Dock or Suspect Car Control Area located in the southern portion of Area A was reportedly built as a safe off loading area for explosive materials that needed to be unloaded in a safe and secure area away from the main MSAAP facility. No incidents are reported to have occurred at this location, nor is there any record of chemical or fuel spills having been stored or released in this area. Finally, the rail car inspection station located just outside the security fence outside of Area A was constructed with a sub grade (lighted) observation trench from which close inspection of the undercarriage of rail cars could be viewed. No history of incidents or hazardous material releases are reported to have occurred in this area of the property. Visual inspections of these areas did not reveal indications of stressed vegetation, soil staining or other indications of gross environmental impact. Accordingly, these features within Area A, and on

parcels adjacent to Area A, do not appear to represent environmental concerns with respect to the subject property.

- 8. NASA Landfill** - the NASA Landfill is identified as a CERCLA site located approximately 0.5 miles to the southwest of the subject property (Area B). It is a solid waste landfill operating under and MDEQ Permit No. SW 02401B-0376 and has been opened reportedly since the 1970's. The landfill receives mostly vegetative and construction debris and other municipal waste streams from NASA facilities. It does not receive hazardous waste streams, but reportedly does have two cells that are permitted to receive asbestos containing materials (ACM). Information from NASA and landfill personnel revealed that the landfill has an approximate 15 to 20 years of capacity remaining before it would have to be closed. A visual inspection of the area surrounding the landfill did not reveal evidence or indications of environmental impact. Based on this information, as well as the distance from the subject properties, LE, LLC does not believe that the NASA Landfill represents an environmental concern with respect to the subject properties at this time.
- 9. Building 9121 (Former Operations Building)** - Building 9121 is located along the southern boundary and immediately adjacent to Area B. It is a small +/12,000 square foot building constructed reportedly in 1989 as a security operations and human resources building during the MSAAP operational period. The building reportedly has no history of chemical or hazardous waste storage and or previously documented releases. Building 9121 is listed as having a small diesel powered generator which apparently has already been inventoried and included with the other minor emission points for the "Minor Sources Air Permit" maintained by NASA. Based on this information, Building 9121 is not considered an environmental concern with respect to the subject property at this time.
- 10. Buildings 8302 (Shorty's Residence) and 9158 (Weaver Yard)** - Shorty's residence is a small (> 900 square foot) building constructed in approximately 1947 (before NASA and MSAAP operations). The Baseline Assessment Report states that two (2) petroleum fuel USTs were installed at this location in 1967 for use by Weaver Construction during the construction of the Rocket Testing Facilities. These two tanks were reportedly removed from the ground; however, the BRAC report indicates that Shorty's was also a gasoline fueling station prior to Weaver assuming operational control of the area. The BRAC report also states that a geophysical survey was conducted in 1991 to determine the location of other tanks in the area. This assessment was reportedly inconclusive regarding the existence or location of additional tanks. Shorty's residence is also in the same general area as the former Weaver Yard (Building 9158).

Land use records for this area of MSAAP include use by a motor pool, heavy equipment repair and refueling and general construction. The Baseline Report indicates that environmental sampling has been completed at Shorty's residence and in the area identified as the Weaver Yard, but there is apparently not a lot of information about the results of confirmatory sampling efforts. Also, according to the 2006 ECP report, there was a fuel spill in the Weaver Yard area by FEMA following Hurricane Katrina, but the spill was reportedly addressed according to former employees of AGT and MTI that LE, LLC interviewed. The 2006 ECP report classifies Area 8302 and the Weaver Yard as Category 2 area, which designates the area as only suspect for petroleum disposal or release. Given the historical information available for these two areas and their general proximity to the Subject Properties, it would be reasonable to conclude that these sites represent RECs with respect to the subject property. However, based on documented corrected actions that did remove the Weaver USTs (potential contamination sources) from these areas, other corrective actions and sampling that have been verified by other sources, information obtained from previous employees and site managers associated with MSAAP, as well as a visual survey of the area that does not indicate evidence of gross soil contamination, stressed vegetation or other indicators of environmental impact, these sites do not appear to represent an environmental concern with respect to the subject properties at this time.

11. Building 9112 (Area Engineer Training Office) - This building was located just to the south of the former Shorty's residence and Building 9158. The building has been removed in circa 2014. It was previously an administrative and training building during the MSAAP operations. a 500 gallon UST that contained heating oil was reportedly located near this building. The tank was reportedly removed in 2000, but no documentation exists to support those activities. The Baseline Report also indicates that one of the two historical gasoline service stations in this immediate area was located on the east side of Building 9112. It was removed apparently in the 1960's, although specific closure documents regarding those activities reportedly do not exist. As with Buildings 8302 and 9158, non-intrusive surveys to locate former fuel tanks were conducted near building 9112; however, the results were inconclusive and buried tanks were never identified. Given the distance of Building 9112 and the historical activities that were conducted near it (over 1,200 feet), and the lack of current activities at this location that would be considered environmentally suspect, LE, LLC does not consider this site to represent an environmental concern with respect to the subject properties at this time.

Interviews

- Personal and telephonic interviews were conducted with variety of individuals that were involved in the historical operations at the former MSAAP, those currently working for S3 or NASA, and with representatives of the state regulatory agencies including the MDEQ that have present and/or historical knowledge of the land use activities with NASA, the former MSAAP facility, and activities conducted on adjoining properties within and outside of the NASA Fee area. A list of those individuals and the context of the respective interviews is included in Appendix F of this Phase I ESA report. These individuals either had specific knowledge of precise land use activities associated with the MSAAP and their respective areas of responsibility within NASA, and/or were simply able to provide LE, LLC with additional information to confirm assessment and corrective action findings presented within the abundance of historical reports generated for this area of Hancock, Mississippi.

Based on the findings of this Phase I ESA, recognized environmental conditions (REC's) have been identified in connection with the subject properties at this time.

1.3 RECOMMENDATIONS

During the review of all the historical sources of information during this Phase I ESA, personal interviews and on-site reconnaissance, LE, LLC did not uncover current or historical environmental conditions "within" the subject properties (Area A and Area B) that would lead to the conclusion that RECs exist on the subject properties. However, based on the numerous site investigations and environmental monitoring programs conducted to characterize the nature and extent of impacts identified on adjoining tracts of land, it appears that potential environmental concerns exist on some of these adjoining tracts that pose a REC, or potential REC, with respect to the subject properties at this time.

The principal REC discovered during this Phase I ESA includes the previously documented groundwater impacts near Building 9115 (former Blount Building). The 2005 investigation from EarthCon recommended additional investigations to determine the extent of impacts and the source. LE, LLC was unable to obtain a full copy of that 2005 EarthCon report to review the assessment methodologies, sample locations, analytical results or the conclusions. An excerpt from that report was reviewed (included in Appendix E) confirms the concentrations of certain volatile organic compounds identified in the groundwater near Building 9115. The URS ECP (BRAC) Report of 2006 classified this site as a Category 6 property that requires further investigation. In as much as these previous recommendations establish the need for future delineation and source assessment of the Building 9115 area, LE, LLC believes that, in the context of determining whether impacts discovered at Building 9115 have potentially influenced the subject property (given the proximity and the lack of understanding of the previous investigation), that a subsurface assessment of the boundary area between the subject property and Building 9115 area should be considered to more conclusively determine whether the subject property has

been impacted by documented impacts from historical activities confirmed by the 2005 investigation at and near former Building 9115.

The identified PAH compounds within the drainage ditch on the north side of Moses Cook Road adjacent to and within the far southeastern portion of Area B (subject property) appear to represent an HREC with respect to the subject property because they are documented findings and regulatory scrutiny of their potential impacts has been completed. However, the previous assessments and regulatory oversight of these documented PAH concentrations within the surface water and sediment appear to be viewed by regulatory authorities as not constituting a reason to conduct further assessments at this time. LE, LLC agrees with this opinion. Nevertheless, in light of the fact that confirmed groundwater impacts have been identified near former Building 9115 (and its proximity to the drainage ditch and Area B), the final consideration as to whether the surface water and sediment impacts in the drainage ditch do not represent an environmental concern for the subject property should be withheld until such time that an additional subsurface investigation can demonstrate that the soil and/or groundwater in the area between the former Building 9115 and Area B (subject property) is completed, and a better understanding of the extent of the identified impact in the groundwater near former Building 9115 can be determined.

Historical land use activities at Shorty's and former Buildings 9158 and 9112 confirms the use of petroleum fuel tanks, site investigations, UST removals and some degree of due diligence to determine subsurface impacts. Their proximity to the subject property makes these areas potential environmentally suspect properties; however, the documented removal of petroleum fuel tanks from this area and degree of scrutiny and apparent effort to determine if petroleum sources still exist at these sites appears to be more extensive than what has taken place at former Building 9115. Accordingly, these tracts to the south of Moses Cook Road constitute more of a *de minimis* condition and do not appear to constitute an environmental concern with respect to the subject properties, at this time.

2.0 Introduction

2.1 PURPOSE

The purpose of this ESA was to identify, according to the scope of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), recognized environmental conditions (RECs) in connection with the properties by reviewing information provided by the user and conducting a records review, site reconnaissance, and interviews as described in ASTM Designation: E1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. Completion of a Phase 1 ESA is intended to enable a potential buyer to satisfy one of the requirements for eligibility of the “innocent landowner defense” with regard to CERCLA liability. Under CERCLA, it is a requirement that “...all appropriate inquiry into the previous ownership and uses of the properties consistent with good commercial or customary practice...,” must be met before a potential buyer can use the innocent landowner defense (as described in 42 USC § 9601 [35] [B]).

A REC is defined by ASTM E1527-13 as “the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.” The term “REC” is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions that are determined to be *de minimis* are not RECs.

A REC may also be qualified as a Historical REC (HREC) or a Controlled REC (CREC) depending on whether corrective measures were implemented as a result of a REC, the extent of corrective measures completed, and whether a regulatory agency was involved in oversight of corrective action.

This assessment also considered whether Historical RECs (HRECs) or Controlled RECs (CRECs) may exist in connection with the Properties. An HREC may exist if a past release of a hazardous substance or petroleum product has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent) or meeting unrestricted use criteria without subjecting the properties to any required controls (e.g., properties use restrictions, activity and use limitations, institutional controls, or engineering controls). A CREC may exist if a past release of a hazardous substance or petroleum product has been addressed to the satisfaction of the applicable regulatory authority and hazardous substances or petroleum products are allowed to remain in place with controls, such as properties use restrictions, activity and use limitations, institutional controls, or engineering controls.

2.2 DETAILED SCOPE OF SERVICES

LE, LLC has been engaged by its client (S3) to identify hazardous substances, petroleum products and/or other environmental conditions that would constitute a REC on the subject properties or parcels of land adjacent to or in close proximity to the subject properties. The scope of services included:

- Records Review - Review of records (environmental databases, local and state records, historical records, etc.),
- Site Reconnaissance - Site visits and inspections of adjoining tracts and other properties within the area,
- Interview - Interviews conducted with the present and/or past properties owners (if feasible), operators and occupants of the subject properties; and with local and/or state government officials; and
- Report Preparation - The evaluation of information and the preparation of the report including the findings, conclusions and recommendations, if any, for additional investigation(s).

This Phase I ESA did not include sampling or testing of air, soil, groundwater, surface water, mold, asbestos, lead based paint or other building materials. These activities would be carried out in a Phase II ESA, if required. This ESA was conducted in general accordance with the requirements as prescribed in the ASTM E 1527-13 Standards (2013).

2.3 SIGNIFICANT ASSUMPTIONS

This report is written for the client (S3), the User of the report. It is intended only for use in reference to the S3's intention to develop an understanding of the environmental history of the subject properties so that it can appropriately inform its customer (NASA) of the findings before making long-term decisions regarding possible site development on the subject properties.

LE, LLC conducted prudent and diligent efforts to identify potential and actual RECs within the subject properties and adjoining parcels utilizing the procedures identified in the ASTM E 1527-13 Standards. LE, LLC verifies that the field inspections performed and photographs taken during the site visits accurately describe the conditions of the subject properties and adjoining properties on intermittent dates during the time period of January 9, 2017 and March 1, 2017. LE, LLC does not warrant that these findings have remained unchanged since the aforementioned dates, and does not warrant or guarantee that the information provided by these sources is accurate or complete.

There is a possibility that even with the proper application of these methodologies that conditions may exist on the subject parcel (or adjoining parcels) that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. LE, LLC believes that the information obtained from the records

review and the interviews concerning the properties is reliable. The methodologies of this assessment are not intended to produce all-inclusive or comprehensive results, but rather to provide the Client with information relating to the subject properties.

2.4 LIMITATIONS AND EXCEPTIONS

LE, LLC has prepared this Phase I ESA using reasonable efforts to identify RECs in connection with the subject properties and adjoining properties. Findings within this report are based on observations made on the dates that site reconnaissance was conducted and a review of reasonably ascertainable information obtained from private data vendors, public agencies, and other referenced sources. The ASTM Practice E1527-13 recognizes inherent limitations for ESAs that apply to this report, including the following:

- Uncertainty Not Eliminated – No ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a property.
- Not Exhaustive – An ESA is not an exhaustive investigation, as it relies on information that is publicly available, obtainable from its original source within reasonable time and cost constraints, and is practically reviewable.
- Past Uses of the Properties – Review of standard historical sources at less than five-year intervals is not required.

Users of this report may refer to E1527-13 for further information regarding these and other inherent limitations.

This report is not definitive and should not be assumed to be a complete or specific definition of all conditions above or below ground surface. Current subsurface conditions may differ from the conditions implied by surface observations or historical sources and can be most reliably evaluated through intrusive techniques that were beyond the scope of this assessment. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation, or other construction purposes. LE, LLC makes no representation or warranty that the past or current operations at the properties are, or have been, in compliance with all applicable federal, state or local laws, regulations and codes. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated. Regardless of the findings stated in this report, LE, LLC is not responsible for consequences or conditions arising from any facts that were not fully disclosed to LE, LLC before or during the assessment.

An independent data research company provided the government agency database referenced in this report. Information on surrounding area properties was requested for approximate minimum search distances and was assumed to be correct and complete unless obviously contradicted by LE, LLC's observations or other credible referenced sources reviewed during the assessment.

Reasonable efforts were made to identify evidence of ASTs, USTs, chemical and/or fuel releases, as well as ancillary equipment on the Properties during the assessment. “Reasonable efforts” were limited to observation of accessible areas, review of referenced public records, and interviews. These methods may not identify subsurface equipment or evidence hidden from view by things such as, but not limited to, paving, construction activities, and stored materials and landscaping. Unless site-specific hydrogeological information indicating groundwater flow direction was provided, the assumption was made that groundwater flow mimics the topography of the land surface.

Acquiring chain-of-title was excluded from the scope of work for this Phase I ESA. LE, LLC is not a professional title insurance or land surveyor firm and makes no guarantee, explicit or implied, that any land title records acquired or reviewed, or any physical descriptions or depictions of the properties in this report represent a comprehensive definition or precise delineation of properties ownership or boundaries. An Environmental Lien Search of the subject properties was completed on January 24, 2017. No environmental liens or activity use limitations for the subject properties were identified.

The opinions provided herein are based on information obtained during the course of the assessment, experience with similar sites and/or conditions, and LE, LLC’s professional judgment at the time services were provided.

The Certification provided herein means this Phase I ESA was conducted or reviewed by an individual employed by LE, LLC that is a state-licensed engineer or geologist, or otherwise has qualifications consistent with the definition of Environmental Professional (EP) in the EPA’s All Appropriate Inquiries (AAI) rule (40 CFR Part 312). LE, LLC understands that according to the AAI rule, that the EP does not necessarily need to be registered in the state where the Properties is located. The scope of work was conducted according to LE, LLC’s subcontract agreement with S3, and the AAI rule with any deviations and limitations stated herein, using the professional judgment of the person conducting the assessment. The Certification is not a warranty or guarantee of the services provided by LE, LLC. Other assumptions, limitations and exceptions that are specific to the scope of this report may be found in corresponding sections.

2.5 SPECIAL TERMS AND CONDITIONS

No special terms or conditions are associated with the data-gathering investigations contributing to this ESA. Common acronyms and abbreviations are however provided in this report.

2.6 USER RELIANCE

This Phase I ESA report is for the use and benefit of, and may only be relied upon by Syncom Space Services (S3). No additional third party may rely on this report without the express written permission of S3 and LE, LLC.

3.0 SITE DESCRIPTION

3.1 LOCATION AND LEGAL DESCRIPTION

The subject properties include tracts of land located with the +/1 1,160 acre AOI of Project Wild Board within the northern portion of the NASA - SSC of Hancock County, MS. The first parcel (Area A) is approximately 250-acres that contains railroad and site access road infrastructure from the historical land use during the MSAAPs active operations. Area B is a smaller 150-acre tract located within the southern portion of the AOI. No site improvements are believed to exist within this area, with the exception of electrical power lines, gas utilities and fiber optic lines. Both tracts are located within Sections 29, 31, 32 and 37 of Township 7 South, Range 16 West. Property appraisal certificates obtained from the Hancock County Chancery Clerk's office include the following:

STATE ID# 089-0-29-001.000

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-----ACREAGE----- *TAX *MTG *REC JUD *EXMPT
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OWNER NAME...: U S A
IN CARE OF...: LAST UPDATED Date:
MAILING ADDR...: BY:
CITY/STATE/ZIP:
PROPERTY STR ADDRESS Name:
Contact: Town:
*BRIEF DESCR: ENTIRE SECTION SEC. 29-7-16
*SUBDIVISION: BLOCK: LOT#: LOT SIZE:
ZONED: DATE BOOK PAGE DATE BOOK PAGE DATE BOOK PAGE
DEED INFO:
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SPCL AMT:
F1-DEEDS
F4-Prompt F5-Upd. F6-Land F7-Bldg F8-H/S F9-Print F10-Del. F11-Sales F12-Exit
F13-Tax Amt F14-Notes F15-Print PRC F16-View Map F17-Prior Val F19-D.T. BLDS
F20-View Images F21-Scan Images F22-Add/Upd 10% Affidavit PageUp/PageDown

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*OWNER CODE...: Ownership Type:
OWNER NAME...: U S A
IN CARE OF...: LAST UPDATED Date:
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SPCL AMT:
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*OWNER CODE...: Ownership Type: Status:
OWNER NAME...: U S A
IN CARE OF...: LAST UPDATED Date:
MAILING ADDR...: BY:
CITY/STATE/ZIP:
PROPERTY STR ADDRESS Name:
Contact: Town:
*BRIEF DESCR: PT. FRAC. SEC. 32 SEC. 32-7-16
*SUBDIVISION: BLOCK: LOT#: LOT SIZE:
ZONED: DATE BOOK PAGE DATE BOOK PAGE DATE BOOK PAGE
DEED INFO:
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SPCL AMT:
F1-DEEDS
*F4=Prompt F5=Upd. F6=Land F7=Bldg F8=H/S F9=Print F10=Del. F11=Sales F12=Exit
F13=Tax Amt F14=Notes F15=Print PRC F16=View Map F17=Prior Val F19=DLT BLDG
F20=View Images F21=Scan Images F22=Add/Upd 10% Affidavit PageUp/PageDown

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The overall properties orientation are generally rectangular and are located within a undeveloped or partially developed areas of the northern Fee Area of the NASA SSC in Hancock County, Mississippi.

Historical aerial photographs documenting the land use changes over the past 60 years are included in Appendix E.

3.2 SITE AND VICINITY GENERAL CHARACTERISTICS

The topographic relief within Area A is predominantly a Pine Flatwoods habitat that is level within the central portions of the property with gradual declines in slope toward the south and east in the direction of Turtleskin Creek. Topographic elevation changes between the central portion of the property and lower portions near Turtleskin Creek are approximately 20-feet. Area B to the south is also a Pine Flatwoods area with more intermittent wetland drainage features interspersed within it. Topographic changes within Area B appear to be less than five (5) feet from north to south. Historical topographic maps confirm the elevations within Area A to range from approximately 32 feet above mean sea level (msl) to approximately 15 feet msl, and a fairly consistent 30-foot to 25-foot contour range within Area B. The subject properties are located in undeveloped Pine Flatwoods habitats within the northern portion of the NASA SSC Fee area in Hancock County, Mississippi. The majority of the area surrounding the properties consists of undeveloped wooded acreage, with the exception of the developed tracts along Moses Cook Road to the south of Area B.

Historical aerial photographs of the area show this section of Hancock County to have been mostly undeveloped in 1952 and 1976 with silvicultural practices being the predominant land use activity during that period. Aerial photographs from 1983 through 1998 appear to reflect the time period of greatest land development within the tracts of land surrounding the subject properties; particular the areas associated with the MSAAP development

3.3 CURRENT USE OF THE PROPERTIES

The subject properties are currently undeveloped, with some development in the form of infrastructure improvements within Area A. These infrastructure improvements represent railroad spurs and site access roads built in this area to support transportation requirements for materials needed in conjunction with munitions manufacturing at the MSAAP. Area B to the south is entirely undeveloped wooded acreage. Photographs of the subject properties and the adjoining parcels of land are included in Appendix B.

3.4 DESCRIPTIONS OF STRUCTURES, ROADS, OTHER IMPROVEMENTS ON THE PROPERTIES (INCLUDING HEATING/COOLING SYSTEM, SEWAGE DISPOSAL, POTABLE WATER SOURCES AND ELECTRICITY)

The subject properties are accessible by the previously described site access road into Area A referred to at NASA reportedly as the Turtleskin Creek Access Road. Area B is accessible by means of Highway 607, by unimproved logging roads, and by Moses Cook Road along the southern property perimeter. Area appears to have previously had electrical power supplied to specific areas within it where infrastructure was previously built, but many of the former power poles appear to have had the electrical operating equipment removed. The Block and Brace Building located on the east side of Turtleskin Creek reportedly had a septic system at one time and a water well for potable water supplies, but this was not observed during the visual inspection of the area. Historical potable water wells are located within and adjacent to the subject properties, but none were specifically located during the field inspections of each area. A water well survey for the subject area was obtained from the MDEQ. A map illustrating these portable water wells is included as Figure 4 in Appendix A. The MDEQ's Office of Geology stated that some of the georeferenced well locations are incorrect due to inaccurate information provide by well drillers, or well locations having to be established by on previous ownership plats before well georeferencing was conducted. The locations provided by MDEQ are those reflected on the Figure 4 map. No other improvements are known to exist within the subject properties.

3.5 CURRENT USES OF THE ADJOINING PROPERTIES

The adjoining properties consist mostly of undeveloped wooded acreage as follows:

- North – undeveloped wooded acreage used primarily for silvicultural practices.
- East – undeveloped wooded acreage.
- South – former MSAAP Area 9100 and the NASA SSC.
- West - Undeveloped wooded acreage, surface mining areas on lands owned by WC Fore immediately on the west of Area A, and the NASA Landfill located on the west side of Highway 607, approximately 0.5 miles to the southwest of Area B.

4.0 USER PROVIDED INFORMATION

4.1 TITLE RECORDS

Acquisition of a specific chain-of-title for the subject properties was "excluded" from the scope of work for this ESA. However, documentation of property ownership was obtained through the Hancock County Chancery Clerks office that establishes ownership of the subject parcels with the United States government.

4.2 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

An environmental questionnaire was submitted by LE, LLC to Ms. Wendy Robinson (S3) and Ms. Jenette Gordon (NASA) (Users of this Phase I ESA report). On March 2, 2017, Ms. Gordon indicated on the questionnaire that she was not aware of any activity use limitations or environmental liens for the subject properties. The ASTM questionnaire is included in Appendix C.

According to the information provided by EDR, no environmental liens or activity use limitations have been filed with respect to the subject properties. A copy of the Environmental Lien Search report is included in Appendix D.

4.3 SPECIALIZED KNOWLEDGE

An environmental questionnaire was submitted by LE, LLC to Ms. Wendy Robinson (S3) and Ms. Jenette Gordon (NASA) (Users of this Phase I ESA report). On March 2, 2017, Ms. Gordon indicated on the questionnaire that she was not aware of any specialized knowledge concerning parcels of land within the subject properties.

4.4 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION

An environmental questionnaire was submitted by LE, LLC to Ms. Wendy Robinson (S3) and Ms. Jenette Gordon (NASA) (Users of this Phase I ESA report). On March 2, 2017, Ms. Gordon indicated on the questionnaire that she was not aware of any commonly known or reasonably ascertainable information relative to the presence or likely presence of recognized environmental conditions in connection with the subject properties (other than well documented environmental assessments that have been prepared and the historical operations that have occurred with respect to the adjoining properties).

4.5 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

An environmental questionnaire was submitted by LE, LLC to Ms. Wendy Robinson (S3) and Ms. Jenette Gordon (NASA) (Users of this Phase I ESA report). On March 2, 2017, Ms. Gordon indicated on the questionnaire that the property is owned by NASA for its use and is not being sold. Therefore, this question is not applicable.

4.6 OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

LE, LLC interviewed various individuals within the NASA and S3 organization during this Phase I ESA process. NASA is the de facto manager of the subject property that is owned by the U.S. Government. LE, LLC also interviewed former employees of AGT, MTI and NASA with management and operational responsibilities associated with the MSAAP facility, and or land use and natural resource assessment responsibilities. The names of those individuals, their responsibilities and the results of those interviews are contained in Section 7.1 and Appendices C and F. Figure 5 - Area Map of Hancock County Tax Parcels - is included in Appendix A.

Current representatives of NASA that were interviewed for historical information regarding the subject properties included Ms. Jenette Gordon - Environmental Manager, Mr. Hugh Carr - Natural Resource Manager and Mr. Adam Murrah - NEPA Manager and Historic Preservation Officer. These individuals provided LE, LLC with various site assessment and corrective action reports that were prepared prior to NASA's resumption of management of lands and facilities previously occupied by MSAAP, as well as general historical information about the subject properties and the adjoining properties. This information included a historical synopsis of overall fee area and buffer zone including information about the US Army's bombing range activities to the east of the Fee Area in the 1940's and 1950's, NASA's land acquisition program in the 1960's and the development of the rocket testing program, lease and property use in conjunction with the MSAAP facility in the 1980' s and 1990's, as well as the present day land use and management responsibilities that they have in the oversight of the various construction, environmental remediation and natural resource planning initiatives. This information, as well as that obtained from previous contract employees at MTI and AGT, the MDEQ and others all corroborate that the subject properties have always been undeveloped parcels of land.

4.7 REASON FOR PERFORMING PHASE I

The reasons for conducting this Phase I ESA 1 were to identify existing or potential Recognized Environmental Conditions (as defined by ASTM Standard E-1527-13) in connection with the subject properties. This Phase I ESA was also performed to permit the user to satisfy one of the requirements to qualify for *the innocent landowner defense, contiguous properties owner, or the bona fide prospective purchaser* limitations of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)(42 U.S.C. 9601) liability (hereinafter, the "*landowner liability protections,*" or "LLPs"). ASTM Standard E-1527-135 constitutes "*all appropriate inquiry* into the previous ownership and uses of the subject properties consistent with good commercial or customary practice" as defined at 42 U.S.C. 9601 (35) (B).

4.8 OTHER

LE, LLC understands that the findings of this Phase I ESA will be used by the S3 and NASA to assist in the long-term planning for potential construction and site development activities within the subject properties.

5.0 RECORDS REVIEW

5.1 STANDARD ENVIRONMENTAL RECORD SOURCES

Standard Federal, State and Tribal environmental record sources were reviewed by acquiring an environmental regulatory agency database report from Environmental Data Resources, Inc. (EDR). The record sources searched and approximate minimum search distances reviewed were consistent with ASTM E1527-13, Section 8.2.1. A copy of the EDR report is included in Appendix D. The environmental regulatory agency database report discussed in this section was provided by EDR on January 18, 2017 (Inquiry Number 4830950.2s). The EDR report was reviewed for information regarding reported releases of hazardous substances and petroleum products on or near the subject properties. Those facilities that were found to be within the ASTM minimum search distances and a potential source of impact to the subject properties are discussed below. The EDR report is included in Appendix C. The following is a summary of the databases reviewed:

Standard Regulatory Database	Approximate Minimum Search Distance
Federal National Priority List (NPL)	1.0 mile
Federal Delisted NPL site list	0.5 mile
Federal CERCLIS list	0.5 mile
Federal CERCLIS NFRAP site list	0.5 mile
Federal RCRA CORRACTS facilities list	1.0 mile
Federal RCRA non- CORRACTS TSD facilities list	0.5 mile
Federal RCRA Small and Large Quantity Generators	Properties & Adjoining
Federal ERNS (Emergency Response Notification List)	Properties
State-equivalent NPL (HSL)	1 mile
State -equivalent CERCLIS (CSCSL)	0.5 mile
State Landfill or Solid Waste Disposal sites	0.5 mile
State Leaking Underground Storage Tanks (LUST)	0.5 mile
State Registered Storage Tanks	Properties & Adjoining
State Institutional Control/Engineering Controls	Properties
State Voluntary Cleanup sites	0.5 mile
State Brownfield sites	0.5 mile
Federal CERCLIS NFRAP site list	0.5 mile
Federal RCRA CORRACTS facilities list	1.0 mile
Federal RCRA non- CORRACTS TSD facilities list	0.5 mile

Additional Regulatory Database	Approximate Minimum Search Distance
Local Brownfield lists	0.5 mile
US Clandestine Drug Lab/Historic Clandestine Drug Lab	Properties
State Priority Cleaners	0.5 mile
Local Hazardous Waste/Contaminated Sites	0.5 mile
Local Land Records	Properties
Emergency Release Reports	Properties
RCRA Non-Generator List	0.25 mile

Criteria used to determine whether a listed facility is considered a REC include the (1) distance from the subject properties, (2) area topography, (3) presumed groundwater flow direction, and/or (4) nature of reported releases and regulatory status.

5.1.1 Federal and State Agency Database Listings

Federal Database Listings

No federal database sites were listed in the EDR report as being within the minimum search distances of the subject properties. This lack of reported information appeared potentially erroneous given the abundant list of state and federally supervised assessment and corrective action programs that took place in conjunction with the former MSAAP facility. Given the fact that this Phase I ESA was focused on properties more to the north and northwest of the previously investigated sites for which more historical information was generated, and the target area for this assessment does not fully extend to cover all of the previously assessed areas, it appears that some of those previously assessed sites may not have been incorporated into the EDR database. However, LE, LLC reviewed numerous assessment and corrective action reports for site investigations and remedial activities that took place in association with MSAAP activities and other environmentally suspect activities in the overall area. Accordingly, LE, LLC utilized "All Appropriate Inquiry" to identify environmentally suspect properties in close proximity to the subject properties.

State Database Listings

State database sites listed in the EDR report as being within the minimum search distances of the subject properties included one State Hazardous Waste Site.

- **Gulf South Pipeline Company (GSPC); SHWS** - GSPC - NASA (00835) is a small natural gas pipeline metering unit located on land outside the Fee area within 1-mile to the northeast Area B. This facility reportedly had a release or a documented finding of mercury contamination in the soil in the immediate area of the meter station. GSPC

reportedly entered into the Voluntary Evaluation and Cleanup Program managed by the MDEQ to address this issue at this and many other metering facilities. Information obtained from the MDEQ reveals that these sites were all addressed and that GSPC received a No Further Action decision from the MDEQ in 2005. Given the distance from the subject properties, and the regulatory closure status associated with it, this site does not appear to represent an environmental condition with respect to the subject properties.

5.1.2 Additional Environmental Record Sources

The EDR Report does not list any other state or federal site records, or records from other regulatory databases within the specified search radius around the subject properties. The report does mention seven "Orphan" sites that appear to be environmentally suspect sites within the NASA-SSC, but located on properties further away from the subject properties, and not on adjoining tracts of land.

LE, LLC reviewed additional environmental and regulatory documents specific to the former MSAAP facilities at the MDEQ in Jackson, Mississippi. These documents included, but were not limited to, the following:

- Permits – NPDES Waste Water Permit for former IWTP (Area 9100), Hazardous Waste operating Permits, Air Construction and Title V Minor source permits, Stormwater and Solid Waste Permits and No Exposure Certifications,
- Hazardous Waste Inspection Compliance Documents (1992 – 2004),
- UST Assessments and Closures, Building 9114 (1992),
- Industrial Wastewater Treatment Plant [IWTP] Closure Report; Area 9100 -(2009),
- MSAAP Final RI Report - URS - (2012),
- Annual Groundwater Monitoring Reports (Area 9100); URS - 2014 and 2015,
- Proposed Plan for Areas 9100/9400 - Munitions Response site; MSAAP - 2013,
- Hazardous, Toxic and Radioactive Waste Feasibility Study; MSAAP 2013, and the
- Final Quality Assurance and Health & Safety Plan - RIFS; MSAAP - 2010

Additional record sources reviewed during this assessment include:

Additional Environmental Record Sources			
Date	Source	Properties	Finding
State Regulatory Sources			
1/31/2017 - 3/1/2017	MDEQ - OPC- Uncontrolled Sites Division (Various Contacts)	Properties and Adjoining Properties	No RECS's on Subject Properties, Possible RECs Adjoining Properties.

SECTION 5.0
RECORDS REVIEW

2/28/2017	MDEQ - Underground Storage Tank Division	UST/LUST Sites within 0.5 miles of Subject Properties	No REC's on sites within 0.5 miles of the Subject Properties.
2/9/2017	MDEQ - Office of Land & Water	Subject and Adjoining Properties	Potable Well Survey within 1.0 mile of the subject properties.
2/21/2017	Mississippi Department of Health	Subject and Adjoining Properties	No RECs for potable water wells or water supply system at NASA-SSC.
2/2/2017	Mississippi Oil and Gas Board	Subject and Adjoining Properties	Closest exploratory oil well to subject properties is 3.5 miles to east.
Former NASA-USACE, MTI and AGT Sources			
2/15/2017	Former MTI Employee (Wayne Gouget)	Subject and Adjoining Properties	No knowledge of RECs on Subject Properties. Aware of Environmental History of Adjoining Tracts
2/17/2017	Former AGT Employee (Terry Stevenson)	Subject and Adjoining Properties	No knowledge of RECs on Subject Properties. Aware of Environmental History of Adjoining Tracts
2/2/2017	Former MTI Employee (Sheila Davis)	Subject and Adjoining Properties	No knowledge of RECs on Subject Properties. Aware of Environmental History of Adjoining Tracts (i.e. Flue Gas and Desulfurization Plant Operations)
1/24/2017	Former Forrester - USACE Employee at NASA-SSC (Craig Case)	Subject and Adjoining Properties	No knowledge of RECs on Subject Properties. Aware of Natural Resource and Environmental History of area.
Current Employees Within NASA SSC and Others			
2/23/2017	NASA Water Supply Department	Water Supply System with NASA-SSC	No water quality issues with current water supply system or wells.
2/16/2017	NASA-SSC Fire Department	Subject and Adjoining Properties	No knowledge of chemical spills on or near subject properties. Aware of fire in NE Portion of AOI in 11/2016.
2/22/2017	NASA Landfill (2 Individuals)	NASA Landfill Area	No knowledge of RECs associated with

			landfill or subject properties.
1/26/2017	Hancock County Tax Assessors Office	Subject Properties	Land records for subject properties.
2/23/2017	Mississippi Power	Subject Properties	No REC's on Subject Properties - No PCB issues with transformers near subject properties.

5.2 PHYSICAL SETTING SOURCES

USGS 7.5-Minute Topographic Map Review

Based on a review of the USGS 7.5-Minute Topographic Quadrangle Map series for Dead Tiger Creek and Northwest Nicholson, Mississippi dated 1959, 1970, 1994 and 2012, the subject properties are located within Pine Flatwoods environments on shallow terraces just above the Pearl River drainage basin with elevations ranging from approximately 15 feet to 33 feet msl. The USGS topographic maps illustrate that the Area B in the southern portion of the AOI as being generally flat throughout the majority of the area, and Area A in the north having a larger range of topographic relief from the central portion of the site to the riparian buffer area along Turtleskin Creek to the south and east. The historical topographic maps and aerial photography information are included in Appendix E.

Geology/Hydrogeology

According to Geologic Map of Mississippi, 1969 (reprinted 1985), the subject properties is mapped within the Coastal Plain Alluvium Deposits and the Citronelle formation. This Coastal Plain Alluvium is identified as a layered/sectional sedimentary unit that has been deposited by fluvial and near shore historical marine transitional sequences. The Coastal Alluvium generally consists of varying sizes of siliclastic sands, clays and gravels in relatively thick (50-feet to 200-feet) intervals across the gulf coast. Deeper horizons typically transition into sand and gravel zones of the Catahoula, Hattiesburg, Pascagoula, Graham Ferry and Citronelle aquifers that yield potable water supplies for many areas within Hancock County, Mississippi. The shallow units of the Coastal Alluvium are typically Holocene in age (i.e. recently deposited). The Citronelle formation is slightly older (Pliocene in age) and is derived chiefly from non-marine drift deposits found along the seaward margin of the Gulf Coastal Plain Alluvium. The Citronelle consists primarily of fine to coarse grained sands and gravels in varying thickness through region. It is also used as a drinking water source for some of the wells within the NASA SSC, as well as for much of the Mississippi coastal counties.

Soils

Information in the EDR report, which is based on the U.S. Department of Agriculture Soil Conservation Service SSURGO data, as well as information presented by LE, LLC in the

December 2016 Wetland Delineation report of the overall +/- 1,160 acre AOI, there are 16 mapped soil units within the AOI. Seven of those soil units comprise approximately 90% of the total acreage within the overall AOI. Within Areas A and B (Subject Properties), the principal soil units include the Atmore (At) Silt Loam, the Escambia (EsA) loam, the Harleston (HIB) fine sandy Loam (2 to 5% slopes), and the Poarch (PoB) fine sandy loam (2 to 5% slopes). The Atmore and Escambia units are classified as somewhat poorly drained soils while the Harleston and Poarch are classified as moderately well drained to well soils. The Atmore and Escambia units make up the over one-third of the area within the overall +/- 1,160 acre AOI, and would appear to be the predominant soil units in Areas A and B. A detailed explanation of the site soils is provided in the Wetland Delineation report of the overall AOI (LE, LLC - December 2016).

Hydrology

All of the surface area within the subject properties is unpaved, with the exception of the site access road included in Area A. Both properties are generally level with Area A displaying gradual slopes toward Turtleskin Creek and the ephemeral drains that feed it. The main features within Area A that control water movement are Turtleskin Creek and the ephemeral streams and drainage features that feed into the creek, as well as topographic fluctuations that feed depressional areas within the elevated pine flat woods. The majority of the areas where the more pronounced hydrology exists are within the low depressional areas and the ephemeral streams. Within Area B, more wetland acreage appears to exist and very gradual lateral changes occur between Pine Flatwoods habitats to hard wood drainage sloughs where very slight topographic declines exist. In this areas, wet soil conditions exist closer to the ground surface.

Groundwater flow direction is uncertain; however, it is assumed that shallow groundwater will mimic local topographic conditions and drain toward the larger streams and ephemeral features. Estimated groundwater levels and/or flow directions may vary due to seasonal fluctuations in precipitation, local usage demands, geology, underground structures, or dewatering operations, none of which were considered for this assessment.

The physical setting of the subject properties was interpreted with the aid of various information sources. These sources include the *Soil Survey of Hancock County, Mississippi* (Nichols, et. al 1983), the *USDA Web Soil Survey, Mississippi Army Ammunition Plant Integrated Natural Resource Management Plan* (USACE [Case, et al] 1998), *The Baseline Environmental Survey of MSAAP Facilities* (A2R Research, JV 2012), *Environmental Condition of Property [BRAC] Report* (URS 2006), *Sources for Water Supplies in Mississippi* (Wasson 1986) and the *State of Mississippi Groundwater Quality Assessment* (MDEQ 2011), historical aerial photography from the EDR Environmental Data Resources (1952 through 2014; selected years), the USGS topographic quadrangle maps (1959, 1970, 1994 and 2012), City Directory data from Cole's City Directories, Real Estate Appraisal Files from the Hancock County Tax Assessors Office, as well as field observations made by LE, LLC during various site inspections conducted between January 9, 2017 and March 1, 2017.

According to the *Soil Survey of Hancock County, Mississippi*, the county is generally made up of three overall physiographic divisions: the Low Level Terraces and Flood Plains, the Gulf Coast Flatwoods and the higher lying Coastal Plain Uplands. The subject properties are located principally within the Coast Flatwoods province.

The subject properties are located within a currently established FEMA 100-year floodplain. Revised FEMA maps (FIRM 2009) show portions of Area A as having minor portions of the property within zones designated as 1% Chance of Annual Flood Hazard. These portions of Area B are primarily within the riparian buffer along Turtleskin Creek. Area B does not appear to have portions of the property designated as being in the 1% Chance of Annual Flooding.

5.3 HISTORICAL USE INFORMATION OF SUBJECT PROPERTIES

Historical aerial photography; USGS topographic quadrangle maps, published subsurface groundwater and hydrological information obtained from the MDEQ's Office of Land and Water Inc., tax parcel information obtained from the Hancock County Tax Assessor's Office, previous environmental site assessment reports associated with the MSAAP facilities, a Phase 1 Cultural Resource Assessment Report of the subject properties (2017), and a Natural Resource Management report (1998) for the area were reviewed during this assessment (Appendix E). These sources of information, as well as interviews with former employees working in conjunction with the MSAAP facility, indicated that the subject properties have always been used undeveloped tracts of land, with the exception of the improvements made within the confines of Area A in the early 1980's. Historical homesteads and residences have been documented within and near the subject parcels dating back to the late 19th Century, however, none of these previous homesteads are in existence. This assessment did not reveal visual indications of the disposal of hazardous substances/wastes or solid wastes on the subject properties.

5.4 HISTORICAL USE INFORMATION ON ADJOINING PROPERTIES

The same reference materials used in the preceding section (Section 5.3; also, see Appendix E) were consulted for historic use on adjoining properties. Well documented property use of parcels or land primarily to the south and east of the subject properties (MSAAP) have been well documented. The MSAAP acreage has been returned to the custodianship of NASA. The identified environmental concerns on the adjoining properties are well documented.

5.5 DATA FAILURE

The following table identifies the data failure related to the historical use sources reviewed for this Phase I ESA and summarizes whether the data failure represents a "significant" data gap with respect to the subject properties:

Additional Environmental Record Sources		
Interval	Comment	Data Gap Evaluation
2017	Inability to access all adjoining parcels due to security access restrictions.	Access is restricted to Kellar Range due to due to historical activities and documented UXO. Visual observations were made from outside the gate. Historical records provided a sufficient understanding of the potential health and safety risks of the Kellar range. Accordingly, this data discrepancy does not constitute a significant data gap.
2017	Inability to interview all of the key site managers associated with the MSAAP during time frame of this Phase I ESA.	LE, LLC was not able to interview Mr. Larry Herwick and other potentially key site managers involved with operations and production associated with MSAAP. However, a sufficient number of interviews with other managers and employees involved with MSAAP with a sufficient understanding of MSAAP were interviewed such that this data gap does not preclude LE, LLC from developing and environmental opinion of the subject property.
2005	The inability to review the Environmental Baseline Report Prepared by EarthCon Consultants (2005) regarding the subsurface investigation near Building 9115 of MSAAP.	LE, LLC was able to review an <u>excerpt</u> from this report, but not the full report. The lack of information about the extent of potential impacts near Building 9115 (a tract that adjoins the subject property - Area B), the proximity of these potential impacts, and the recommendation in the 2005 report that additional assessment is needed. <u>LE, LLC believes this represents a data gap that affects LE, LLCs ability to make an environmental opinion of the subject properties, specifically Area B.</u>

During the course of this Phase I ESA, LE, LLC reviewed an extensive amount of information regarding the development history of the subject properties and surrounding area, as well as reports of environmental studies and remediation directives that were performed near the subject properties. Although, LE, LLC was not able to access specific tracts of land on adjoining properties or, given the extensive history of the MSAAP, not able to interview all of the previous employees of contractors that worked within the MSAAP that LE, LLC desired to interview, LE, LLC was still able access all the subject properties and enough of the adjoining tracts to provide a sufficient physical environmental perspective of the subject properties. Additionally, LE, LLC believes that a fairly comprehensive understanding of the overall history of MSAAP and the subject properties was achieved with the number of individuals that it interviewed personally and/or telephonically. Accordingly, the inability to interview all of the former employees that we would have liked to interview does not represent a significant data gap.

The only significant data gap that LE, LLC encountered was the inability to review the EarthCon's Baseline Report (2005) for Building 9115, on a tract of land immediately to the east/southeast of Area B. As discussed in Section 1.0, the inability to review the 2005 EarthCon report to gather more specific details regarding the "potential source of impacts", the locations of the monitoring wells and the assessment methodologies used, as well as the reported concentrations of regulated compounds that exceed the MDEQ's regulatory limits on the adjoining property (Area B), these documented groundwater impacts would appear to represent a recognized environmental condition (REC) with respect to the subject property at this time.

6.0 SITE RECONNAISSANCE

6.1 METHODOLOGY AND LIMITING CONDITIONS

LE, LLC conducted pedestrian and vehicular inspections of subject properties, accessible areas of adjoining parcels, and other properties of potential concern in the immediate area of the subject properties on various dates during the time period of January 9, 2017 and March 1, 2017. All of the adjoining tracts were accessible during the site inspections with the exception of the Kellar Range site. No other limiting conditions were encountered during the site inspections.

6.2 GENERAL SITE SETTING

Site inspections and reconnaissance revealed that general site setting was consistent with, and relatively unchanged from, the most recent aerial photographic coverage of the subject properties. These aerial photographs were reviewed before and during the site inspections conducted between January 9, 2017 and March 1, 2017. The subject properties are undeveloped tracts of Pine Flatwoods acreage located within the northern portion of the NASA SSC Fee area. Portions of Area A have improvements that include a site access road, rail spur facilities and electrical power supply infrastructure from the time period of the MSAAP operations. The adjoining tracts to the south and east are undeveloped parcels formerly part of the MSAAP, but now under NASA's management.

6.3 EXTERIOR OBSERVATIONS

The following subsections summarize the interior and exterior observations that could be related to environmental conditions on the subject properties or adjoining parcels.

- **Hazardous Substances and Petroleum Products Use/Storage** - LE, LLC did not observe hazardous substances or petroleum products stored within the subject properties. A covered petroleum fueling terminal in Area 9100 was observed, but interior inspections for hazardous substances of buildings within Area 9100 was not conducted. Small quantities of paints and other related products were observed in a secured maintenance area on the west side of the former AGT Building (Area 9100).
- **Storage Tanks** - LE, LLC did not observe storage tanks for petroleum products, water or other benign liquids on the subject properties.
- **Odors** - No unusual or suspicious odors were detected on the subject properties or the adjoining properties during the site inspections.
- **Pools of Liquid** - LE, LLC did not observe pools of liquid likely to contain hazardous substances or petroleum products on the subject properties or the adjoining properties.

- **Drums/Containers** - LE, LLC did not observe 55-gallon drums or similar types of containers within the subject property. .
- **Unidentified Substance Containers** - LE, LLC did not observe unidentified substance containers within the subject properties.
- **Polychlorinated Biphenyls (PCBs)** - LE, LLC observed pole-mounted electrical transformers primarily within the power line rights-of-way in the southern part of Area B. The transformers and observed electrical equipment appeared to be intact and evidence of leakage of oil was not observed. Information obtained from Mississippi Power revealed that there have been no reported issues with these transformers and PCB testing was negative.
- **Pits, Ponds or Lagoons** - LE, LLC did not observe pits, ponds or lagoons on the subject properties or the adjoining properties. A sub grade rail car inspection pit is located just outside the fenced area on the west side of Area B. This pit was reportedly used for railcar undercarriage inspections only, and not for draining or storing oils, lubricants or other petroleum products.
- **Exterior Stained Soil or Pavement/Interior Stains or Corrosion** - LE, LLC did not observe exterior stained soils within the subject properties. No gross indications of stained soils or obvious indications of environmental impact from corrosion were noted on the adjoining properties.
- **Stressed Vegetation** - LE, LLC did not observe obvious areas of stressed vegetation within the subject properties. A cleared area on the adjoining property to the east of Area B (Kellar Road) where sand blasting and painting were historically conducted was noted; however, small herbaceous species and pine saplings appear to be re-establishing themselves in the area. No obvious visual indications of soil impacts were noted in this specific location along Kellar Road.
- **Solid Waste Generation** -Municipal solid waste generated from the various NASA building complexes is reportedly collected by Waste Management Services. Some municipal trash, as well as construction and demolition debris from on-site construction activities is disposed in NASA landfill located on site.
- **Waste Water Generation** - No waste water generation exists for the subject properties as they are undeveloped. The NASA complexes have their own waste water treatment facility located approximately one mile south of Area B and is covered under its NPDES Waste Water Permit No. 0040797.

- **Stormwater Management System** -Stormwater appears to drain toward Turtleskin Creek in Area A, and in Area B, generally by overland flow that drains into a canal/ditch system along Moses Cook Road. These water bodies flow into other unnamed tributaries to the west of the NASA facility and into the Southern Branch of the Pearl River. Stormwater discharges at NASA are regulated through its NPDES Baseline General Stormwater permit.
- **Wells** - Information contained with the MDEQ, Office of Land and Water and EDR report the locations of various potable water wells that are located within 1-mile of the subject properties. A well survey map included in Appendix A illustrates their locations. According to the MDEQ's Office of Land and Water, some of these locations are not correctly mapped as historical georeference information was not provided. These locations were mapped generally within the Sections, Township and Range provided by the well drillers. The two principal wells that provide water supplies to NASA facilities are (ESE 1984, and USA EHA 1988a). These are permitted wells by the MDEQ and identified as wells 9123 and 9124. Information obtained from Mississippi Department of Health did not report current drinking water quality violations with respect to these wells or the drinking water system at NASA.
- **Septic Systems** - Septic systems for former MSAAP facilities such as the Block and Brace Yard (East of Area A) and the Former Blount Building (Building No. 9115) to the east of Areas B reportedly existed but are no longer in use. No other septic systems are believed to exist within the overall AOI or the subject properties.
- **Drains and Sumps** - directed storm water drainage ditches associated with the site access road and railroad spurs were observed within Area A, and small culverts and drains within a mapped wetland in the southern portion of Area B. However, no subsurface sumps, french drains or other such drainage features were identified within the interior of the subject properties.

6.4 INTERIOR PROPERTY OBSERVATIONS

The two subject properties are approximately 250 acres and 150 acres, respectively. Both areas are predominantly undeveloped wooded acreage consisting mostly of Pine Flatwoods habitat with mixed areas of bottom land hardwoods with mapped wetlands and ephemeral drainage features. Evidence of a former residence with a flowing well was identified on an adjoining parcel to Area B during the previous wetlands assessment conducted in 2016. However, LE, LLC understands that this well has been capped. Area A contains improvements consisting of site access roads and rail spurs, but Area B remains entirely undeveloped.

7.0 INTERVIEWS

The objective of interviews is to obtain information indicating recognized environmental conditions in connection with the subject properties. A list of the individuals interviewed during this ESA is included in Appendix F.

7.1 INTERVIEW WITH CURRENT PROPERTIES OWNER AND LESSEE

NASA SSC is the current property manager/custodian of the subject properties. S3 is the prime support contractor to NASA in charge of managing various environmental and construction programs on behalf of NASA. Personal interviews were conducted with various members of these respective environmental departments. These current NASA personnel include Mr. Hugh Carr - Natural Resources Manager, Ms. Jenette Gordon - Environmental Specialist and Mr. Adam Murrah - NEPA Manager and Historic Preservation Officer. Ms. Wendy Robinson - Environmental Specialist (S3) was also interviewed during this assessment process.

Mr. Carr was the principal point of contact during this assessment for historical and environmental questions about the subject properties. Mr. Carr provided LE, LLC with historical environmental reports for the former MSAAP site including the 2006 Environmental Conditions Report (BRAC) Report, and the four part Baseline Environmental Assessment Report (2011). He was also instrumental in providing LE, LLC with an overall review of the historical operations that took place within NASA, including operations at the MSAAP facility. Mr. Carr was also able to direct LE, LLC to former employees associated with the MSAAP facility to obtain answers to more specific environmental and historical questions about MSAAP. Ms. Jenette Gordon and Mr. Adam Murrah were also instrumental in providing answers to specific questions regarding the sequence of historical environmental studies associated with the MSAAP facility, as well as the findings of past cultural resource and natural resource studies that have taken place within the overall NASA fee area. These individuals reported that they were aware of the general history of operations associated with the MSAAP property and much of the environmental investigations that had taken place in conjunction with MSAAP operations; however, they had no specific recollection of any potential chemical or petroleum fuel spills, hazardous waste concerns or any other environmental issues associated with subject properties (i.e. Area A and Area B). Ms. Wendy Robinson of S3 was able to provide LE, LLC with information regarding water wells within the facility, as well as an excerpt from the Baseline Environmental Assessment Report prepared by EarthCon (2005) that documented subsurface investigation activities near the former Blount Building (9115).

7.2 INTERVIEW WITH SITE MANAGERS

The representatives of NASA described in Section 7.1 also represent the site managers with respect to the subject properties. Other "current members" of NASA and/or associated

agencies that manage properties or facilities within the SSC or have general understanding of the history of the subject properties also include the following individuals.

LE, LLC interviewed Mr. Eddie Renz, the site operations manager of the NASA Landfill, on February 22, 2017. The NASA landfill is reportedly a CERCLA site located within approximately 0.5 miles to the southwest of Area B. Mr. Renz indicated the landfill was constructed in the 1970's and receives primarily construction and demolition debris and some municipal garbage from areas of the SSC, and does so pursuant to its Solid Waste Permit No. SW02401B-0376. He also stated that the landfill receives and disposes of Asbestos Containing Materials (ACM) in two of the cells specifically permitted for those waste streams. According to Mr. Renz, the landfill has approximately 14 to 18 years of life use expectancy based on the current rate of cell use and closure and that no current violations exist with respect to the landfill. Mr. Renz stated that he has never seen any environmentally suspect activities being conducted on the subject properties (Areas A and B) such as oil or trash dumping, fuel or chemical spills, or mismanagement of household wastes. Mr. Paul Thigpen, the Administrative Director for the landfill, deferred LE, LLC to Mr. Renz for specific operational details of the landfill, but reiterated Mr. Renz's comments regarding the lack of current regulatory compliance violations with respect to the landfill

LE, LLC interviewed Captain Henry Hooks of the NASA SSC Fire Department on February 16, 2017. Captain Hooks indicated that he has been the fire chief at SSC for the past two to three years and that he is not aware of any environmentally suspect activities being conducted on the subject properties (Areas A and B) such as fuel spills or chemical spills, uncontrolled trash dumping, etc. He did not have a full knowledge of all the historical operations associated with the MSAAP plant, but he was aware of the fire that impacted approximately 200-acres of land in the northeastern portion of the overall +/- 1,160 acre in November 2016.

LE, LLC interviewed Mr. Keith Brock, the water system supply manager for the NASA SSC on February 23, 2017. Mr. Brock deferred LE, LLC to other staff members with more specific information regarding water quality data and regulatory compliance information for the water supply system at the SSC. He did inform LE, LLC that he was not aware of any regulatory compliance violations currently pending against the SSC for water quality violations and believed that the water wells and water supply system had recently passed Mississippi Department of Health inspections.

LE, interviewed Mr. Russell Cameron of the NASA Engineering Department on January 10, 2017 during utility location operations associated with geotechnical investigations within the subject properties. Mr. Cameron assisted LE, LLC, and its subcontractor, in the identification of buried utilities in the general area of the subject properties prior to commencing geotechnical work in the area. Mr. Cameron stated that he was aware of the historical activities generally associated with MSAAP, but was not aware of any specific environmental issues such as fuel or chemical spills, uncontrolled dumping, or other inappropriate land use or management operations with these two specific tracts of land.

Previous employees of contractors that worked in direct association with the MSAAP or with NASA during the time period that MSAAP operations were in progress included the following individuals:

LE, LLC interviewed Mr. Terry Stevenson, the Base Transition Coordinator and Production Manager for AGT during the construction of the MSAAP facility and the production operations that took place. On February 17, 2017, Mr. Stevenson stated that initially, he was the cost and schedule control systems manager during the construction and start up phase of MSAAP during the late 1970's and early 1980's. He indicated that there were a couple of year where he departed this position temporarily, but returned to oversee production system operations with a new manager, and subsequently was involved in the lay-away process of production equipment during the 1990's. Mr. Stevenson indicated that he was very familiar with the overall operations of the MSAAP as they related to environmental site investigations and corrective actions associated with fuel and small chemical spills, engineering reconfiguration assessments with the IWTP, management of the coal desulfurization and coal stockpile management operations, the MSAAP Landfill and the Kellar Range. In this regard, Mr. Stevenson was able to corroborate most of the information that LE, LLC had reviewed in association with those investigations and corrective action programs. Mr. Stevenson was however unable to comment on the specifics of the 2005 EarthCon investigation at Building 9115 (former Blount Building). He stated that he was not aware this area being used for fuel or chemical storage, but does vaguely recall their being a "need" for an investigation in this area, but could not recall the specifics of that need. Mr. Stevenson went on to state that he was aware of the historical activities generally associated with MSAAP that would have caused any specific environmental infractions on the subject properties (Area A and B) including any mismanagement of produced munitions that may have temporally been stored within the rail spur or suspect control loading docks within Area A, or the Block and Brace yard to the east of Area A

On February 15, 2017, LE, LLC interviewed Mr. Wayne Gouget, the former chemical and environmental control supervisor with MTI and AGT during the munitions production operations of the MSAAP from the early 1980's through approximately 2006. Mr. Gouget indicated that his job included, among other activities, the management and oversight of waste disposal processes of spent materials associated with production operations at the MSAAP, including industrial waste processing operations associated with the IWTP and the landfills. Mr. Gouget provide LE, LLC with specific answers to historical operation questions regarding the soil and groundwater assessments and compliance information regarding the MSAAP Landfill and the Kellar Range, as well as the history and development of the Colonel Sawyer Landfill. Mr. Gouget also provided LE, LLC with historical information about the munitions storage igloos in area 9600, the facilities close to Area A (i.e. Block and Brace Yard, the railroad spur and suspect control loading docks, as well as the railroad inspection station), and the general history of the Area 9100 complex included soil and groundwater investigations that occurred in this area. As in the case of Mr. Stevenson, Mr. Gouget was not familiar with, or specifically recall why the environmental investigation took pace with respect to the former Blount Building (No. 9115). He did recall that EarthCon Consultants

performed a subsurface investigation at Building 9115 in 2015, but indicated that he had no recollection of the rationale behind it. He did not recall the building being used for the storage of fuel or chemicals specifically, but does recall some vehicle and equipment maintenance being performed near the building at one point. He did also recall that sandblasting and painting were conducted just north of Building 9115 (near Kellar Road) from time to time, but did not recall any fuel spills or chemical releases in that area of the MSAAP. Mr. Gouget also stated that he had fairly good understanding of all the historical activities associated with the various MSAAP facilities, but was not aware of anything that that would have potentially caused a environmental problem specifically on the subject properties (Area A and B).

LE, LLC interviewed Ms. Shiela Davis, a former laborer working with MTI during the early days of operations at MSAAP. Ms. Davis stated that she worked initially as a laborer in the coal stockpile management at the former steam plant performing various hands on tasks with material management, equipment upkeep and quality control. She later was more involved with production and labor scheduling and eventually worked up to a management position of work and process control with the power plant. Ms. Davis stated that she was generically familiar with historical operations throughout the MSAAP facility, and in particular Area 9100. However, she did not have specific knowledge about the data generated from past environmental compliance investigation or subsurface RI investigations around Area 9100, but did have a basic understanding of the history and sequence of those investigations. Ms. Davis informed LE, LLC that in spite of all the historical knowledge that she had regarding the historical operations at the MSAAP facility, she was not aware of anything that that would have potentially caused suspect environmental situations specifically within the subject properties (Area A and B).

LE, LLC interviewed Mr. Craig Davis, the former forester and Natural Resources Field Manager at NASA SSC on January 24, 2017. Mr. Davis provided LE, LLC with a historic overview of the development of the former bombing range, the original land acquisition activities by NASA in the 1960's, as well as the operations surrounding the MSAAP and the re-integration process of that acreage back to NASA. Mr. Case also provided LE, LLC with Natural Resource Management Plan that he authored in 1998 that described the various natural resources included within the NASA fee area, the forestry management practices that had historically taken place in the overall +/- 1,160 acre AOI, and other details concerning the Colonel Sawyer Landfill and development and shut down of the MSAAP facilities. Mr. Case corroborated information receive from Mr. Stevenson and Mr. Gouget regarding the subsurface groundwater investigations associated with the MSAAP Landfill, the Kellar Range and the Colonel Sawyer Landfill. To the best of his knowledge, Mr. Case stated that the only material that entered the Colonel Sawyer Landfill was construction debris associate with the development and construction of the power plant at MSAAP. He was not aware of anything potentially hazardous or environmentally suspect having been placed within this disposal unit. He went on to state that he was unaware of anything that would have potentially caused suspect environmental situations specifically within the subject properties (Area A and B).

7.3 INTERVIEWS WITH OCCUPANTS

The subject properties are currently unoccupied. Interviews with owners and site managers will sufficiently document interviews with occupants.

7.4 INTERVIEWS WITH LOCAL AND GOVERNMENT OFFICIALS

Mr. William Moody of the Bureau of Water Supply with the Mississippi Department of Health was contacted to obtain information regarding public water supplies for the NASA SSC on February 21, 2017. Mr. Moody stated that historical water quality violations cited within the Department's information web portal for the NASA SSC were actually the results of data duplication efforts that occurred several years ago that produced "false positive" responses to data input categories for water supply records that they are required to maintain. He stated that this issue was corrected and that NASA was provided a letter to this effect. Mr. Moody went on to inform LE, LLC that the lab data for bacterial, radiological and chemical analyses for water supply wells that serve the NASA SSC are currently in compliance with the state's water quality requirements. He also added that the NASA SSC received perfect passing marks for water quality grades (5/5) in all of the categories for which public water supply systems are graded over the past 4 years. These data are maintained in the publication for the State of Mississippi Bureau of Public Works; Public Water Systems Capacity and Development Program, Annual Report 2016.

Mr. Ron Tarbutton, Regulatory Specialist, Mississippi Oil and Gas Board, provided information to LE, LLC regarding historical oil and gas exploration activities within the general area of the NASA SSC on February 16, 2017. Mr. Tarbutton indicated that the MS Oil and Gas Board has one record of an oil and gas exploratory well attempted within 4 miles of the subject properties in the Fee area. This was an old Mobile Corporation well drilled in 1980 on Bombing Range Road near Texas Flat Road, approximately 3.5 miles east of the subject properties. It was also plugged and abandoned the same year. No other record of drilling permits for well site within this area of the NASA SSC are on file with the Oil and Gas Board.

Mr. Robert Huckaby, of the MDEQ's Office of Pollution Control (Groundwater Assessment and Remediation Division) was interviewed personally on January 31, 2017 and February 9, 2017. Mr. Huckaby provided LE, LLC with some regulatory perspective regarding the historical groundwater assessment and related RI activities associated with Area 9100, including the status of the monitored TCE plume underneath the former AGT building, the history behind the sediment and surface water sampling conducted in drainage canals on the east and west sides of Area 9100, as well as the MSAAP Landfill and Kellar Range. He indicated the TCE groundwater plume underneath Buildings 9100 and 9101 appeared to be delineated and stable, and that evidence of source mass reduction was taking place. He also provided his opinion of the sediment and surface water sampling that had been performed in the drainage canals on the east and west sides of Area 9100 as well as in the

ditches to the north of the area near the subject property. He stated that those PAH detections in the ditches did not constitute a regulatory concern at this time due to the diminishing frequency and concentration of PAH compounds north of Area 9100. He was able to provide LE, LLC with regulatory NFA letter regarding the Kellar Range and indicated the past groundwater monitoring efforts associated with the MSAAP landfill were apparently successful in documenting satisfactory groundwater quality results for that facility. He did not have a copy of the EarthCon report from 2005 and therefore was not able to comment on the regulatory or environmental significance of that report.

Ms. Sandra Dowty, of the MDEQ's UST Division was interviewed by telephone on February 21, 2017. Ms. Dowty provided regulatory compliance information for existing and former UST and LUST sites within the NASA SSC. Most of the documented registration and or closure notifications were for sites considerably removed from the subject properties such as the NEX Mini Mart Gas Station or the Shared Services Building. No specific UST information was available for the Shorty's Bar area or the buildings located near that location. However, previous BRAC and Baseline reports document the locations and corrective actions associated with UST systems in those areas.

Mr. Thomas Wallace of the MDEQ's Uncontrolled Sites Division was contacted to gather information regarding the state hazardous waste site (SHWS) located within one mile to the northeast of Area A. This site is listed in the EDR data base report as being SHWS include a gas pipeline meter station owned and operated currently by the Gulf South Pipeline Company (GSPC). Mr. Wallace provided LE, LLC with an updated Uncontrolled Sites List that the MDEQ maintains. Regulatory compliance information shows this site as having had mercury concerns in the soil (along with various other GSPC sites), and that these issues were subsequently addressed to the satisfaction of the MDEQ. This specific GSPC site is currently in regulatory compliance with the MDEQ. Given the distances of this site from the subject properties, the current regulatory status as being in compliance, this site does not constitute a REC with respect to the subject properties at this time. Mr. Wallace was not aware of any other potential SHWS in the immediate area of the subject properties.

Mr. Warren Hudson of the MDEQ's Uncontrolled Sites Division (Municipal and Private Facilities Branch) was contacted to gather information regarding waste water permits for NASA and previous ones for MSAAP. Mr. Warren was not aware or had direct knowledge of former WW permits associated with the MSAAP facilities, but stated that NASA was in general compliance with its current WW-NPDES Permit No. 0040797 as of January 2017. He was not aware of any other environmental or regulatory issues currently at NASA.

Ms Krystal Rudolph of the MDEQ's Uncontrolled Sites Division (Air Permitting Branch) was contacted on February 9, 2017 to gather information regarding Air Quality Permits for the NASA SSC facility. Ms. Rudolph was not particularly aware of previous Air Quality permits associated with MSAAP, but informed LE, LLC that NASA currently has a Title V Small Source permit (1000-000554) associated with diesel fired back-up electrical power generators at various buildings within the NASA SSC. NASA is currently in compliance with this permit.

Ms. Pat Phillips of the MDEQ's Office of Land and Water was interviewed on February 14, 2017 to obtain information regarding existing and abandoned potable water wells within the NASA SSC and close to the subject properties. Ms. Phillips provided LE, LLC with geo-referenced coordinates of wells for which the MDEQ has record. She did emphasize that some of these locations were not precisely where the wells were drilled due to incomplete information previously provided by the well drilling contractors, but they are within the same Sections, Township and Ranges. To the best of her knowledge, Ms. Phillips informed LE, LLC that she is not aware of any environmental issues regarding the potable wells located near the subject properties within the NASA SSC.

7.5 INTERVIEWS WITH OTHERS

Mr. Patrick Chubb, Environmental Specialist with Mississippi Power was contacted by Email on February 24, 2017. Mr. Chubb stated that MPC provides bulk power supply to the NASA SSC transmission substation but not any distribution service. He indicated that there have been sites containing transformers with known PCB issues historically, but most of these are over 0.5 miles away for the subject properties. He added that analytical testing for PCB containing materials was negative for electrical power equipment operating near the subject properties.

8.0 FINDINGS

LE, LLC has performed this Phase I ESA in general conformance with the scope and limitations of ASTM Standard E 1527-13 of the subject properties [Area A and Area B] located within the northern portion of the NASA SSC in Hancock County, Mississippi. Any limitations or exceptions to, or deletions from, this practice are described in Section 2.4 of this report. The overall findings and opinions reached by LE, LLC during this assessment were specifically outlined in Section 1.0, including the physical findings as they pertain to historical aerial photography and topographic maps, city directory searches, lien search and land information as well as interviews. Accordingly, Section 8.0 will reiterate the details documented in the "Historical Environmental Records" portion of Section 1.0, with specific emphasis on the physical features identified on adjoining properties that were found to represent RECs with respect to the subject properties. These findings include the following:

Building #9115 (former Blount Building) - In the Baseline Environmental Survey from 2011, building 9115 was described as a 2,400 square foot metal framed, slab-on-grade structure built in approximately 1983. It apparently served as the construction office for Morgan Chamberlain (later MTI) during the power plant construction, and was subsequently used for the computer and electronics repair services and equipment storage. Building 9115 is considered to be part of the former Area 9100. The Baseline Report and BRAC report state that sandblasting and painting took place somewhere north of the building, but do not specify the location. In 2005, EarthCon Consultants, Inc (EarthCon) reportedly conducted a subsurface investigation on behalf of MTI to determine if past operations at building 9115 had impacted the soil and/or groundwater. No indication was provided in the BRAC or Baseline Reports as to what those impacts may have been. LE, LLC was unable to obtain a copy of this report from various sources. The subsurface investigation reportedly included the advancement of subsurface borings and the construction of temporary monitoring wells near the former Blount building. The BRAC and Baseline Reports document that EarthCon reported concentrations of chloroform (1 ppb) 1,2-4 trimethylbenzene (35 ppb) and naphthalene (36 ppb) in the groundwater from this investigation. These concentrations are reportedly higher than the MDEQs Tier 1 Target Remediation Goals (TRGs) for groundwater for these specific organic compounds. Other semi volatile organic and metals concentrations were also reported to have been detected in minor concentrations in the groundwater. The EarthCon report apparently recommended additional sampling to further investigate this area and that an alternate source of potable water be identified for this building. As previously mentioned, a copy of the EarthCon report could not be located during this Phase I ESA. Additionally, no clear or definitive information from other historical sources including former operations and regulatory personnel working with MCI-MTI, NASA or the MDEQ regarding the historical operations at this building and the reasons that would have prompted a more extensive subsurface investigation. Based on inability to review the 2005 EarthCon report to glean more definitive information about the potential source of impacts, the assessment methodologies used and the locations of the monitoring wells, as well as the reported concentrations of regulated compounds that exceed the MDEQ's regulatory limits on property that adjoins the

subject property (Area B), these documented groundwater impacts would appear to represent a recognized environmental condition (REC) with respect to the subject property at this time.

Area 9100 - Area 9100, located across Moses Cook Road to the southeast of the subject property (Area B), is a 218 acre complex of buildings and facilities that previously included Cargo Metal Parts and Projectile and Munitions Parts facilities, process cooling towers, industrial wastewater treatment and sanitary waste treatment facilities, fuel and raw material drum storage areas, above grade fuel tank storage, coal stockpile areas in association with the flue gas facility, chemical, fuel and other liquid material storage areas, etc. These facilities all supported the munitions management production at the MSAAP. The BRAC and Baseline Environmental reports document extensive soil, groundwater, surface water and sediment investigations and remedial/corrective action programs that have taken place within this area. The ECP (BRAC) report of 2006 characterizes the whole of Area 9100 as a Category 7 Parcel, which reportedly indicates that it is unevaluated and/or requires further evaluations. A review of the URS SI report (2008) and subsequent reports reveal that the majority of the past fuel and chemical releases and other environmental infractions associated with Area 9100 have been addressed to the satisfaction of the state and/or federal regulatory authorities (MDEQ and the EPA), or are in the process of being monitored or assessed for future decisions. The two historically documented environmental conditions associated with Area 9100 that appear to warrant examination with respect to the subject properties include: (a) a confirmed Trichloroethylene (TCE) plume in the groundwater in between buildings 9101 and 9100, and (b) the documented concentrations of Polynuclear Aromatic Hydrocarbons (PAH's) detected in surface water and sediment samples collected from the drainage ditches along the east and west sides of the Area 9100 complex and within drainage ditches located on north side of Moses Cook Road adjacent to the subject property (Area B). Based on reported information obtained from the BRAC report, the Baseline Environmental Report and subsequent groundwater monitoring reports prepared by URS, the TCE plume in the groundwater on the north side of Building 9101 has been delineated and the source mass area appears to be shrinking in size over time. Based on the MDEQ's concurrence that the TCE plume appears to be stable and not migrating further to the northwest, although groundwater flow is generally toward the direction of Area B, LE, LLC believes that the well documented and monitored TCE plume within Area 9100 constitutes a Controlled REC (CREC), but does not appear to pose an environmental concern with respect to the subject property, at this time.

With respect to the confirmed concentrations of PAHs that have been identified by URS in previous SI reports in the surface water and the sediments of the drainage ditches on the east and west sides of Area 9100, Health and Human Risk and Ecological Risk Assessment were reportedly conducted by URS to determine exposure risks to humans and ecological communities based on identified chemicals of concern in the groundwater, surface water or sediments within Area 9100 and within the drainage canals. The findings of these risk assessments reported that exceedences residential screening levels were initially documented; however, further evaluations revealed that the potential risk posed to industrial site workers/trespassers exposed to intermittent intervals of the reported compounds of interest within the groundwater, surface water and sediments was minimal and that no further

evaluation with respect to human health risks was required. The report states further that ecological risk evaluations establish that the low frequency of detections of PAH's and other compounds of interest, as well as the attenuation of those concentrations within the surface water and sediments of the canals on the East and West sides of Area 9100 "make the risk to downstream biological communities low", and that no further evaluations with respect to ecological risk to biological communities near Area 9100 is required. Additional sediment and surface water samples collected north of Area 9100 adjacent to, and possibly within the subject property were also evaluated. These concentrations appeared to be considerably lower than the concentrations reported in the canals adjacent to Area 9100, and based on findings of the report and the opinions of the MDEQ, did not appear to reflect a source mass area to the north of Area 9100. The MDEQ reportedly agreed with these observations and the recommendation that no further evaluation of ditch and surface water samples within the drainage canals on the east and west sides of and to the north of Area 9100 warranted additional assessment as long as the land use for this area does not change. Visual inspections of the drainage ditches on the north side of Moses Cook Road did not reveal obvious indications of sediment or surface water impacts. Based on these findings and regulatory opinions, LE, LLC believes that these conditions represent a Historical REC (HREC) with respect to the subject property. Nevertheless, given the past regulatory scrutiny of these investigations, the identified PAH compounds reported in the drainage ditch along the southeastern side of Area B (subject property) do not appear to represent a significant environmental concern for the subject property at this time.

MSAAP Landfill - the MSAAP Landfill occupies a 33 acre area approximately 0.5 mile to the east of Area B along Andrew Hancock Road. Information from former MCI contract employee's and previous assessment reports revealed that construction began in the late 1970's, and the landfill operated from the early 1980's through 1994 under an MDEQ Solid Waste permit. Waste streams disposed of in the landfill include wood and paper products, wooden pallets, dry sewage sludge, flue gas desulfurization sludge, metal and other non-hazardous waste streams. The landfill had a designed leachate collection system and a monitoring well network for assessment of groundwater quality around the landfill. Groundwater sample collecting from these monitoring wells reportedly indicated no detections of contaminants above drinking water standards. The various landfill cells were subsequently covered with fill and compacted to appropriate permeability standards, re-vegetated and then subsequently closed. Visual observations of the area during this Phase 1 ESA did not reveal evidence of surface contamination or seeps around the sides of the landfill. Based on this information and site observations, the MSAAP landfill does not appear to be an environmental concern for the subject properties at this time.

Kellar Range - Information obtained from former MSAAP, AGT and NASA employees and previous assessment reports indicates that the Kellar Range was originally part of the Army's bombing range in the 1950's. It is located within 0.5 miles of the subject property along Andrew Hancock Road. Maps of the former Kellar Range show the boundary actually extending into the east side of the overall +/- 1,160 acre AOI of Project Wild Boar, but does not extend into the subject properties (Areas A and B). Munitions explosion, propellant and

pyrotechnic testing was reportedly conducted in this area in the late 1960's and 1970's prior to MSAAP operations. In 1981, these testing activities were reportedly removed to the EMTF. It was reportedly not used by MSAAP as part of their operations. Site investigations consisting of soil and groundwater assessment were reportedly conducted in the 1980's and 1990's. The site is also referred to as Area I and is a CERCLA site. Subsurface groundwater and geophysical investigations were reportedly conducted in this area during the 1990's to characterize the subsurface geology and document groundwater quality in the area. A May 17, 2007 letter from the MDEQ to NASA states that low levels of explosive compounds for which there are no apparent groundwater standards were reported in the groundwater samples collected from monitoring wells within the Kellar Range. The letter also states that there are no apparent risks to ecological receptors in the area and the fencing around the area serves as a sufficient institutional and security control to limit access due to documented areas with unexploded ordinance (UXO). The MDEQ concurred with the No Further Action recommendation for this site. No visual observations of the interior of the Kellar Range were performed due to the site access restrictions. However, based on this information and the distance from the subject properties, the Kellar Range does not appear to represent an environmental concern with respect to the subject properties at this time.

Building 9138 (former Block and Brace Yard) - the former Block and Brace facility is located approximately 0.25 miles east of Area A, in the northwestern portion of the Project Wild Boar AOI. It represents a 6,300 square foot loading dock facility where finished munitions products were loaded on to railcars and the materials secured (blocked and braced) in stable arrangements to reduce vibrations that may cause accidental detonation during transport. There is no record of this area having been used for the storage of fuels or chemicals or any resulting releases in this area from such products. There were no previous assessments reported for this area. Visual inspections of this area did not reveal indications of surface staining, stressed vegetation or other obvious indications of environmental impact. Given these findings, the Block and Brace facility does not appear to represent an environmental condition with respect to the subject property.

Colonel Sawyer Landfill - this is located in the very northeastern portion of the AOI approximately 0.6 miles northeast of Area A. The site is referred to in the BRAC report as the rubbish landfill and apparently began operating in circa 1980. The land fill reportedly does not have a formal design associated with it (i.e. constructed liner, leachate collection mechanism, etc.); however, the BRAC report documents that it only received construction and demolition debris including concrete, rebar and paving materials associated with the construction of the MSAAP facility. The area was reportedly covered and capped in the mid 1990's. No apparent documentation of disposal records associated with this rubbish landfill unit supposedly exist, but multiple sources all confirm the same general understanding of the history of this feature. Visual observations of this area did not reveal evidence of leaching from the toe of this structure or indications of staining or stressed vegetation. Accordingly, the Colonel Sawyer Landfill does not appear to pose an environmental concern with respect to the subject property at this time.

Railroad Spurs, Control Loading Area and Inspection Station - These site features, with the exception of the rail car inspection station, are located within Area A in the northern portion of the Wild Boar Project Area. The rail spur facilities are simply the transportation improvements constructed to move raw materials and finished products to or from the MSAAP facility. LE, LLC understands that this area was used primarily as a rail car staging until finished or raw materials that the cars contained could be moved on to other areas of the MSAAP, or shipped off site. Loading Dock or Suspect Car Control Area located in the southern portion of Area A was reportedly built as a safe off loading area for explosive materials that needed be unloaded in a safe and secure area away from the main MSAAP facility. No incidents are reported to have occurred at this location, nor is there any record of chemical or fuel spills having been stored or released in this area. Finally, the rail car inspection station located just outside the security fence outside of Area A was constructed with a sub grade (lighted) observation trench from which close inspection of the undercarriage of rail cars could be viewed. No history of incidents or hazardous material releases are reported to have occurred in this area of the property. Visual inspections of these areas did not reveal indications of stressed vegetation, soil staining or other indications of gross environmental impact. Accordingly, these features within Area A, and on parcels adjacent to Area A, do not appear to represent environmental concerns with respect to the subject property.

NASA Landfill - the NASA Landfill is identified as a CERCLA site located approximately 0.5 miles to the southwest of the subject property (Area B). It is a solid waste landfill operating under and MDEQ Permit No. SW 02401B-0376 and has been opened reportedly since the 1970's. The landfill receives mostly vegetative and construction debris and other municipal waste streams from NASA facilities. It does not receive hazardous waste streams, but reportedly does have two cells that are permitted to receive asbestos containing materials (ACM). Information from NASA and landfill personnel revealed that the landfill has an approximate 15 to 20 years of capacity remaining before it would have to be closed. A visual inspection of the area surrounding the landfill did not reveal evidence or indications of environmental impact. Based on this information, as well as the distance from the subject properties, LE, LLC does not believe that the NASA Landfill represents an environmental concern with respect to the subject properties at this time.

Building 9121 (Former Operations Building) - Building 9121 is located along the southern boundary and immediately adjacent to Area B. It is a small +/-12,000 square foot building constructed reportedly in 1989 as a security operations and human resources building during the MSAAP operational period. The building reportedly has no history of chemical or hazardous waste storage and or previously documented releases. Building 9121 is listed as having a small diesel powered generator which apparently has already been inventoried and included with the other minor emission points for the "Minor Sources Air Permit" maintained by NASA. Based on this information, Building 9121 is not considered an environmental concern with respect to the subject property at this time.

Buildings 8302 (Shorty's Residence) and 9158 (Weaver Yard) - Shorty's residence is a small building constructed in approximately 1947 (before NASA and MSAAP operations). The Baseline Assessment Report states that two (2) petroleum fuel USTs were installed at this location in 1967 for use by Weaver Construction during the construction of the Rocket Testing Facilities. These two tanks were reportedly removed from the ground; however, the BRAC report indicates that Shorty's was also a gasoline fueling station prior to Weaver assuming operational control of the area. The BRAC report also states that a geophysical survey was conducted in 1991 to determine the location of other tanks in the area. This assessment was reportedly inconclusive regarding the existence or location of additional tanks. Shorty's residence is also in the same general area as the former Weaver Yard (Building 9158). A 1990 investigation reports two ASTs being removed from Shorty's with gross surface contamination the immediate area of the ASTs. The ASTs reportedly contained gasoline and diesel fuel. Land use records for this area of MSAAP include use by a motor pool, heavy equipment repair and refueling and general construction. The Baseline Report indicates that environmental sampling has been completed at Shorty's residence and in the area identified as the Weaver Yard, but there is apparently not a lot of information about the results of confirmatory sampling efforts. Also, according to the 2006 ECP report, there was a fuel spill in the Weaver Yard area by FEMA following Hurricane Katrina, but the spill was reportedly addressed according to former employees of AGT and MTI that LE, LLC interviewed. The 2006 ECP report classifies Area 8302 and the Weaver Yard as Category 2 area, which designates the area as only suspect for petroleum disposal or release. Given the historical information available for these two areas and their general proximity to the Subject Properties, it would be reasonable to conclude that these sites represent RECs with respect to the subject property. However, based on documented corrected actions that document removal of the Weaver USTs (potential contamination sources) from these areas, the AST's from Shorty's Bar (not residence) and other corrective actions and sampling that have been verified by other sources, information obtained from previous employees and site managers associated with MSAAP, as well as a visual survey of the area that does not indicate evidence of gross soil contamination, stressed vegetation or other indicators of environmental impact, these sites do not appear to represent an environmental concern with respect to the subject properties at this time.

Building 9112 (Area Engineer Training Office) - This building was located just to the south of the former Shorty's residence and Building 9158. The building has been removed in circa 2014. It was previously an administrative and training building during the MSAAP operations. a 500 gallon UST that contained heating oil was reportedly located near this building. The tank was reportedly removed in 2000, but no documentation exists to support those activities. The Baseline Report also indicates that one of the two historical gasoline service stations in this immediate area was located on the east side of Building 9112. It was removed apparently in the 1960's, although specific closure documents regarding those activities reportedly do not exist. As with Buildings 8302 and 9158, non-intrusive surveys to locate former fuel tanks were conducted near building 9112; however, the results were inconclusive and buried tanks were never identified. Given the distance of Building 9112 and the historical activities that were conducted near it (over 1,200 feet), and

the lack of current activities at this location that would be considered environmentally suspect, LE, LLC does not consider this site to represent an environmental concern with respect to the subject properties at this time.

Based on the findings of this Phase I ESA, recognized environmental conditions (REC's) have been identified in connection with the subject properties at this time.

9.0 OPINIONS

It is the opinion of the environmental professional who conducted this Phase I ESA that, based on the findings of this environmental site assessment, recognized environmental conditions (RECs) appear to exist with respect to the subject properties at this time.

The principal REC discovered during this Phase I ESA includes the previously documented groundwater impacts near Building 9115 (former Blount Building). The 2005 investigation from EarthCon recommended additional investigations to determine the extent of impacts and the source. LE, LLC was unable to obtain a full copy of that 2005 EarthCon report to review the assessment methodologies, sample locations, analytical results or the conclusions. An excerpt from that report was however reviewed (included in Appendix E). This excerpt from the 2005 report confirms the concentrations of certain volatile organic compounds (i.e. Naphthalene, Trimethylbenzene and Chloroform) identified in the groundwater near Building 9115. The URS ECP (BRAC) Report of 2006 classified this site as a Category 6 property that requires further investigation. In as much as these previous recommendations establish the need for future delineation and source assessment of the Building 9115 area, it is LE, LLC's opinion that, in the context of determining whether impacts discovered at Building 9115 have potentially influenced the subject property (based on its proximity and the lack of understanding of the previous investigation), that a subsurface assessment of the boundary area between the subject property (Southeast corner of Area B) and Building 9115 area should be considered to more conclusively determine whether the subject property has been impacted by documented impacts from historical activities confirmed by the 2005 investigation at and near former Building 9115.

The identified PAH compounds within the drainage ditch on the north side of Moses Cook Road adjacent to and within the far southeastern portion of Area B (subject property) appear to represent an HREC with respect to the subject property because they are documented findings and regulatory scrutiny of their potential impacts has been completed. However, the previous assessments and regulatory oversight of these documented PAH concentrations within the surface water and sediment appear to be viewed by regulatory authorities as not constituting a reason to conduct further assessments at this time. LE, LLC agrees with this opinion. Nevertheless, in light of the fact that confirmed groundwater impacts have been identified near former Building 9115 (and its proximity to the drainage ditch and Area B), the final consideration as to whether the surface water and sediment impacts in the drainage ditch do not represent an environmental concern for the subject property should be withheld until such time that an additional subsurface investigation can demonstrate that the soil and/or groundwater in the area between the former Building 9115 and Area B (subject property) is completed, and a better understanding of the extent of the identified impact in the groundwater near former Building 9115 can be determined.

Historical land use activities at Shorty's Bar and residence, as well as the former Buildings 9158 and 9112 confirm the use of petroleum fuel tanks, site investigations, UST and AST

removals and closures, and some degree of due diligence to determine subsurface impacts. Their proximity to the subject property makes these areas potential environmentally suspect properties; however, the documented removal of petroleum fuel tanks from this area and degree of scrutiny and apparent effort to determine if petroleum sources still exist at these sites appears to be more extensive than what has taken place at former Building 9115. Accordingly, these tracts of land to the south of Moses Cook Road constitute more of a *de minimis* condition and do not appear to constitute an environmental concern with respect to the subject properties, at this time.

10.0 CONCLUSIONS

LE, LLC has performed this Phase 1 ESA conformance with the scope and limitations of ASTM Practice E 1527-13 of the subject properties as described in this report and as depicted in Appendix A. This assessment has revealed evidence of recognized environmental conditions in connection with the "subject properties" at this time. In this regard, LE, LLC recommends, although it is not required, that a Limited Subsurface Soil and Groundwater Assessment of the boundary area between the subject property (Southeast Corner of Area B) and former Building 9115 (Blount Building) area be considered to more conclusively determine whether the soil or groundwater within the subject property has been impacted by documented groundwater contamination from historical activities confirmed by the 2005 EarthCon investigation at and near former Building 9115.

11.0 DEVIATIONS

No deviations or significant data gaps were encountered during the course of this Phase 1 ESA with the exception of the inability to review the 2005 Environmental Baseline Investigation Report for Building 9115. The report documents the extent of the subsurface investigation conducted near the former Blount Building and reportedly illustrates the locations of the monitoring wells that were installed that identify where groundwater impacts were encountered near Building 9115. This data gap or lack of information impacted LE, LLC's ability to provide an opinion of the environmental integrity of the subject properties. The other documented data gaps did not influence LE, LLC's ability to provide an environmental opinion with respect to the subject properties.

12.0 ADDITIONAL SERVICES

No additional services were conducted by LE, LLC in association with the subject properties.

13.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

The following investigator contributed to the preparation of this report and represent the contents of this report to be true and correct. To the best of my knowledge, no facts have been deleted or misrepresented:

Lars Larson - Larson Environmental, LLC

Name and Company



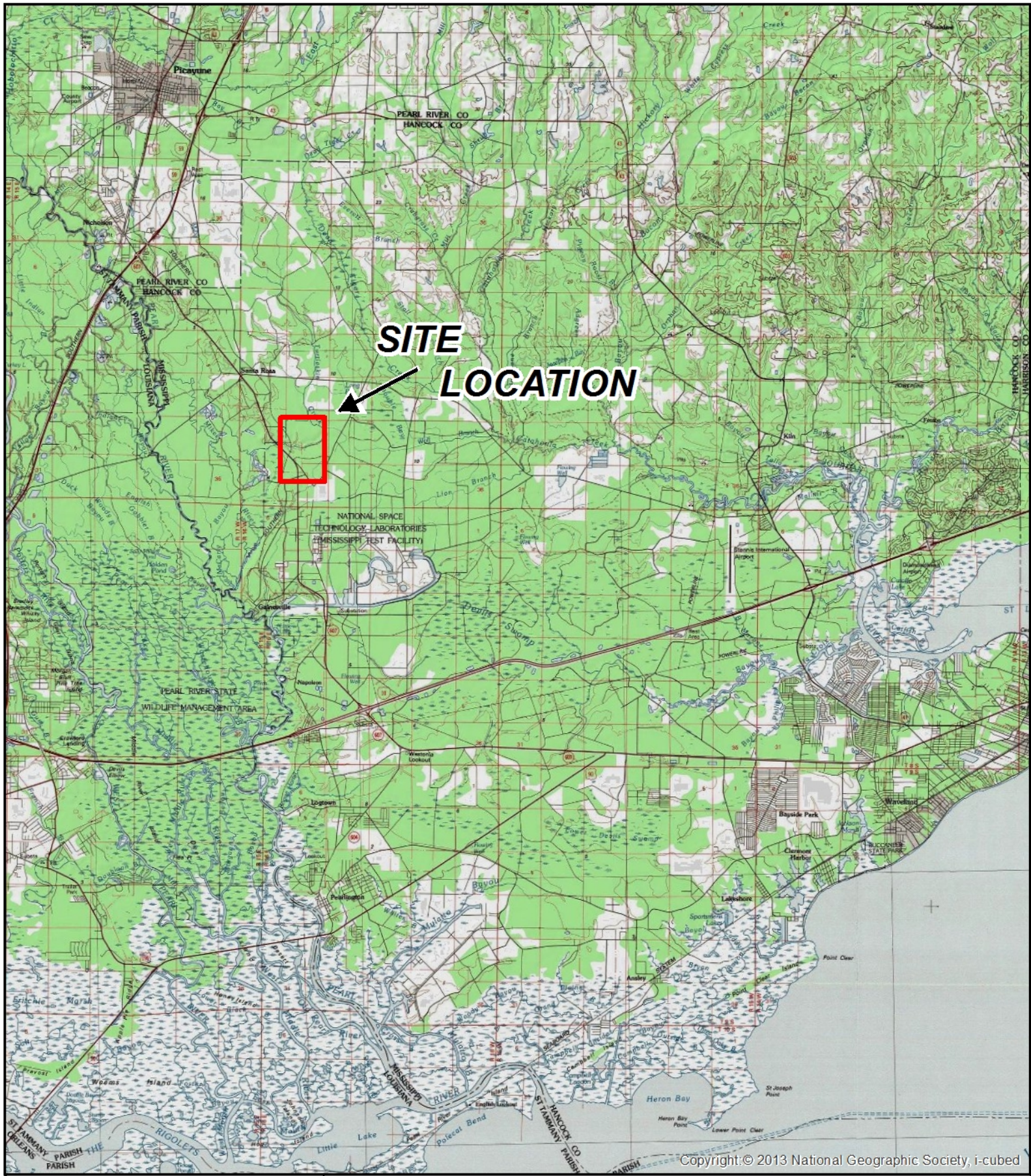
March 14, 2017

Signature

Date

APPENDICES

APPENDIX A
MAP INFORMATION



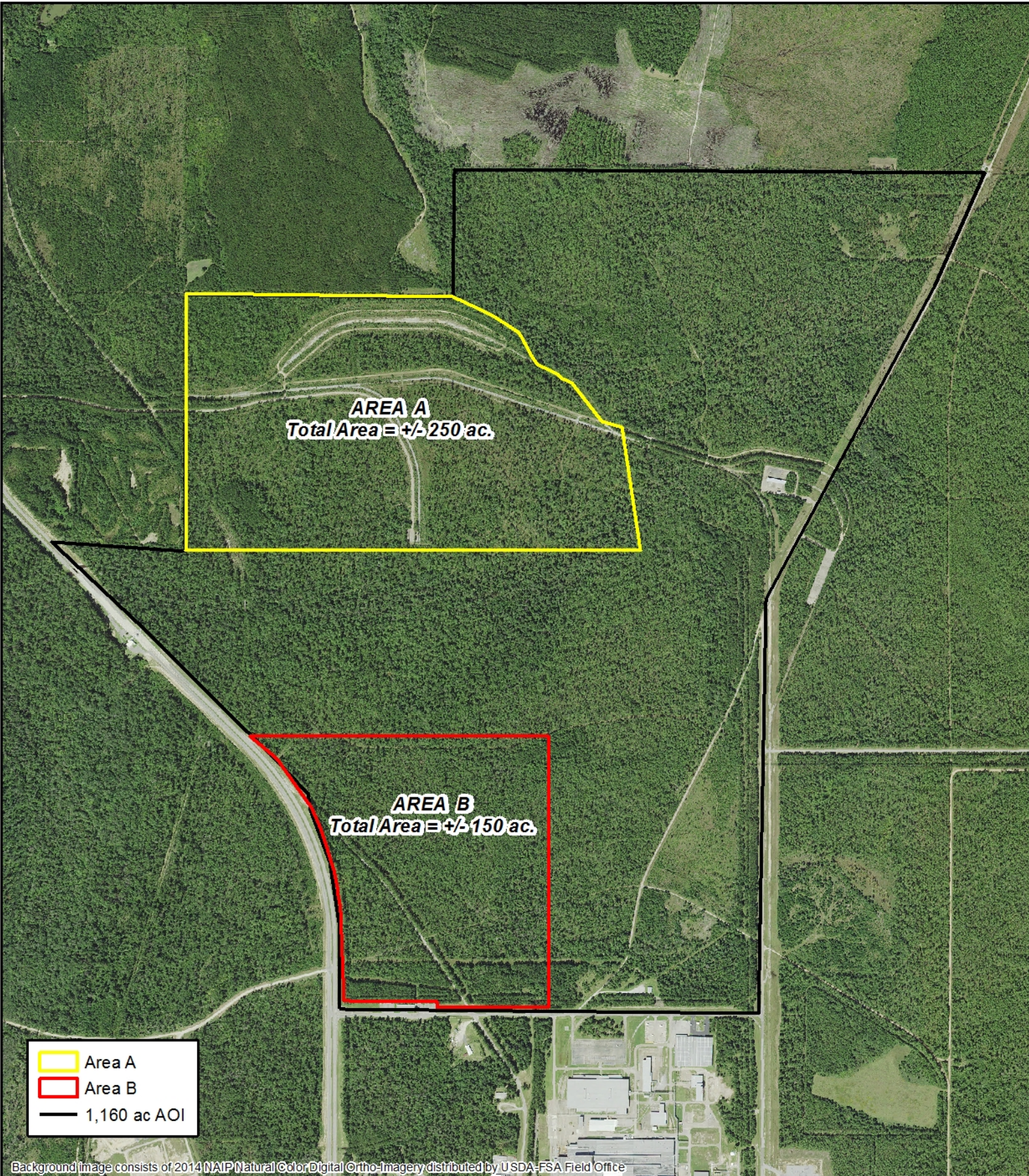
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LARSON ENVIRONMENTAL, LLC

2 Schooner Lane | Ocean Springs, Mississippi 39564 | Tel: 228.219.2992



Drawn By:	CAD	Checked By:	LL	Scale:	1 inch = 2.94 mi.	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	Figure 1: Site Location Map								



Area A
 Area B
 1,160 ac AOI

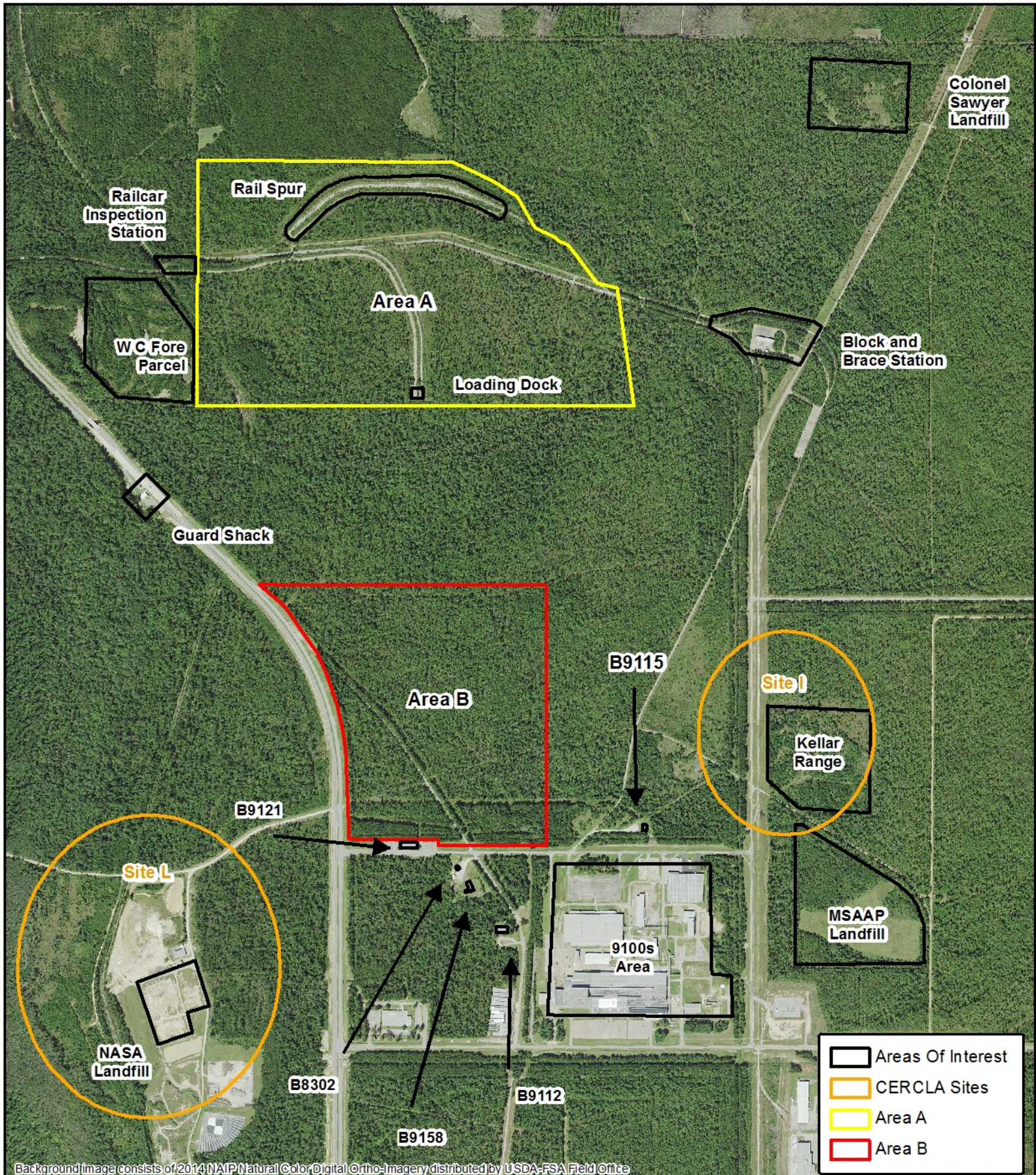
Background image consists of 2014 NAIP Natural Color Digital Ortho-Imagery distributed by USDA-FSA Field Office



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2 Schooner Lane | Ocean Springs, Mississippi 39564 | Tel: 228.219.2992

Drawn By:	CAD	Checked By:	LL	Scale:	1 inch= 1,302 feet	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	Figure 2: Detailed Area A & B Map								



	Areas Of Interest
	CERCLA Sites
	Area A
	Area B



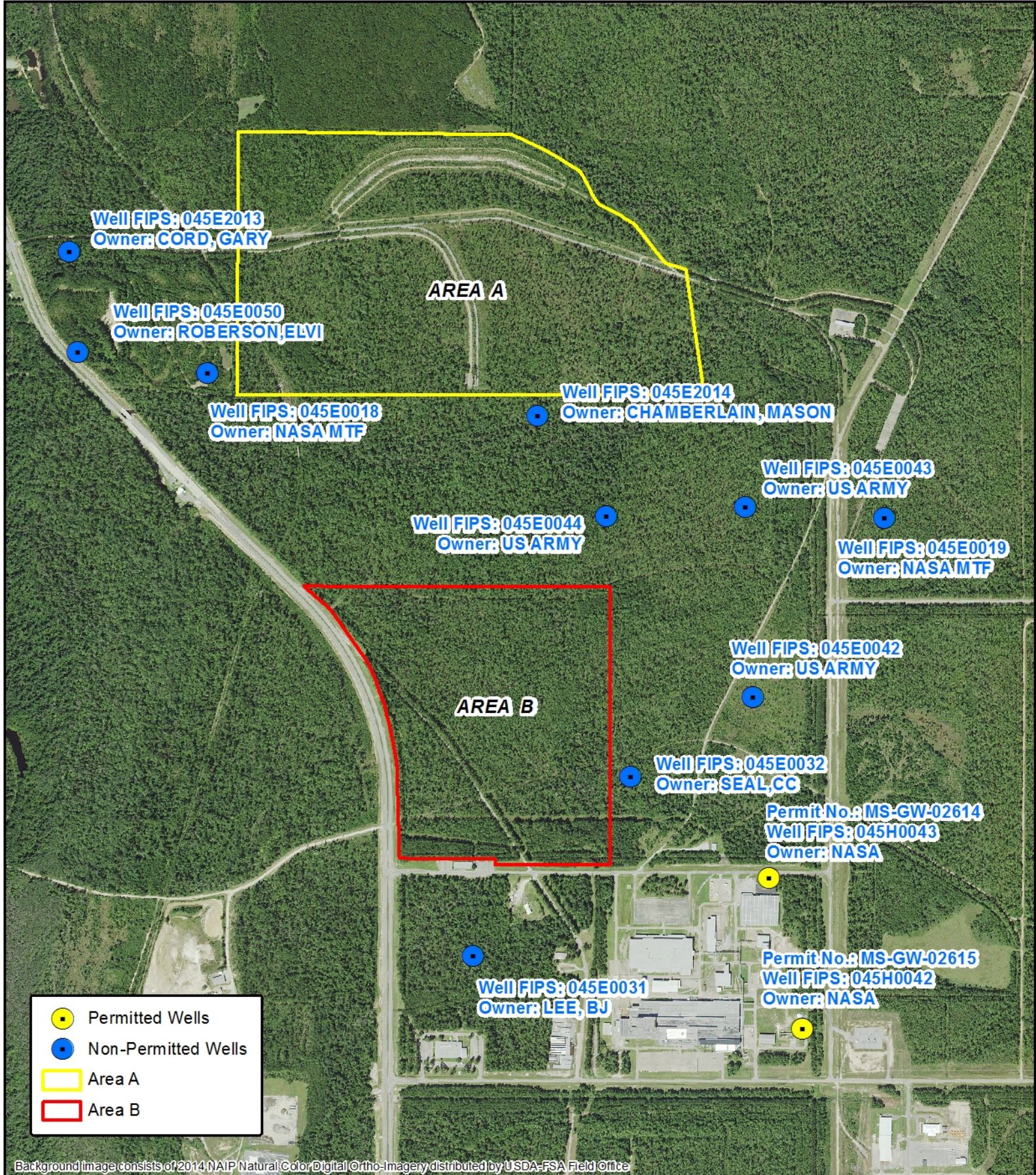
LARSON ENVIRONMENTAL, LLC

2 Schooner Lane | Ocean Springs, Mississippi 39564 | Tel: 228.219.2992

Drawn By:	CAD	Checked By:	LL	Scale:	1 inch = 1,355 feet	Date:	March 10, 2017	Project No.:	2016-119-2
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Project: Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS

Title: Figure 3: Areas of Interest Near Subject Properties



LARSON ENVIRONMENTAL, LLC

2 Schooner Lane | Ocean Springs, Mississippi 39564 | Tel: 228.219.2992

Drawn By: CAD	Checked By: LL	Scale: 1 inch = 1,266 feet	Date: March 10, 2017	Project No.: 2016-119-2
Project: Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS				
Title: Figure 4: Water Well Location Map (MDEQ)				



APPENDIX B
PHOTOGRAPHIC DOCUMENTATION
OF SITE INSPECTIONS
(JANUARY 9, 2017 THROUGH MARCH 1, 2017)



Figure B-1. View of the former Block and Brace dock area located to the east of Area A.



Figure B-2. View of the top of the Colonel Sawyer Landfill following the wildfire of November 2016s.



Figure B-3. View of the Gulf South Pipeline metering station just outside the NASA Fee Area northeast of Area A.



Figure B-4. The former Suspect Car Control Loading Area used during MSAAP operations located within Area A.



Figure B-5. View of the rail car inspection station located outside the fenced area on the west side of Area A.



Figure B-6. Telecommunication right-of-way located along Highway 607 on the west side of Area B.



Figure B-7. View of the power line right-of-way along the southern side of Area B and Moses Cook Road.



Figure B-8. View of the north side of the drainage culvert that underlies Moses Cook Road where sediment and surface water sampling associated with RI studies of Area 9100 were previously conducted.



Figure B-9. View of facing east of the area where the former Blount Building (#9115) was located.



Figure B-10. View of the backside of Area 9100 from Moses Cook Road.



Figure B-11. View of the cleared area along the south side of Kellar Road (east of Area B) where historical sandblasting and painting were conducted during MSAAP operations.



Figure B-12. View facing west of the top of the MSAAP landfill.



Figure B-13. View of the east side of the drainage ditch along the toe of the MSAAP Landfill.



Figure B-14. View of the entrance to the Kellar Range. View facing East.



Figure B-15. View of the former Shorty's residence (Later Building (8302) on the south side of Moses Cook Road.



Figure B-16. View of area where Shorty's restaurant and fueling station was previously located east of Area 9100.



Figure B-17. View of former Building 9158 (Weaver Yard) located immediately south of Shorty's residence.



Figure B-18. View of the interior of a wetland drainage area in northern portion of Area B.



Figure B-19. View of an upland Pine Flatwoods terrace area in the central portion of Area A.



Figure B-20. View of a side slope area of one of the railroad spurs within Area A illustrating yaupon holly and gallberry dominated understory within an upland - Pine Flatwoods habitat.

APPENDIX C
ASTM QUESTIONNAIRE

ASTM E1527-13 USER QUESTIONNAIRE

**Project Wild Boar Properties - Areas A and B
+/- 250 and +/- 150 Acre Parcels - Stennis Space Center, Hancock County, MS**

When the "user" (the party for whom the assessment is being prepared) of the Phase I is required to help the environmental professional identify recognized environmental conditions at the property, a "User Questionnaire" is completed by the user to help gather information that may identify recognized environmental conditions at the property.

We ask that you answer the six questions below to the best of your knowledge. We understand that, in some circumstances, you may have little or no information. Still, we encourage you to complete and return the questionnaire as soon as possible. This will allow us to reflect the fact that the Questionnaire was completed when we issue our report as is required. Completion of the assessment to the new standard, when conducted in connection with the asset purchase of a real property, may entitle the user to certain federal liability protections that result from conducting "All Appropriate Inquiries" into the previous ownership and uses of a property.

On the second page of this form is a list of documentation. The E1527-13 Standard requires that the User will ensure that the consultant is made aware that any of these materials exist for a site, and if so, that these documents be provided for the consultant's review. Please indicate whether any of these documents are available, and ensure that Environmental Services Company will either receive copies or be provided an opportunity to review the relevant materials.

We appreciate your assistance. If you have any questions, feel free to contact us.

1. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

I am not aware of any liens against the property of concern.

2. Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

I am not aware of any activity or use limitations being in place for the property of interest nor any recorded restrictions registered under federal, tribal, state or local law.

3. As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

The adjoining property was leased by NASA to the Department of Defense (U. S. Army) to accommodate the facilities of the former Mississippi Army Ammunition Plant. The property was then transferred back to NASA in July 2011. The mission was different from that of NASA but the knowledge of the chemicals/processes would be of interest for the NASA Environmental Staff because of the need to identify potential processes that would be a detriment to the environment.

4. Does the purchase price/loan amount for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

The property is owned by NASA and is projected for NASA use or lease. It is not being sold. Therefore, this question is not applicable.

ASTM E1527-13 USER QUESTIONNAIRE

Project Wild Boar Properties - Areas A and B
+/- 250 and +/- 150 Acre Parcels - Stennis Space Center, Hancock County, MS

5. Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user, (a.) Do you know the past uses of the property? (b.) Do you know of specific chemicals that are present or once were present at the property? (c.) Do you know of spills or other chemical releases that have taken place at the property? (d.) Do you know of any environmental cleanups that have taken place at the property?

NASA provided to the contractor the Baseline Environmental Assessment for the 9000 Complex and the 2005 U. S. Army's BRAC Environmental Condition of Property Report for the Mississippi Army Ammunition Plant. Both reports identified; a) past usage of the property; b) specific chemicals were used on the property and some analytical data that identified potential contamination of soil and/or groundwater; c) spills and/or releases were also noted in both reports; d) certain areas were noted in the reports for cleanup actions, which is outside of the property of interest.

6. As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?

At this time I am not aware of any indicators that would suggest that there is a presence of contamination on the property of interest.

ASTM E1527-13 USER QUESTIONNAIRE

Project Wild Boar Properties - Areas A and B
+/- 250 and +/- 150 Acre Parcels - Stennis Space Center, Hancock County, MS

As part of this study, which of the following are you providing?

1. Previous environmental site assessment reports Yes No
2. Environmental compliance audit reports Yes No
3. Environmental permits (including but not limited to solid waste disposal permits, hazardous waste disposal permits, wastewater permits, NPDES, underground injection permits) Yes No
4. Registrations for underground and aboveground storage tanks Yes No
5. Registrations for underground injection systems Yes No
6. Material safety data sheets Yes No
7. Community Right-to-Know plan Yes No
8. Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans; etc. Yes No
9. Reports regarding hydrogeologic conditions on the property or surrounding area Yes No
10. Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property or relating to environmental liens encumbering the property Yes No
11. Hazardous waste generator notices or reports Yes No
12. Geotechnical studies Yes No
13. Risk assessments Yes No
14. Recorded Activity and Use Limitations (AULs). Yes No

Please contact us if you have any questions regarding these ASTM requirements.

Please return the completed document to LARSON ENVIRONMENTAL, LLC at
2 Schooner Lane, Ocean Springs, MS 39564 or via email at larslarson28@gmail.com.

Completed by:

Jenette B. Gordon

Signature:

Jenette B. Gordon

Title:

Environmental Specialist

Company:

NASA

Relationship to site
(i.e. lender, purchaser, owner):

Federal owned property

Date:

March 2, 2017

APPENDIX D
REGULATORY RECORDS DOCUMENTATION
(EDR DATABASE REPORT, CITY DIRECTORIES, ENVIRONMENTAL LIEN SEARCH)

NASA - John C. Stennis Space Center

C Road

Stennis Space Center, MS 39529

Inquiry Number: 4830950.2s

January 18, 2017

The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-11
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Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

C ROAD
STENNIS SPACE CENTER, MS 39529

COORDINATES

Latitude (North): 30.4037590 - 30° 24' 13.53"
Longitude (West): 89.6213860 - 89° 37' 16.98"
Universal Transverse Mercator: Zone 16
UTM X (Meters): 248154.8
UTM Y (Meters): 3366261.8
Elevation: 26 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 5630541 DEAD TIGER CREEK, MS
Version Date: 2012

Northwest Map: 5637371 NICHOLSON, MS
Version Date: 2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from: 20141004, 20150831
Source: USDA

MAPPED SITES SUMMARY

Target Property Address:

C ROAD
STENNIS SPACE CENTER, MS 39529

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	GSPC- NASA (00835)		SHWS, VCP	Higher	4514, 0.855, NE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY..... Federal Facility Site Information listing
SEMS..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System
US ENG CONTROLS..... Engineering Controls Sites List

EXECUTIVE SUMMARY

US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Landfills

DEBRIS..... Debris Site Locations Listing

State and tribal leaking storage tank lists

LUST..... Leaking Underground Storage Tank Database

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing

UST..... Underground Storage Tanks

AST..... Aboveground Storage Tanks

INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

ENG CONTROLS..... Sites with Engineering Controls

INST CONTROL..... Sites with Institutional Controls

State and tribal voluntary cleanup sites

VCP..... Voluntary Evaluation Program Sites

INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Uncontrolled Sites List

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY..... Mississippi Recycling Directory

SWTIRE..... Commercial Waste Tire Haulers

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

ODI..... Open Dump Inventory

IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register

EXECUTIVE SUMMARY

US CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
FUDS..... Formerly Used Defense Sites
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST
2020 COR ACTION..... 2020 Corrective Action Program List
TSCA..... Toxic Substances Control Act
TRIS..... Toxic Chemical Release Inventory System
SSTS..... Section 7 Tracking Systems
ROD..... Records Of Decision
RMP..... Risk Management Plans
RAATS..... RCRA Administrative Action Tracking System
PRP..... Potentially Responsible Parties
PADS..... PCB Activity Database System
ICIS..... Integrated Compliance Information System
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS..... Material Licensing Tracking System
COAL ASH DOE..... Steam-Electric Plant Operation Data
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER..... PCB Transformer Registration Database
RADINFO..... Radiation Information Database
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS..... Incident and Accident Data
CONSENT..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV..... Indian Reservations
FUSRAP..... Formerly Utilized Sites Remedial Action Program
UMTRA..... Uranium Mill Tailings Sites
LEAD SMELTERS..... Lead Smelter Sites
US AIRS..... Aerometric Information Retrieval System Facility Subsystem
US MINES..... Mines Master Index File
FINDS..... Facility Index System/Facility Registry System
DOCKET HWC..... Hazardous Waste Compliance Docket Listing
UXO..... Unexploded Ordnance Sites
AIRS..... Air Quality Information Listing
ASBESTOS..... Asbestos Project Listing
DRYCLEANERS..... Drycleaner Facilities Listing
NPDES..... Industrial & Municipal NPDES Facilities
PERMITS..... Environmental Site Information System Listing
UIC..... UIC Information
ECHO..... Enforcement & Compliance History Information
FUELS PROGRAM..... EPA Fuels Program Registered Listing

EXECUTIVE SUMMARY

ABANDONED MINES..... Abandoned Mines

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR Hist Auto..... EDR Exclusive Historic Gas Stations
EDR Hist Cleaner..... EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS..... Recovered Government Archive State Hazardous Waste Facilities List
RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Environmental Quality's Uncontrolled Site Project Tracking System.

A review of the SHWS list, as provided by EDR, and dated 09/01/2016 has revealed that there is 1 SHWS site within approximately 1 mile of the target property.

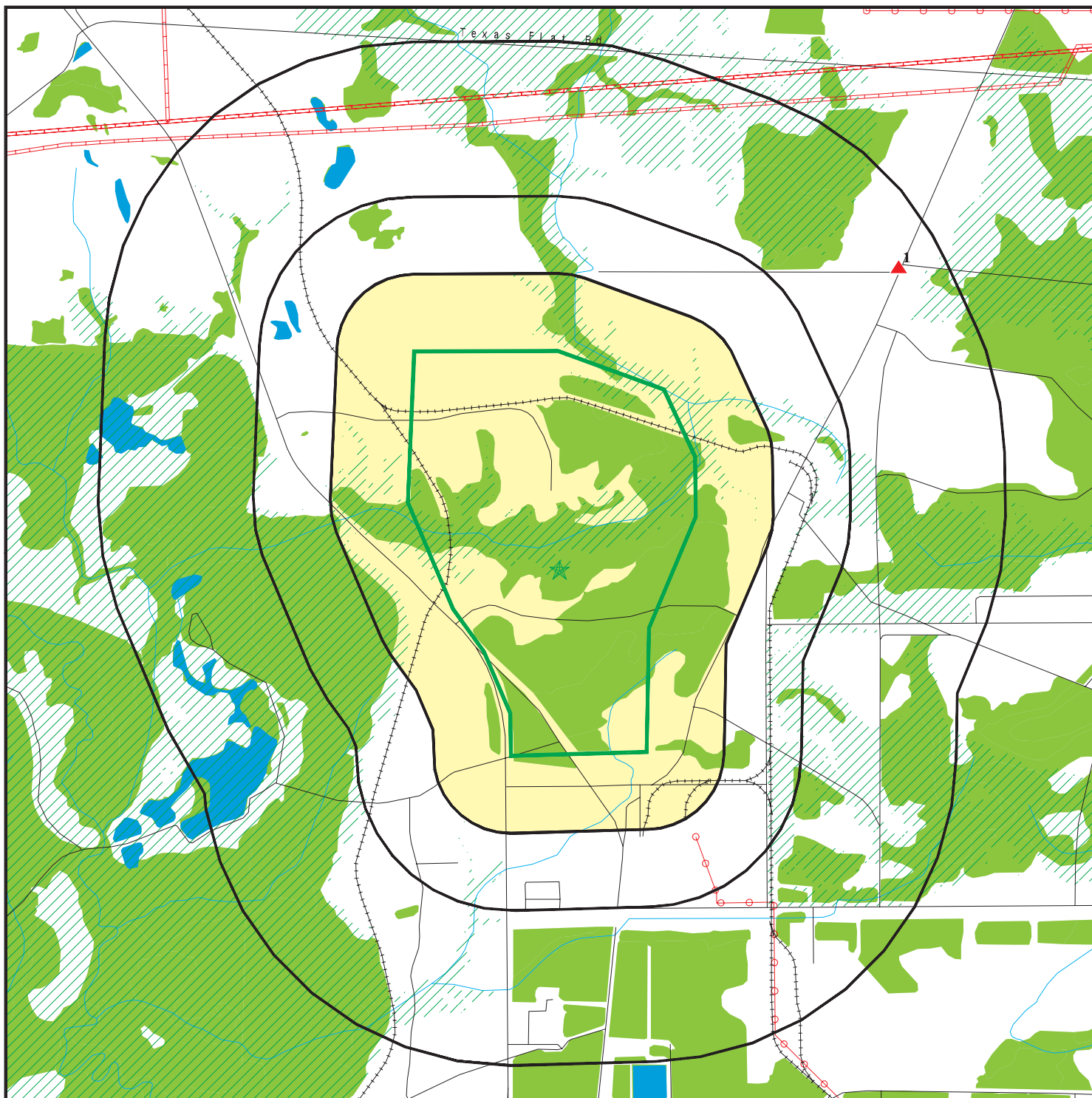
<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<i>GSPC- NASA (00835)</i> Status: SNFA		<i>NE 1/2 - 1 (0.855 mi.)</i>	<i>1</i>	<i>8</i>

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 7 records.

<u>Site Name</u>	<u>Database(s)</u>
STENNIS SPACE CENTER BUILDING B 81	ASBESTOS
STENNIS SPACE CENTER	ASBESTOS
STENNIS SPACE CENTER BUILDING 7001	ASBESTOS
STENNIS SPACE CENTER LEVEE REHABIL	PERMITS
STENNIS SPACE CENTER BUILDING B 81	FINDS
MDOT, STENNIS SPACE CENTER CONSTRU	FINDS
STENNIS SPACE CENTER	RGA LUST

OVERVIEW MAP - 4830950.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

Power transmission lines

Pipelines

100-year flood zone

500-year flood zone

National Wetland Inventory

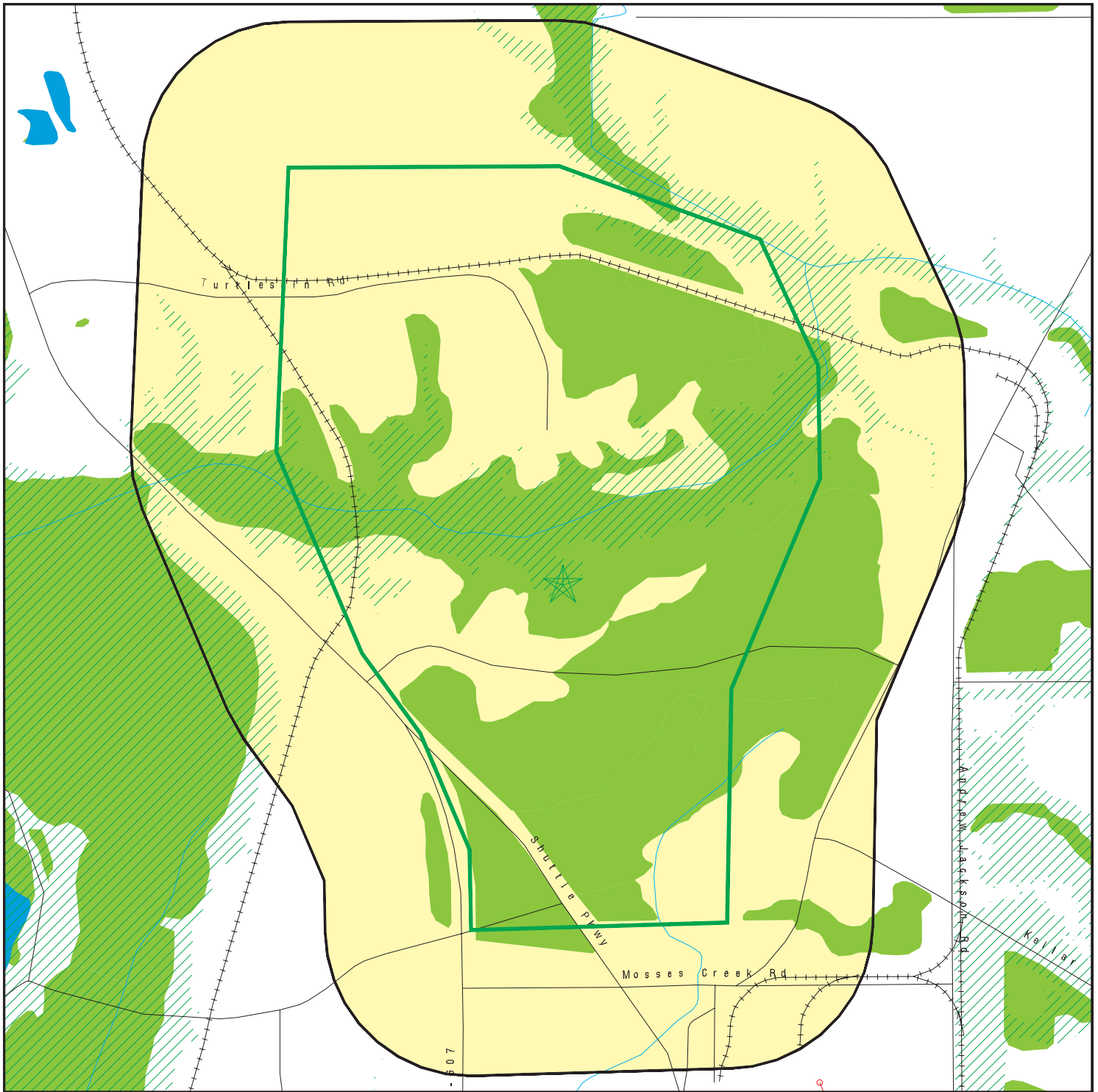
State Wetlands








This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.







SITE NAME: NASA - John C. Stennis Space Center
 ADDRESS: C Road
 Stennis Space Center MS 39529
 LAT/LONG: 30.403759 / 89.621386

CLIENT: Larson Environmental, LLC
 CONTACT: Lars Larson
 INQUIRY #: 4830950.2s
 DATE: January 18, 2017 2:46 pm

DETAIL MAP - 4830950.2S



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  Sensitive Receptors
-  National Priority List Sites
-  Dept. Defense Sites

-  Indian Reservations BIA
-  Power transmission lines
-  100-year flood zone
-  500-year flood zone
-  National Wetland Inventory
-  State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: NASA - John C. Stennis Space Center
 ADDRESS: C Road
 Stennis Space Center MS 39529
 LAT/LONG: 30.403759 / 89.621386

CLIENT: Larson Environmental, LLC
 CONTACT: Lars Larson
 INQUIRY #: 4830950.2s
 DATE: January 18, 2017 2:47 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
<i>Federal NPL site list</i>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<i>Federal Delisted NPL site list</i>								
Delisted NPL	1.000		0	0	0	0	NR	0
<i>Federal CERCLIS list</i>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<i>Federal CERCLIS NFRAP site list</i>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<i>Federal RCRA CORRACTS facilities list</i>								
CORRACTS	1.000		0	0	0	0	NR	0
<i>Federal RCRA non-CORRACTS TSD facilities list</i>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<i>Federal RCRA generators list</i>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<i>Federal institutional controls / engineering controls registries</i>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
<i>Federal ERNS list</i>								
ERNS	TP		NR	NR	NR	NR	NR	0
<i>State- and tribal - equivalent CERCLIS</i>								
SHWS	1.000		0	0	0	1	NR	1
<i>State and tribal landfill and/or solid waste disposal site lists</i>								
SWF/LF	0.500		0	0	0	NR	NR	0
DEBRIS	0.500		0	0	0	NR	NR	0
<i>State and tribal leaking storage tank lists</i>								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
<i>State and tribal registered storage tank lists</i>								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
<i>State and tribal institutional control / engineering control registries</i>								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
<i>State and tribal voluntary cleanup sites</i>								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
<i>State and tribal Brownfields sites</i>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<u>ADDITIONAL ENVIRONMENTAL RECORDS</u>								
<i>Local Brownfield lists</i>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Landfill / Solid Waste Disposal Sites</i>								
SWRCY	0.500		0	0	0	NR	NR	0
SWTIRE	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Hazardous waste / Contaminated Sites</i>								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
<i>Local Land Records</i>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
<i>Records of Emergency Release Reports</i>								
HMIRS	TP		NR	NR	NR	NR	NR	0
<i>Other Ascertainable Records</i>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
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NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

1
NE
1/2-1
0.855 mi.
4514 ft.

GSPC- NASA (00835)
HANCOCK (County), MS

SHWS **S106861187**
VCP **N/A**

Relative:
Higher

SHWS:
 Lat/Long (dms): 30 25 5 / 89 36 11
 Site Size (acres): <1
 EPA ID: Not reported
 Project Manager: Not reported
Status: **SNFA**
 State No Further Action Date: 09/12/2005
 Federal: Not reported
 Federal No Further Action Date: Not reported
 Soil Contamination: No
 Surface Water Contamination: No
 Ground Water Contamination: No
 Remediation Type: Not reported
 Surface Water Remediation: Not reported
 GW Remediation Type: Not reported
 Maj. Contaminant: Mercury
 High Concentration: Not reported
 High Concentration Units: Not reported
 Institutional Control: Not reported
 Engineering Control: Not reported
 Voluntary Cleanups: VEP

Actual:
33 ft.

VCP:
 Voluntary Cleanup VEP or BF: VEP

Count: 7 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BAY SAINT LOUIS	S116273966	STENNIS SPACE CENTER	J ROAD & OLD HIGHWAY 43		RGA LUST
STENNIS SPACE CENTER	1016036925	STENNIS SPACE CENTER BUILDING B 81	B 8130 TRENT LOTT PARKWAY	39529	FINDS
STENNIS SPACE CENTER	S111319821	STENNIS SPACE CENTER BUILDING B 81	B 8130 TRENT LOTT PARKWAY	39529	ASBESTOS
STENNIS SPACE CENTER	S112833818	STENNIS SPACE CENTER	BUILDING 1000, TRENT LOTT PARK	39529	ASBESTOS
STENNIS SPACE CENTER	S110630239	STENNIS SPACE CENTER BUILDING 7001	BUILDING 7001, TRENT LOTT BUIL	39529	ASBESTOS
STENNIS SPACE CENTER	1016018116	MDOT, STENNIS SPACE CENTER CONSTRU	EDWARDS BAYOU STENNIS AIRPORT	39529	FINDS
STENNIS SPACE CENTER	S117670961	STENNIS SPACE CENTER LEVEE REHABIL	SHUTTLE PARKWAY	39529	PERMITS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 08/05/2016	Source: EPA
Date Data Arrived at EDR: 10/05/2016	Telephone: N/A
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 01/05/2017
Number of Days to Update: 93	Next Scheduled EDR Contact: 04/17/2017
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 08/05/2016	Source: EPA
Date Data Arrived at EDR: 10/05/2016	Telephone: N/A
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 01/05/2017
Number of Days to Update: 93	Next Scheduled EDR Contact: 04/17/2017
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 08/05/2016	Source: EPA
Date Data Arrived at EDR: 10/05/2016	Telephone: N/A
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 01/05/2017
Number of Days to Update: 93	Next Scheduled EDR Contact: 04/17/2017
	Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 09/14/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/04/2016	Telephone: 703-603-8704
Date Made Active in Reports: 10/21/2016	Last EDR Contact: 01/05/2017
Number of Days to Update: 17	Next Scheduled EDR Contact: 04/17/2017
	Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/10/2016	Source: EPA
Date Data Arrived at EDR: 10/20/2016	Telephone: 800-424-9346
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 01/06/2017
Number of Days to Update: 78	Next Scheduled EDR Contact: 05/01/2017
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 10/10/2016	Source: EPA
Date Data Arrived at EDR: 10/20/2016	Telephone: 800-424-9346
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 01/06/2017
Number of Days to Update: 78	Next Scheduled EDR Contact: 05/01/2017
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/12/2016	Source: EPA
Date Data Arrived at EDR: 09/28/2016	Telephone: 800-424-9346
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 12/28/2016
Number of Days to Update: 100	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/28/2016	Telephone: (404) 562-8651
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 12/28/2016
Number of Days to Update: 100	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/28/2016	Telephone: (404) 562-8651
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 12/28/2016
Number of Days to Update: 100	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/28/2016	Telephone: (404) 562-8651
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 12/28/2016
Number of Days to Update: 100	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/28/2016	Telephone: (404) 562-8651
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 12/28/2016
Number of Days to Update: 100	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015	Source: Department of the Navy
Date Data Arrived at EDR: 05/29/2015	Telephone: 843-820-7326
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 11/18/2016
Number of Days to Update: 13	Next Scheduled EDR Contact: 02/27/2017
	Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 05/09/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/01/2016	Telephone: 703-603-0695
Date Made Active in Reports: 09/02/2016	Last EDR Contact: 11/29/2016
Number of Days to Update: 93	Next Scheduled EDR Contact: 03/13/2017
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 05/09/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/01/2016	Telephone: 703-603-0695
Date Made Active in Reports: 09/02/2016	Last EDR Contact: 11/29/2016
Number of Days to Update: 93	Next Scheduled EDR Contact: 03/13/2017
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/26/2016
Date Data Arrived at EDR: 09/29/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 43

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: CERCLA/Uncontrolled Sites File List

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 09/01/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 10/19/2016
Number of Days to Update: 21

Source: Department of Environmental Quality
Telephone: 601-961-5666
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Landfills

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/10/2015
Date Data Arrived at EDR: 11/25/2015
Date Made Active in Reports: 01/13/2016
Number of Days to Update: 49

Source: Department of Environmental Quality
Telephone: 601-961-5082
Last EDR Contact: 11/23/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Semi-Annually

DEBRIS: Debris Site Locations Listing

A listing of Hurricane Katrina debris disposal site locations. Not all of these sites were approved or utilized. Please note that the list includes a number of different types of sites including vegetative debris burn, chip, staging and disposal sites as well as structural debris staging and disposal sites.

Date of Government Version: 06/17/2008
Date Data Arrived at EDR: 06/17/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 44

Source: Department of Environmental Quality
Telephone: 601-961-5726
Last EDR Contact: 11/17/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Varies

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 09/27/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 10/19/2016
Number of Days to Update: 21

Source: Department of Environmental Quality
Telephone: 601-961-5058
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016	Source: EPA, Region 5
Date Data Arrived at EDR: 04/27/2016	Telephone: 312-886-7439
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 37	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016	Source: EPA Region 10
Date Data Arrived at EDR: 01/08/2016	Telephone: 206-553-2857
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 41	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/27/2016	Telephone: 415-972-3372
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 37	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015	Source: EPA Region 8
Date Data Arrived at EDR: 10/23/2015	Telephone: 303-312-6271
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 118	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015	Source: EPA Region 7
Date Data Arrived at EDR: 02/12/2016	Telephone: 913-551-7003
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 112	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015	Source: EPA Region 6
Date Data Arrived at EDR: 02/19/2016	Telephone: 214-665-6597
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 105	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016	Source: EPA Region 4
Date Data Arrived at EDR: 04/29/2016	Telephone: 404-562-8677
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 35	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015	Source: EPA Region 1
Date Data Arrived at EDR: 10/29/2015	Telephone: 617-918-1313
Date Made Active in Reports: 01/04/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 67	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Varies

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010	Source: FEMA
Date Data Arrived at EDR: 02/16/2010	Telephone: 202-646-5797
Date Made Active in Reports: 04/12/2010	Last EDR Contact: 10/11/2016
Number of Days to Update: 55	Next Scheduled EDR Contact: 01/23/2017
	Data Release Frequency: Varies

UST: Underground Storage Tanks
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 09/27/2016	Source: Department of Environmental Quality
Date Data Arrived at EDR: 09/28/2016	Telephone: 601-961-5058
Date Made Active in Reports: 10/19/2016	Last EDR Contact: 12/28/2016
Number of Days to Update: 21	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Quarterly

AST: Aboveground Storage Tanks
Aboveground storage tanks regulated by the Department of Agriculture & Commerce. The tanks contents will be gasoline, diesel, racing fuel or kerosene.

Date of Government Version: 09/13/2016	Source: Department of Agriculture & Commerce
Date Data Arrived at EDR: 09/16/2016	Telephone: 601-359-1101
Date Made Active in Reports: 10/19/2016	Last EDR Contact: 11/21/2016
Number of Days to Update: 33	Next Scheduled EDR Contact: 03/06/2017
	Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015	Source: EPA Region 5
Date Data Arrived at EDR: 11/13/2015	Telephone: 312-886-6136
Date Made Active in Reports: 01/04/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 52	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 10/29/2015	Telephone: 617-918-1313
Date Made Active in Reports: 01/04/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 67	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016	Source: EPA Region 10
Date Data Arrived at EDR: 01/08/2016	Telephone: 206-553-2857
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 41	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016	Source: EPA Region 4
Date Data Arrived at EDR: 04/29/2016	Telephone: 404-562-9424
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 35	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Semi-Annually

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015	Source: EPA Region 6
Date Data Arrived at EDR: 02/04/2016	Telephone: 214-665-7591
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 120	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Semi-Annually

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016	Source: EPA Region 8
Date Data Arrived at EDR: 02/05/2016	Telephone: 303-312-6137
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 119	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014	Source: EPA Region 7
Date Data Arrived at EDR: 11/25/2014	Telephone: 913-551-7003
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 10/28/2016
Number of Days to Update: 65	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016	Source: EPA Region 9
Date Data Arrived at EDR: 04/27/2016	Telephone: 415-972-3368
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 10/28/2016
Number of Days to Update: 37	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal institutional control / engineering control registries

ENG CONTROLS: Sites with Engineering Controls

Sites included on the CERCLA/Uncontrolled Sites File List that have Engineering Controls. Engineering Controls encompass a variety of engineered remedies to contain and/or reduce contamination, and/or physical barriers intended to limit access to property. ECs include fences, signs, guards, landfill caps, provision of potable water, slurry walls, sheet pile (vertical caps), pumping and treatment of groundwater, monitoring wells, and vapor extraction systems

Date of Government Version: 09/01/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 10/19/2016
Number of Days to Update: 21

Source: Department of Environmental Quality
Telephone: 601-961-5666
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

INST CONTROL: Sites with Institutional Controls

Sites included on the CERCLA/Uncontrolled Sites File List that have Institutional Controls. Institutional Controls are non-engineered instruments, such as administrative and/or legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land or resource use

Date of Government Version: 09/01/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 10/19/2016
Number of Days to Update: 21

Source: Department of Environmental Quality
Telephone: 601-961-5666
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/27/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

VCP: Voluntary Evaluation Program Sites

The Voluntary Evaluation Program allows accepted parties the opportunity to participate in a program that will expedite the evaluation of the site information.

Date of Government Version: 09/01/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 10/19/2016
Number of Days to Update: 21

Source: Department of Environmental Quality
Telephone: 601-961-5063
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Uncontrolled Sites List

A listing of sites from the Uncontrolled Sites List that are currently in the Mississippi Brownfields Program (which means that they are pursuing liability protection and paying for MDEQ oversight costs).

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/01/2016
Date Data Arrived at EDR: 09/28/2016
Date Made Active in Reports: 10/19/2016
Number of Days to Update: 21

Source: Department of Environmental Quality
Telephone: 601-961-5666
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 09/20/2016
Date Data Arrived at EDR: 09/21/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 51

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/20/2016
Next Scheduled EDR Contact: 04/03/2017
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: Mississippi Recycling Directory

A listing of recycling facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 05/30/2014
Date Made Active in Reports: 06/25/2014
Number of Days to Update: 26

Source: Department of Environmental Quality
Telephone: 601-961-5005
Last EDR Contact: 11/23/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Varies

SWTIRE: Commercial Waste Tire Haulers

A listing of commercial waste tire haulers.

Date of Government Version: 08/12/2016
Date Data Arrived at EDR: 08/16/2016
Date Made Active in Reports: 10/19/2016
Number of Days to Update: 64

Source: Department of Environmental Quality
Telephone: 601-961-5726
Last EDR Contact: 11/07/2016
Next Scheduled EDR Contact: 02/20/2017
Data Release Frequency: Quarterly

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/31/2016
Next Scheduled EDR Contact: 02/13/2017
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/24/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 11/04/2016
Next Scheduled EDR Contact: 02/13/2017
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/31/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 17

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/29/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 10/28/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Varies

Records of Emergency Release Reports

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/27/2016	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 06/28/2016	Telephone: 202-366-4555
Date Made Active in Reports: 09/23/2016	Last EDR Contact: 12/28/2016
Number of Days to Update: 87	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Annually

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/12/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/28/2016	Telephone: (404) 562-8651
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 12/28/2016
Number of Days to Update: 100	Next Scheduled EDR Contact: 04/10/2017
	Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 07/08/2015	Telephone: 202-528-4285
Date Made Active in Reports: 10/13/2015	Last EDR Contact: 12/08/2016
Number of Days to Update: 97	Next Scheduled EDR Contact: 03/20/2017
	Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 01/13/2017
Number of Days to Update: 62	Next Scheduled EDR Contact: 04/24/2017
	Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 01/13/2017
Number of Days to Update: 339	Next Scheduled EDR Contact: 04/24/2017
	Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/17/2016
Next Scheduled EDR Contact: 11/28/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 07/12/2016
Date Data Arrived at EDR: 08/17/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 65

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 11/16/2016
Next Scheduled EDR Contact: 02/27/2017
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/08/2016
Next Scheduled EDR Contact: 02/20/2017
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/11/2016
Next Scheduled EDR Contact: 02/20/2017
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/23/2016
Next Scheduled EDR Contact: 04/03/2017
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/22/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/24/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/06/2016
Next Scheduled EDR Contact: 03/20/2017
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 11/18/2016
Next Scheduled EDR Contact: 02/06/2017
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 10/17/2014	Telephone: 202-564-6023
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 11/07/2016
Number of Days to Update: 3	Next Scheduled EDR Contact: 02/20/2017
	Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/20/2016	Source: EPA
Date Data Arrived at EDR: 04/28/2016	Telephone: 202-566-0500
Date Made Active in Reports: 09/02/2016	Last EDR Contact: 01/13/2017
Number of Days to Update: 127	Next Scheduled EDR Contact: 04/24/2017
	Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/27/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/05/2016	Telephone: 202-564-5088
Date Made Active in Reports: 10/21/2016	Last EDR Contact: 01/09/2017
Number of Days to Update: 77	Next Scheduled EDR Contact: 04/24/2017
	Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 11/17/2016
Number of Days to Update: 25	Next Scheduled EDR Contact: 03/06/2017
	Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 11/17/2016
Number of Days to Update: 25	Next Scheduled EDR Contact: 03/06/2017
	Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 09/08/2016	Telephone: 301-415-7169
Date Made Active in Reports: 10/21/2016	Last EDR Contact: 11/07/2016
Number of Days to Update: 43	Next Scheduled EDR Contact: 02/20/2017
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005	Source: Department of Energy
Date Data Arrived at EDR: 08/07/2009	Telephone: 202-586-8719
Date Made Active in Reports: 10/22/2009	Last EDR Contact: 12/06/2016
Number of Days to Update: 76	Next Scheduled EDR Contact: 03/20/2017
	Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/10/2014	Telephone: N/A
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 12/06/2016
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/20/2017
	Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/19/2011	Telephone: 202-566-0517
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 10/28/2016
Number of Days to Update: 83	Next Scheduled EDR Contact: 02/06/2017
	Data Release Frequency: Varies

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/03/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/05/2016	Telephone: 202-343-9775
Date Made Active in Reports: 10/21/2016	Last EDR Contact: 01/06/2017
Number of Days to Update: 16	Next Scheduled EDR Contact: 04/17/2017
	Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2007
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transportation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 11/02/2016
Next Scheduled EDR Contact: 02/13/2017
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 53

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/09/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 11/23/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/21/2016
Date Data Arrived at EDR: 07/26/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 59

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 11/08/2016
Next Scheduled EDR Contact: 02/20/2017
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/09/2016
Next Scheduled EDR Contact: 12/05/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 03/07/2016
Date Data Arrived at EDR: 04/07/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 148

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 01/05/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 06/30/2016
Date Data Arrived at EDR: 07/25/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 88

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/22/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 06/30/2016
Date Data Arrived at EDR: 07/25/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 88

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/22/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 22

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 12/01/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 12/12/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 12/02/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/15/2016
Date Data Arrived at EDR: 09/07/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 65

Source: EPA
Telephone: (404) 562-9900
Last EDR Contact: 12/06/2016
Next Scheduled EDR Contact: 03/20/2017
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 12/05/2016
Next Scheduled EDR Contact: 01/30/2017
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 11/28/2016
Next Scheduled EDR Contact: 03/13/2017
Data Release Frequency: Varies

AIRS: Air Quality Information Listing

Air emissions information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/18/2016
Date Made Active in Reports: 05/19/2016
Number of Days to Update: 62

Source: Department of Environmental Quality
Telephone: 601-961-5276
Last EDR Contact: 01/17/2017
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Annually

ASBESTOS: Asbestos Project Listing

A listing of Air Division Asbestos Branch projects.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/01/2016
Date Made Active in Reports: 08/22/2016
Number of Days to Update: 21

Source: Department of Environmental Quality
Telephone: 601-961-5611
Last EDR Contact: 12/27/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

DRYCLEANERS: Drycleaner Facilities Listing

A listing of drycleaner facilities.

Date of Government Version: 02/18/2016
Date Data Arrived at EDR: 02/23/2016
Date Made Active in Reports: 03/21/2016
Number of Days to Update: 27

Source: Department of Environmental Quality
Telephone: 601-961-5670
Last EDR Contact: 11/11/2016
Next Scheduled EDR Contact: 02/27/2017
Data Release Frequency: Varies

NPDES: Industrial & Municipal NPDES Facilities

Water discharge permit data.

Date of Government Version: 09/09/2016
Date Data Arrived at EDR: 09/09/2016
Date Made Active in Reports: 10/19/2016
Number of Days to Update: 40

Source: Department of Environmental Quality
Telephone: 601-961-5666
Last EDR Contact: 11/11/2016
Next Scheduled EDR Contact: 02/27/2017
Data Release Frequency: Quarterly

PERMITS: Environmental Site Information System Listing

The purpose of this system is to support the permitting and compliance activities of the Office of Pollution Control. Regulatory programs that are supported by this database are the Surface Water National Pollutant Discharge Elimination System (NPDES) Program; the Air Title V, Construction and Operating Programs; and the Solid and Hazardous Waste Programs.

Date of Government Version: 09/09/2016
Date Data Arrived at EDR: 09/09/2016
Date Made Active in Reports: 10/19/2016
Number of Days to Update: 40

Source: The Office of Pollution Control
Telephone: 601-961-5670
Last EDR Contact: 11/11/2016
Next Scheduled EDR Contact: 02/27/2017
Data Release Frequency: Quarterly

UIC: UIC Information

A listing of underground injection control wells.

Date of Government Version: 08/22/2016
Date Data Arrived at EDR: 09/16/2016
Date Made Active in Reports: 10/19/2016
Number of Days to Update: 33

Source: State Oil & Gas Board
Telephone: 601-576-4923
Last EDR Contact: 12/12/2016
Next Scheduled EDR Contact: 03/27/2017
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/18/2016
Date Data Arrived at EDR: 09/20/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 12/20/2016
Next Scheduled EDR Contact: 04/03/2017
Data Release Frequency: Quarterly

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/13/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 81

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/09/2016
Next Scheduled EDR Contact: 03/27/2017
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/22/2016
Date Data Arrived at EDR: 08/23/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 59

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/22/2016
Next Scheduled EDR Contact: 03/06/2017
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Mississippi.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 191

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Mississippi.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/20/2014
Number of Days to Update: 203

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Mississippi.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 10/01/2016
Date Data Arrived at EDR: 11/02/2016
Date Made Active in Reports: 01/04/2017
Number of Days to Update: 63

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 11/02/2016
Next Scheduled EDR Contact: 02/13/2017
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2015

Date Data Arrived at EDR: 07/22/2016

Date Made Active in Reports: 11/22/2016

Number of Days to Update: 123

Source: Department of Environmental Protection

Telephone: 717-783-8990

Last EDR Contact: 01/12/2017

Next Scheduled EDR Contact: 05/01/2017

Data Release Frequency: Annually

Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data

Source: PennWell Corporation

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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Child Care Listing

Source: Department of Health

Telephone: 601-576-7613

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: US Fish & Wildlife Service
Telephone: 703-358-2171

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK® - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

NASA - JOHN C. STENNIS SPACE CENTER
C ROAD
STENNIS SPACE CENTER, MS 39529

TARGET PROPERTY COORDINATES

Latitude (North): 30.403759 - 30° 24' 13.53"
Longitude (West): 89.621386 - 89° 37' 16.99"
Universal Transverse Mercator: Zone 16
UTM X (Meters): 248154.8
UTM Y (Meters): 3366261.8
Elevation: 26 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map: 5630541 DEAD TIGER CREEK, MS
Version Date: 2012

Northwest Map: 5637371 NICHOLSON, MS
Version Date: 2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

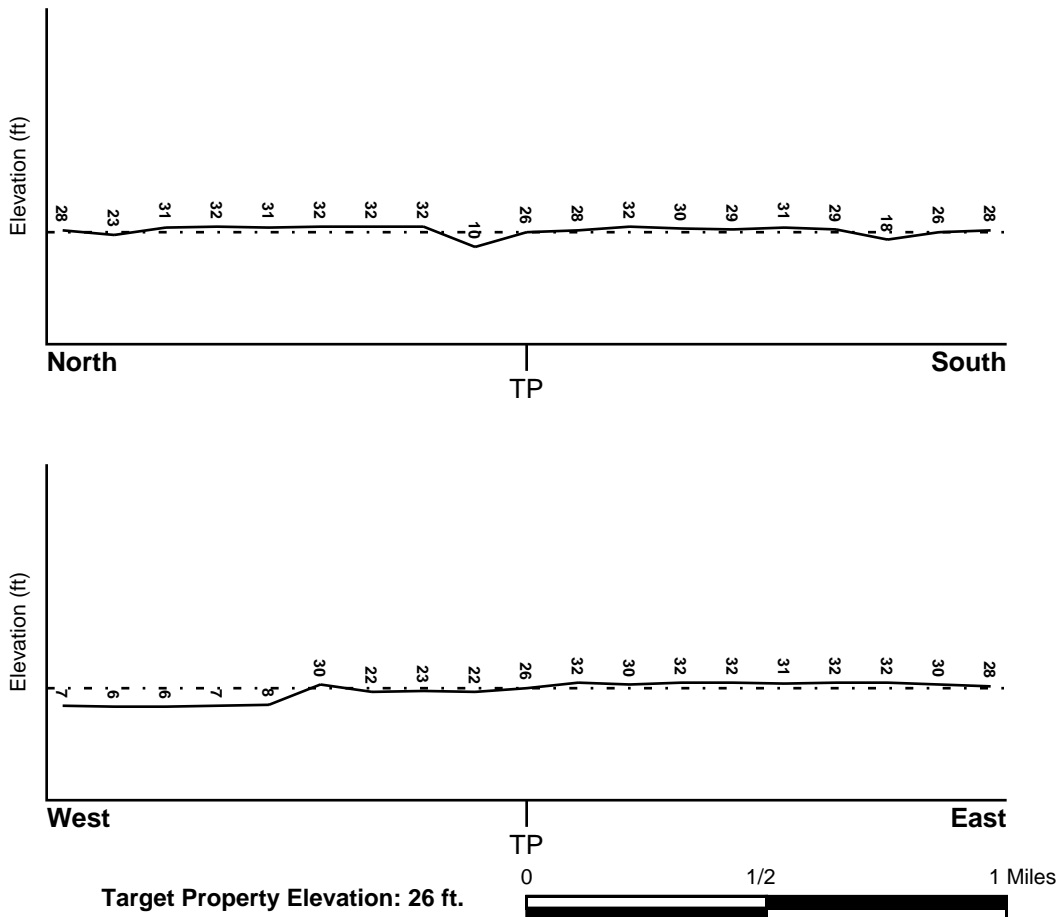
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General West

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
28045C0215D	FEMA FIRM Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
28045C0195D	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
DEAD TIGER CREEK	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

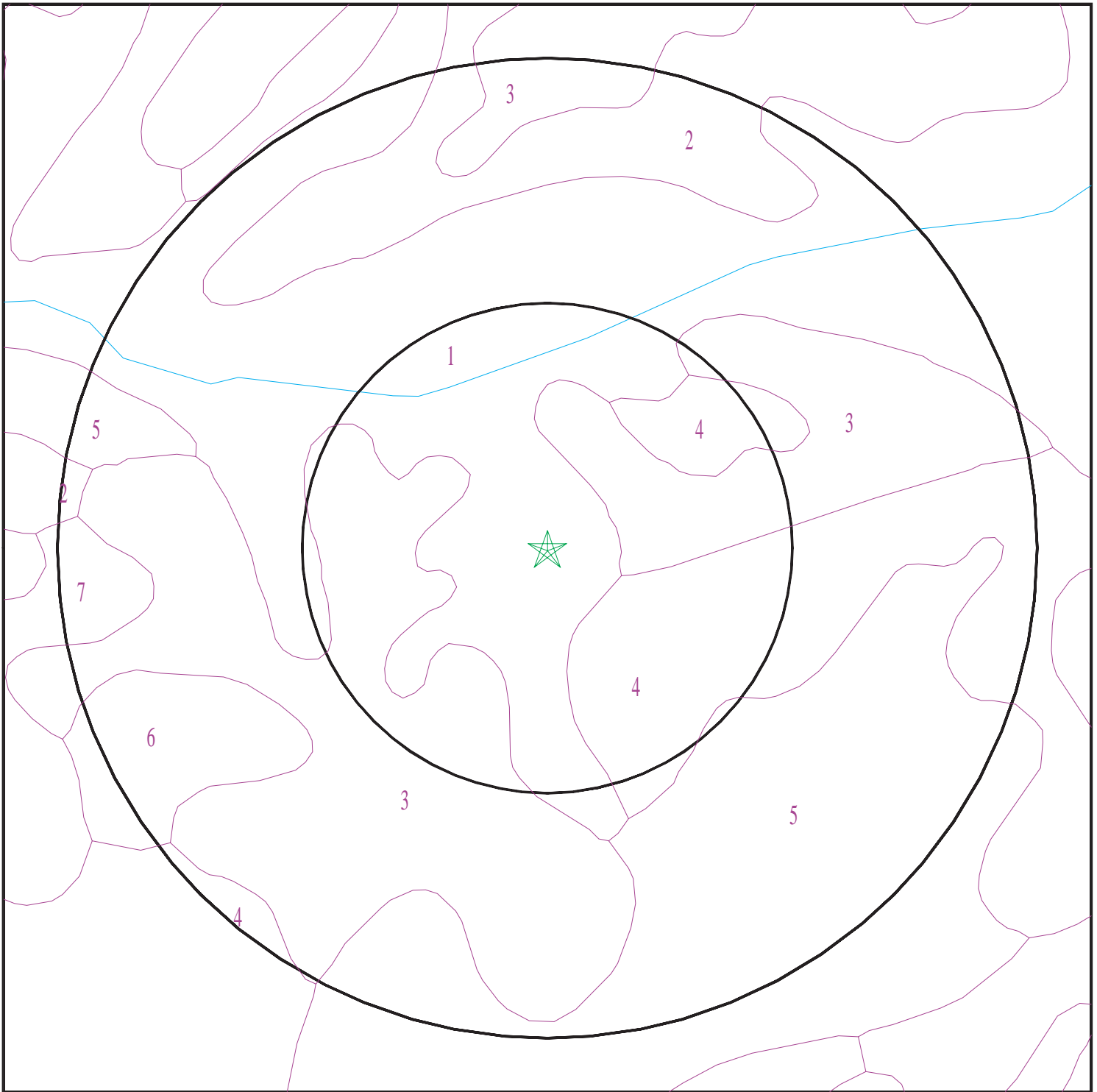
Era: Cenozoic
System: Quaternary
Series: Holocene
Code: Qh (*decoded above as Era, System & Series*)

GEOLOGIC AGE IDENTIFICATION

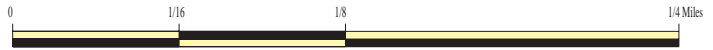
Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4830950.2s



- ★ Target Property
- ∩ SSURGO Soil
- ∩ Water



SITE NAME: NASA - John C. Stennis Space Center
ADDRESS: C Road
Stennis Space Center MS 39529
LAT/LONG: 30.403759 / 89.621386

CLIENT: Larson Environmental, LLC
CONTACT: Lars Larson
INQUIRY #: 4830950.2s
DATE: January 18, 2017 2:47 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: SMITHTON

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 15 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	fine sandy loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	7 inches	38 inches		Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
3	48 inches	59 inches		Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 5.5 Min: 4.5
4	38 inches	48 inches		Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 5.5 Min: 4.5

Soil Map ID: 2

Soil Component Name: EUSTIS

Soil Surface Texture: loamy fine sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	loamy fine sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 5.5 Min: 4.5
2	5 inches	25 inches		Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 5.5 Min: 4.5
3	25 inches	68 inches		Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 5.5 Min: 4.5
4	68 inches	85 inches		Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 5.5 Min: 4.5

Soil Map ID: 3

Soil Component Name: POARCH

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 114 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	fine sandy loam	Not reported	Not reported	Max: 42.34 Min: 14.11	Max: 5.5 Min: 4.5

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
2	7 inches	35 inches		Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
3	35 inches	59 inches		Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 5.5 Min: 4.5

Soil Map ID: 4

Soil Component Name: HARLESTON

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 76 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	fine sandy loam	Not reported	Not reported	Max: 42.34 Min: 4.23	Max: 5.5 Min: 3.6
2	7 inches	29 inches		Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
3	29 inches	59 inches		Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5

Soil Map ID: 5

Soil Component Name: ATMORE

Soil Surface Texture: silt loam

Hydrologic Group: Class B/D - Drained/undrained hydrology class of soils that can be drained and are classified.

Soil Drainage Class: Poorly drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 15 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	16 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
2	16 inches	38 inches		Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
3	38 inches	59 inches		Not reported	Not reported	Max: 4.23 Min: 1.41	Max: 5.5 Min: 3.6

Soil Map ID: 6

Soil Component Name: ESCAMBIA

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 61 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	14 inches	loam	Not reported	Not reported	Max: 42.34 Min: 14.11	Max: 5.5 Min: 3.6
2	14 inches	33 inches		Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
3	33 inches	59 inches		Not reported	Not reported	Max: 4.23 Min: 0.42	Max: 5.5 Min: 3.6

Soil Map ID: 7

Soil Component Name: SAUCIER

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 99 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	fine sandy loam	Not reported	Not reported	Max: 42.34 Min: 14.11	Max: 5.5 Min: 3.6
2	9 inches	40 inches		Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
3	40 inches	46 inches		Not reported	Not reported	Max: 1.41 Min: 0.42	Max: 5.5 Min: 3.6
4	46 inches	59 inches		Not reported	Not reported	Max: 1.41 Min: 0.42	Max: 5.5 Min: 3.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A3	USGS40000610263	1/8 - 1/4 Mile East
B6	USGS40000610275	1/4 - 1/2 Mile East
C10	USGS40000609954	1/2 - 1 Mile SSE
D12	USGS40000610417	1/2 - 1 Mile WNW
E15	USGS40000610041	1/2 - 1 Mile SE
F16	USGS40000610262	1/2 - 1 Mile East
G20	USGS40000610441	1/2 - 1 Mile WNW
H23	USGS40000609636	1/2 - 1 Mile South

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

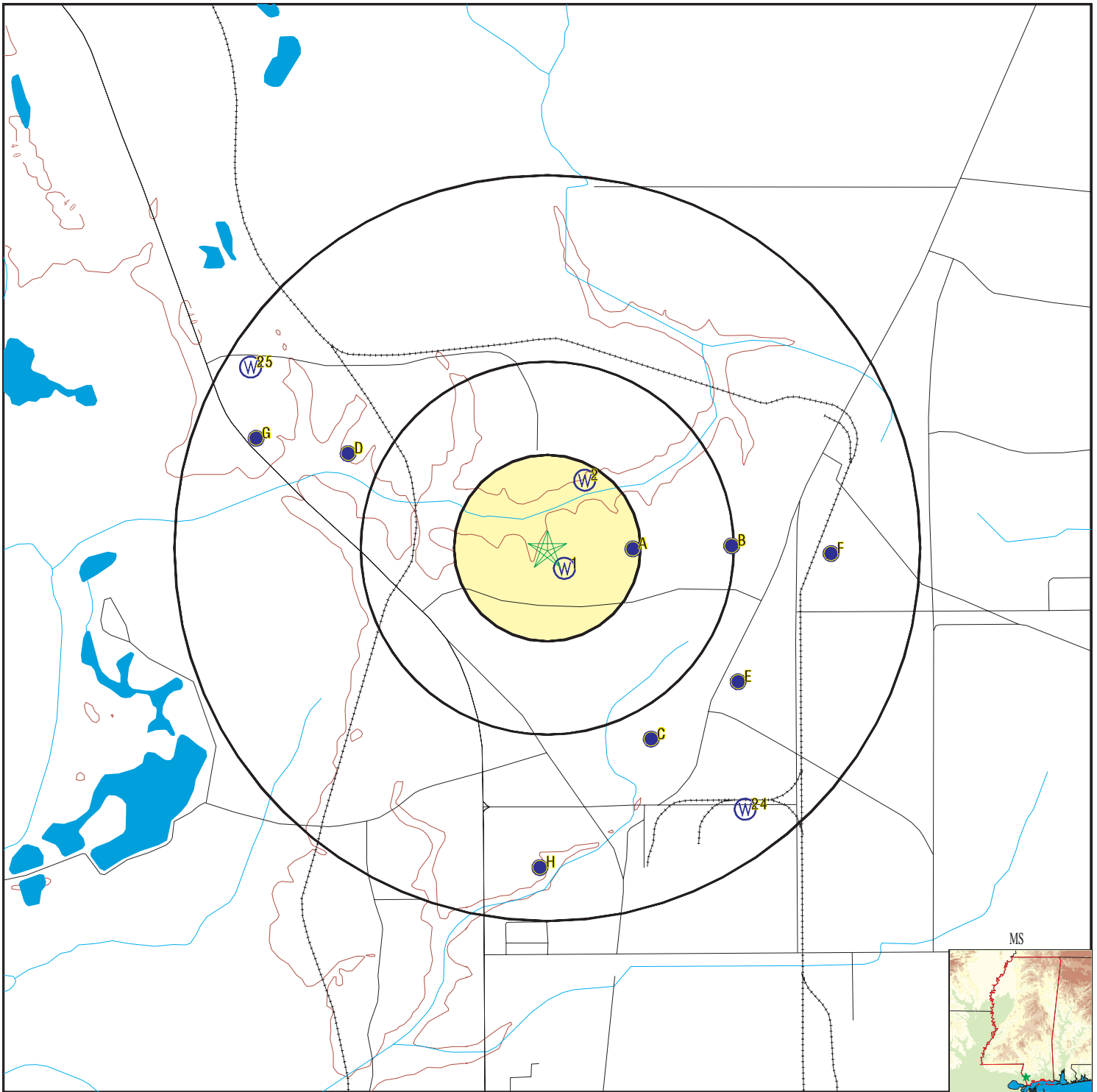
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	MSH300000000137	0 - 1/8 Mile SE
2	MSC300000035652	1/8 - 1/4 Mile NNE
A4	MSH300000000138	1/8 - 1/4 Mile East
A5	MSC300000035634	1/8 - 1/4 Mile East
B7	MSC300000035633	1/4 - 1/2 Mile East
C8	MSC300000035625	1/2 - 1 Mile SSE
C9	MSPR30000001712	1/2 - 1 Mile SSE
D11	MSPR30000001993	1/2 - 1 Mile WNW
D13	MSC300000035615	1/2 - 1 Mile WNW
E14	MSC300000035632	1/2 - 1 Mile SE
F17	MSPR30000001894	1/2 - 1 Mile East
F18	MSC300000035616	1/2 - 1 Mile East
G19	MSC300000035640	1/2 - 1 Mile WNW
H21	MSC300000035624	1/2 - 1 Mile South
H22	MSPR30000001503	1/2 - 1 Mile South
24	MSC300000036091	1/2 - 1 Mile SE
25	MSC300000035651	1/2 - 1 Mile WNW

PHYSICAL SETTING SOURCE MAP - 4830950.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons



- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Oil, gas or related wells



SITE NAME: NASA - John C. Stennis Space Center
 ADDRESS: C Road
 Stennis Space Center MS 39529
 LAT/LONG: 30.403759 / 89.621386

CLIENT: Larson Environmental, LLC
 CONTACT: Lars Larson
 INQUIRY #: 4830950.2s
 DATE: January 18, 2017 2:47 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

1
SE
0 - 1/8 Mile
Higher

MS WELLS MSH30000000137

Wellid:	230052-02	Name:	MISS ARMY AMMUNITION PLANT
Latn:	302410	Longn:	893714
Type 1:	P	Cnty:	HANCOCK
Fips:	45	Region:	1
Coname:	Hancock	Site id:	MSH30000000137

2
NNE
1/8 - 1/4 Mile
Lower

MS WELLS MSC300000035652

Fid:	35652	County nam:	HANCOCK
Permit num:	Not Reported	Fip well:	045E2014
Doh number:	Not Reported	Aquifer:	Not Reported
Use:	COMMERCIAL		
Owner name:	CHAMBERLAIN, MASON		
Section:	29	Township:	07S
Range:	16W		
Latdd:	30.4064		
Longdd:	-89.6197		
Casing dia:	2		
Casing len:	590		
Screen len:	10		
Well depth:	600		
Site id:	MSC300000035652		

A3
East
1/8 - 1/4 Mile
Higher

FED USGS USGS40000610263

Org. Identifier:	USGS-MS		
Formal name:	USGS Mississippi Water Science Center		
Monloc Identifier:	USGS-302412089370301		
Monloc name:	E0044 HANCOCK		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	03170009	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	30.4035266
Longitude:	-89.6175592	Sourcemap scale:	Not Reported
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	37.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Unknown		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	Not Reported
Construction date:	19811117	Wellholeddepth:	37
Welldepth units:	Not Reported		
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 0

**A4
East
1/8 - 1/4 Mile
Higher**

MS WELLS MSH30000000138

Wellid:	230052-01	Name:	MISS ARMY AMMUNITION PLANT
Latn:	302414	Longn:	893703
Type 1:	P	Cnty:	HANCOCK
Fips:	45	Region:	1
Coname:	Hancock	Site id:	MSH30000000138

**A5
East
1/8 - 1/4 Mile
Higher**

MS WELLS MSC300000035634

Fid:	35634	County nam:	HANCOCK
Permit num:	Not Reported	Fip well:	045E0044
Doh number:	Not Reported	Aquifer:	Not Reported
Use:	Not Reported		
Owner name:	US ARMY	Township:	07S
Section:	29		
Range:	16W		
Latdd:	30.4036		
Longdd:	-89.6175		
Casing dia:	0		
Casing len:	0		
Screen len:	0		
Well depth:	0		
Site id:	MSC300000035634		

**B6
East
1/4 - 1/2 Mile
Higher**

FED USGS USGS40000610275

Org. Identifier:	USGS-MS	Drainagearea value:	Not Reported
Formal name:	USGS Mississippi Water Science Center	Contrib drainagearea:	Not Reported
Monloc Identifier:	USGS-302413089364701	Latitude:	30.4038044
Monloc name:	E0043 HANCOCK	Sourcemap scale:	Not Reported
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	03170009		
Drainagearea Units:	Not Reported		
Contrib drainagearea units:	Not Reported		
Longitude:	-89.6131145		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refs:	NAD83	Vert measure val:	30.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Unknown		
Vert coord refs:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19811117	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	48
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

**B7
East
1/4 - 1/2 Mile
Higher**

MS WELLS MSC300000035633

Fid:	35633	County nam:	HANCOCK
Permit num:	Not Reported	Fip well:	045E0043
Doh number:	Not Reported	Aquifer:	Not Reported
Use:	Not Reported		
Owner name:	US ARMY		
Section:	29	Township:	07S
Range:	16W		
Latdd:	30.4039		
Longdd:	-89.6131		
Casing dia:	0		
Casing len:	0		
Screen len:	0		
Well depth:	0		
Site id:	MSC300000035633		

**C8
SSE
1/2 - 1 Mile
Higher**

MS WELLS MSC300000035625

Fid:	35625	County nam:	HANCOCK
Permit num:	Not Reported	Fip well:	045E0032
Doh number:	Not Reported	Aquifer:	MIOCENE
Use:	DOMESTIC		
Owner name:	SEAL, C C		
Section:	32	Township:	07S
Range:	16W		
Latdd:	30.3964		
Longdd:	-89.6167		
Casing dia:	2		
Casing len:	0		
Screen len:	0		
Well depth:	384		
Site id:	MSC300000035625		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

C9
SSE
1/2 - 1 Mile
Higher

MS WELLS MSPR30000001712

Latn:	302346	Longn:	893700
Local no:	E032	Use 1:	H
Aquifer:	122MOCN	Depth:	384
County:	HANCOCK	Fips:	45
Site id:	MSPR30000001712		

C10
SSE
1/2 - 1 Mile
Higher

FED USGS USGS40000609954

Org. Identifier:	USGS-MS		
Formal name:	USGS Mississippi Water Science Center		
Monloc Identifier:	USGS-302346089370001		
Monloc name:	E0032 HANCOCK		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	03180004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	30.3963045
Longitude:	-89.6167257	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	minutes
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	Coastal lowlands aquifer system		
Formation type:	Miocene Series		
Aquifer type:	Not Reported		
Construction date:	19700101	Welldepth:	384
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel

1970-03-01	42.00	

D11
WNW
1/2 - 1 Mile
Lower

MS WELLS MSPR30000001993

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Latn:	302426	Longn:	893749
Local no:	E018	Use 1:	H
Aquifer:	122MOCN	Depth:	980
County:	HANCOCK	Fips:	45
Site id:	MSPR30000001993		

**D12
WNW
1/2 - 1 Mile
Lower**

FED USGS USGS40000610417

Org. Identifier:	USGS-MS		
Formal name:	USGS Mississippi Water Science Center		
Monloc Identifier:	USGS-302426089374901		
Monloc name:	E0018 HANCOCK		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	03180004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	30.4074154
Longitude:	-89.6303375	Sourcemap scale:	Not Reported
Horiz Acc measure:	1	Horiz Acc measure units:	minutes
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	30.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Coastal lowlands aquifer system		
Formation type:	Miocene Series		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	980
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
----- 1964-07-01	-57.00	

**D13
WNW
1/2 - 1 Mile
Lower**

MS WELLS MSC300000035615

Fid:	35615	County nam:	HANCOCK
Permit num:	Not Reported	Fip well:	045E0018
Doh number:	Not Reported	Aquifer:	MIOCENE
Use:	DOMESTIC		
Owner name:	NASA MTF		
Section:	30	Township:	07S
Range:	16W		
Latdd:	30.4075		
Longdd:	-89.6303		
Casing dia:	0		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Casing len: 0
 Screen len: 0
 Well depth: 980
 Site id: MSC300000035615

E14
SE
1/2 - 1 Mile
Higher

MS WELLS MSC300000035632

Fid:	35632	County nam:	HANCOCK
Permit num:	Not Reported	Fip well:	045E0042
Doh number:	Not Reported	Aquifer:	Not Reported
Use:	Not Reported		
Owner name:	US ARMY		
Section:	32	Township:	07S
Range:	16W		
Latdd:	30.3986		
Longdd:	-89.6128		
Casing dia:	0		
Casing len:	0		
Screen len:	0		
Well depth:	0		
Site id:	MSC300000035632		

E15
SE
1/2 - 1 Mile
Higher

FED USGS USGS40000610041

Org. Identifier:	USGS-MS		
Formal name:	USGS Mississippi Water Science Center		
Monloc Identifier:	USGS-302354089364601		
Monloc name:	E0042 HANCOCK		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	03170009	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	30.3985267
Longitude:	-89.6128367	Sourcemap scale:	Not Reported
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	32.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Unknown		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19811117	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	38
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

F16
East
1/2 - 1 Mile
Higher

FED USGS USGS40000610262

Org. Identifier:	USGS-MS		
Formal name:	USGS Mississippi Water Science Center		
Monloc Identifier:	USGS-302412089363101		
Monloc name:	E0019 HANCOCK		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	03170009	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	30.4035266
Longitude:	-89.6086699	Sourcemap scale:	Not Reported
Horiz Acc measure:	10	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	30.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Coastal lowlands aquifer system		
Formation type:	Miocene Series		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	930
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

	Feet below	Feet to
Date	Surface	Sealevel

1964-07-01	-58.00	

F17
East
1/2 - 1 Mile
Higher

MS WELLS MSPR30000001894

Latn:	302412	Longn:	893631
Local no:	E019	Use 1:	H
Aquifer:	122MOCN	Depth:	930
County:	HANCOCK	Fips:	45
Site id:	MSPR30000001894		

F18
East
1/2 - 1 Mile
Higher

MS WELLS MSC300000035616

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Fid:	35616	County nam:	HANCOCK
Permit num:	Not Reported	Fip well:	045E0019
Doh number:	Not Reported	Aquifer:	MIOCENE
Use:	DOMESTIC		
Owner name:	NASA MTF		
Section:	28	Township:	07S
Range:	16W		
Latdd:	30.4036		
Longdd:	-89.6086		
Casing dia:	0		
Casing len:	0		
Screen len:	0		
Well depth:	930		
Site id:	MSC300000035616		

**G19
WNW
1/2 - 1 Mile
Higher**

MS WELLS MSC300000035640

Fid:	35640	County nam:	HANCOCK
Permit num:	Not Reported	Fip well:	045E0050
Doh number:	Not Reported	Aquifer:	GRAHAM FERRY
Use:	UNUSED		
Owner name:	ROBERSON, ELVIE		
Section:	30	Township:	07S
Range:	16W		
Latdd:	30.4081		
Longdd:	-89.6344		
Casing dia:	0		
Casing len:	0		
Screen len:	0		
Well depth:	800		
Site id:	MSC300000035640		

**G20
WNW
1/2 - 1 Mile
Higher**

FED USGS USGS40000610441

Org. Identifier:	USGS-MS		
Formal name:	USGS Mississippi Water Science Center		
Monloc Identifier:	USGS-302428089380401		
Monloc name:	E0050 HANCOCK		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	03180004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	30.4079709
Longitude:	-89.6345044	Sourcemap scale:	Not Reported
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	30.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Coastal lowlands aquifer system		
Formation type:	Graham Ferry Formation		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	800
Construction date:	19861016	Wellholedepth:	Not Reported
Welldepth units:	ft		
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel

1986-10-16	-18.	

H21
South
1/2 - 1 Mile
Lower

MS WELLS MSC300000035624

Fid:	35624	County nam:	HANCOCK
Permit num:	Not Reported	Fip well:	045E0031
Doh number:	Not Reported	Aquifer:	MIOCENE
Use:	DOMESTIC		
Owner name:	LEE, B J		
Section:	37	Township:	07S
Range:	16W		
Latdd:	30.3914		
Longdd:	-89.6217		
Casing dia:	2		
Casing len:	0		
Screen len:	0		
Well depth:	510		
Site id:	MSC300000035624		

H22
South
1/2 - 1 Mile
Lower

MS WELLS MSPR30000001503

Latn:	302328	Longn:	893718
Local no:	E031	Use 1:	H
Aquifer:	122MOCN	Depth:	510
County:	HANCOCK	Fips:	45
Site id:	MSPR30000001503		

H23
South
1/2 - 1 Mile
Lower

FED USGS USGS40000609636

Org. Identifier:	USGS-MS		
Formal name:	USGS Mississippi Water Science Center		
Monloc Identifier:	USGS-302328089371801		
Monloc name:	E0031 HANCOCK		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	03180004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	30.3913045
Longitude:	-89.6217258	Sourcemap scale:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	1	Horiz Acc measure units:	minutes
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	Coastal lowlands aquifer system		
Formation type:	Miocene Series		
Aquifer type:	Not Reported		
Construction date:	19700101	Welldepth:	510
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel

1970-02-01	40.00	

**24
SE
1/2 - 1 Mile
Lower**

MS WELLS MSC300000036091

Fid:	36091	County nam:	HANCOCK
Permit num:	Not Reported	Fip well:	045H0043
Doh number:	0230052-01	Aquifer:	MIOCENE
Use:	INSTITUTIONAL		
Owner name:	NASA		
Section:	33	Township:	07S
Range:	16W		
Latdd:	30.3936		
Longdd:	-89.6125		
Casing dia:	20		
Casing len:	493		
Screen len:	200		
Well depth:	688		
Site id:	MSC300000036091		

**25
WNW
1/2 - 1 Mile
Higher**

MS WELLS MSC300000035651

Fid:	35651	County nam:	HANCOCK
Permit num:	Not Reported	Fip well:	045E2013
Doh number:	Not Reported	Aquifer:	Not Reported
Use:	DOMESTIC		
Owner name:	CORD, GARY		
Section:	30	Township:	07S
Range:	16W		
Latdd:	30.4108		
Longdd:	-89.6347		
Casing dia:	4		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Casing len: 803
Screen len: 15
Well depth: 818
Site id: MSC300000035651

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

State Database: MS Radon

Radon Test Results

County	Num Sites	Avg Pci/L	Max Pci/L	Median Pci/L	% > 4 Pci/L	% > 20 Pci/L
HANCOCK	11	0.5	1.4	0.3	0	0

Federal EPA Radon Zone for HANCOCK County: 3

- Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for HANCOCK COUNTY, MS

Number of sites tested: 7

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.229 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory

Source: US Fish & Wildlife Service

Telephone: 703-358-2171

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Health Department Wells

Source: Mississippi Automated Resource Information System Technical Center

Telephone: 601-432-6149

Public supply water wells monitored by the Environmental Division of the Department of Health.

Permitted Wells

Source: Mississippi Automated Resource Information System Technical Center

Telephone: 601-432-6149

Water wells, 6-inches in diameter or larger that are permitted and monitored by the Office of Land and Water Resources.

USGS Private Wells

Source: Mississippi Automated Resource Information System Technical Center

Telephone: 601-432-6149

Privately owned water wells monitored by the USGS.

USGS Public Wells

Source: Mississippi Automated Resource Information System Technical Center

Telephone: 601-432-6149

Publicly owned water wells monitored by the USGS.

OTHER STATE DATABASE INFORMATION

Oil and Gas Well Location Listing

Source: Mississippi Oil and Gas Board

Telephone: 601-354-7119

RADON

State Database: MS Radon

Source: Department of Health

Telephone: 601-987-6893

Radon Levels

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

STREET AND ADDRESS INFORMATION

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NASA - John C. Stennis Space Center

C Road

Stennis Space Center, MS 39529

Inquiry Number: 4830950.5

January 19, 2017

The EDR-City Directory Abstract

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Executive Summary

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City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1992 through 2013. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

<u>Year</u>	<u>Source</u>	<u>TP</u>	<u>Adjoining</u>	<u>Text Abstract</u>	<u>Source Image</u>
2013	Cole Information Services	-	-	-	-
2008	Cole Information Services	-	-	-	-
2003	Cole Information Services	-	-	-	-
1999	Cole Information Services	-	-	-	-
1995	Cole Information Services	-	-	-	-
1992	Cole Information Services	-	-	-	-

EXECUTIVE SUMMARY

SELECTED ADDRESSES

The following addresses were selected by the client, for EDR to research. An "X" indicates where information was identified.

<u>Address</u>	<u>Type</u>	<u>Findings</u>
Highway 607/Moses Cook Road	Client Entered	

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

C Road
Stennis Space Center, MS 39529

FINDINGS DETAIL

Target Property research detail.

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

No Addresses Found

FINDINGS

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched

C Road

Address Not Identified in Research Source

2013, 2008, 2003, 1999, 1995, 1992

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched

Highway 607/Moses Cook
Road

Address Not Identified in Research Source

2013, 2008, 2003, 1999, 1995, 1992

NASA-John C. Stennis Space Center

C Road

Stennis Space Center, Mississippi 39529

Inquiry Number: 4830950.7

January 24, 2017

EDR Environmental Lien and AUL Search



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Environmental Lien and AUL Search

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

NASA-JOHN C. STENNIS SPACE CENTER
C ROAD
STENNIS SPACE CENTER, MISSISSIPPI 39529

RESEARCH SOURCE

Source 1: Hancock Recorder
Hancock County, Mississippi

Source 2: Hancock Assessor
Hancock County, Mississippi

PROPERTY INFORMATION

Deed 1:

Title is vested in: USA

Legal Description: Section 29, T7, R16

Legal Current Owner: USA

Property Identifiers: 089-0-29-001.000

Comments: Exhibit A

Comments: Public records of Hancock County, Mississippi were searched from January 1, 1980 to January 12, 2017, and no deeds vesting title in the subject property were found of record during the period searched.

EDR Environmental Lien and AUL Search

Deed 1:

Type of Deed: Judgment
Title is vested in: Chelsea Bond, James Bond, Danny Bond, Crystal Bond Ross and Zachery Bond
Title received from: The Estate of James A. Bond, deceased
Deed Dated: August 28, 2003
Deed Recorded: September 19, 2006
Book: 2006
Page: 15146

Legal Description: Section 31, T7S, R16W
Legal Current Owner: Chelsea Bond, James Bond, Danny Bond, Crystal Bond Ross and Zachery Bond
Property Identifiers: 089-0-31-001.000
Comments: Exhibit B

Deed 1:

Title is vested in: USA

Legal Description: Section 32, T7, R16
Legal Current Owner: USA
Property Identifiers: 089-0-32-001.000
Comments: Exhibit C
Comments: Public records of Hancock County, Mississippi were searched from January 1, 1980 to January 12, 2017, and no deeds vesting title in the subject property were found of record during the period searched.

Deed 1:

Title is vested in: USA

Legal Description: Section 37, T7, R16
Legal Current Owner: USA
Property Identifiers: 089-0-37-001.000
Comments: Exhibit D
Comments: Public records of Hancock County, Mississippi were searched from January 1, 1980 to January 12, 2017, and no deeds vesting title in the subject property were found of record during the period searched.

EDR Environmental Lien and AUL Search

ENVIRONMENTAL LIEN

Environmental Lien: Found Not Found

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AUL's: Found Not Found

EDR Environmental Lien and AUL Search

DEED EXHIBIT A-D

STATE ID# 089-0-29-001.000

-----ACREAGE----- *TAX *MTG *REC JUD *EXMPT
MAP PARCEL SCT QTR TWN RNG DEEDED CALCULATED DIST CODE LOC DST CODE
Taxable: 22 07 16W *BEAT: 2 *CITY: 0 *SCHOOL: 3 *SPECIAL: 0
*OWNER CODE.... Ownership Type: _____ Status: _____
OWNER NAME.....: U S A LAST UPDATED Date: _____
IN CARE OF.....: _____ BY: _____
MAILING ADDR.....: _____
CITY/STATE/ZIP: _____
PROPERTY STR ADDRESS _____ Name: _____
CONTACT: _____ Town: _____
*BRIEF DESCR: ENTIRE SECTION SEC. 29-7-16
*SUBDIVISION: BLOCK: _____ LOT#: _____ LOT SIZE: _____
ZONED: DATE BOOK PAGE DATE BOOK PAGE
DEED INFO: _____
*CD BENEFIT *CD BENEFIT *CD BENEFIT *CD BENEFIT *CD BENEFIT
SPCL AMT:
F1-DEED
*F4=Prompt F5=Upd. F6=Land F7=Bldg F8=H/S F9=Print F10=Del. F11=Sales F12=Exit
F13=Tax Amt F14=Notes F15=Print PRC F16=View Map F17=Prior Val F19=DLT BLDS
F20=View Images F21=Scan Images F22=Add/Upd 10% Affidavit PageUp/PageDown

IN THE CHANCERY COURT OF PEARL RIVER COUNTY, MISSISSIPPI

IN THE MATTER OF THE LAST WILL AND
TESTAMENT OF JAMES A. BOND, DECEASED

CAUSE NO. 01-0124PR-TH

CHELSEA BOND

ADMINISTRATRIX

JUDGMENT APPROVING FIRST AND FINAL ACCOUNTING
and CLOSING THE ADMINISTRATION OF THE ESTATE

THIS DAY came on to be heard the First and Final Accounting of Chelsea Bond, the Administratrix of the Estate of James A. Bond. This Court, after considering all evidence offered in support and opposition to said Final Accounting hereby Finds as fact the following:

1. That James A. Bond departed this life, intestate, on May 23, 2001 and had as his fixed place of residence at the time of his death in Pearl River County, Mississippi.
2. That Chelsea Bond was appointed as Administratrix of the estate of the decedent by order of this Court entered on August 31, 2001, and that Letters of Administration were issued to her by the Clerk of this Court on September 4, 2001 after posting a bond of \$25,000.00, said bond being a commercial surety bond issued by Westchester Fire Insurance Company as surety for Chelsea Bond, the principle.
3. That Notice to Creditors was published in the Picayune Item, a newspaper of general circulation in Pearl River County, Mississippi on September 7, 14 and 21, 2001. Further, the Administratrix filed an affidavit that she had no personal knowledge of any creditors of James A. Bond at the time of his death. More than 90 days have lapsed since the publication of Notice to Creditors, and no creditors have probated claims against the estate of James A. Bond.

FILED

1

AUG 28 2003
James Gray
DAVID EARL JOHNSON, CHANCERY CLERK
BY *James Gray* D.C.

4. That by Judgment of this Court entered on April 30, 2003, this Court adjudicated the heirs at law of James A. Bond to be his five children, namely, James Bond, Danny Bond, Chelsea Bond, Crystal Bond Ross and Zachery Bond, a minor.

5. That Vilonie Sauls has been appointed as general guardian of the person and estate of Zachery Bond by the Chancery Court of Pearl River County, Mississippi by order of this Court entered on August 7, 2003 in cause no. 01-0155PR-TH, and that Letters of Guardianship were issued to Vilonie Sauls on August 8, 2003 after she took the oath of office.

6. That a Rule 81 Summons and a copy of the First and Final Accounting filed by the Administratrix in this cause were served upon James Bond, Danny Bond and upon Crystal Bond Ross more than 30 days prior to this hearing. Said Summons comanded them to appear before this Court on this day to show cause, if any, why the relief sought by the Adminstratix in her First and Final Accounting should not be granted. That a copy of the First and Final Accounting was served upon Vionie Sauls as guardian of Zachery Bond, and she executed a Waiver of Process and 30 day Notice and made an Entry of Appearance on behalf of Zachery Bond. Therefore, all parties are properly before this Court and have been given proper notice of this hearing.

7. That the inventory of the Administratrix should be accepted and approved.

8. That the accounting of the receipts and disbursments made by the Administratrix should be approved by this Court.

9. That James L. Gray was retained by the Administratrix to represent her in the administration of the estate of the decedent, and that he has rendered a valuable and necessary service to the administration of this estate. Said James L. Gray should be compensated for his services in the amount of \$ 3,500⁰⁰, and this Court finds such sum to be reasonable and

appropriate.

10. That the Administratrix has incurred certain out-of-pocket expenses in her administration of this estate in the amount of \$1,656.08, and she should be reimbursed for such expenses out of the estate funds prior to any distribution to the heirs.

11. That the Administratrix has spent her own time and taken off from her work to perform the duties of her office as administratrix, and she should be compensated for her services in the amount of \$ 3,000⁰⁰, which amount this Court finds to be reasonable and appropriate.

12. That the decedent, James A. Bond, was the owner of certain real property located in Pearl River County and Hancock County, Mississippi, said real property being described as follows:

Hancock County Property:

PARCEL 1: Beginning at a point 1320 feet West of the NW corner of the Michael O'Connor Claim, Section 31, Township 7 South, Range 16 West; thence South 1114 feet to a point; thence North 55 degrees 650 feet to a point; thence South 35 degrees West 150 feet to a point, thence North 55 degrees West 85 feet to a point in the middle of Old Road; thence North 22 degrees East 220 feet to a point; thence North 33 degrees 30 minutes East 300 feet to a point; thence North 44 degrees East 300 feet to a point; thence North 44 degrees East 500 feet to a point; thence East 82 feet to the place of beginning, said land containing 10-6/10 acres, more or less, and being part of the John Shave Claim, Section 8, Township 7 South, Range 17 West, Hancock County, Mississippi.

PARCEL 2: Beginning at a stake which is the NW corner of the Michael O'Connor Claim, Section 31, Township 7 South, Range 16 West; thence East 2640 feet; South 47 degrees East 315 feet to the NW corner of Turtle Skin Cemetary thence South 21 degrees East 1638 feet; thence West 750 feet; thence South 84 degrees 30 minutes West 4050 feet; thence North 2156 feet; thence East 1320 feet to the place of beginning, containing 209 acres, more or less, and being a part of the Michael O'Connor Claim, Section 31, and John Shave Claim No. 19, Section 30, Township 7 South, Range 16 West and also part of John Shave Claim No. 19, Section 8, Township 7 South, Range 17 West, Hancock County, Mississippi; subject to reservation of all gas, oil, sulphur and minerals and mineral rights of every kind reserved to H. Weston Lumber Company, in deed shown in Deed Book H-5, pages

218-20 of the Deed Records of Hancock County, Mississippi.

PARCEL 3: Beginning at a stake which is located on the intersection of the John Shave Claim, with the line between Ranges 16 and 17 West; thence North 615 feet for a place of beginning; thence North 185 feet to a stake; thence East 749 feet to the West margin of public road as now laid out; thence South 19 degrees East along the West margin of said Public Road 210 feet to a stake; thence West 845 feet more or less, and being a part of Lot 5, Section 19, Township 7 South, Range 16 West, Hancock County, Mississippi.

Pearl River County Property:

PARCEL 4: Lots 14, 15, and 16 of Block 33 and Lots 5, 6, 7, and 8 of Block 34, all in the Plat of Egertsville, according to map or plat thereof on file in the Office of the Chancery Clerk of Pearl River County, Mississippi.

This Court finds that the above real property should be vested equally in the above named heirs, Chelsea Bond, James Bond, Danny Bond, Crystal Bond Ross and Zachery Bond, a minor, each vested with an undivided 1/5th interest.

14. That the only personal property of the decedent, not used to pay the administrative expenses authorized above, should be equally distributed by the Administratrix to the above named heirs.

15. That all federal and state income tax returns have been filed, no inheritance taxes are owing, and all taxes have been paid.

15. That no further administration of the estate of the decedent is needed, and the Administratrix should be relieved of the duties of her office, and her surety, Westchester Fire Insurance Company should be discharged of its obligations under its surety bond after the Administratrix pays the administrative expenses authorized by this Court, and distribution is made

to the heirs of any remaining personal property and they are vested with their undivided interest in the real property described above. It is therefore,

ORDERED AND ADJUDGED that the Initial Inventory of the Administratrix is hereby accepted, and the First and Final Accounting of the Administratrix is hereby approved. It is further,

ORDERED AND ADJUDGED that the time for creditors to probate claims against the estate of the decedent has lapsed, and all claims of creditors against the estate are hereby barred. It is further,

ORDERED AND ADJUDGED that the Administratrix shall pay out of estate funds the sum of \$ ~~3,100.00~~ to James L. Gray as his fee for services rendered in the administration of the estate of the decedent. It is further,

ORDERED AND ADJUDGED that the Administratrix shall reimburse to herself out of estate funds the sum of \$1,656.08 for expenses she has paid out of her own pocket in the administration of the estate of the decedent. It is further,

ORDERED AND ADJUDGED that the Administratrix shall pay to herself out of estate funds the sum of \$ ~~3,000.00~~ as an Administratrix's fee as compensation for the services she has rendered in the administration of the estate of the decedent. It is further,

ORDERED AND ADJUDGED that the Administratrix shall be relieved of the duties of her office after making the distributions authorized hereinabove and making a final report to this Court of such distributions, and her surety, Westchester Fire Insurance Company is hereby released from its obligations under its bond after such distributions are made. It is further,

ORDERED AND ADJUDGED that the heirs at law of James A. Bond, deceased, namely, James Bond, Danny Bond, Chelsea Bond, Crystal Bond Ross and Zachery Bond, a minor, are hereby

placed into possession of the remaining assets in the estate of the decedent, including the real property described hereinabove, in equal shares of a 1/5th undivided interest each. It is further,

ORDERED AND ADJUDGED that a copy of this Final Judgment be recorded in the land records in the office of the Chancery Clerk of both Pearl River County and Hancock County, Mississippi.

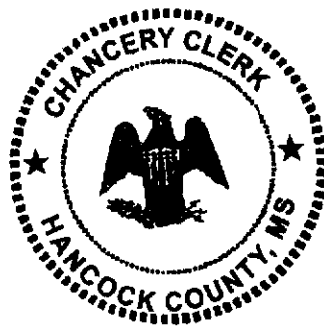
SO ORDERED AND ADJUDGED this 18TH day of August, 2003.


CHANCERY COURT JUDGE

Tax Notices should be sent to the following:

Chelsea Bond
338 Bunk Butler Road
Shubuta, MS 39360
(601) 735-2327

2006 15152
Deed Book & Page



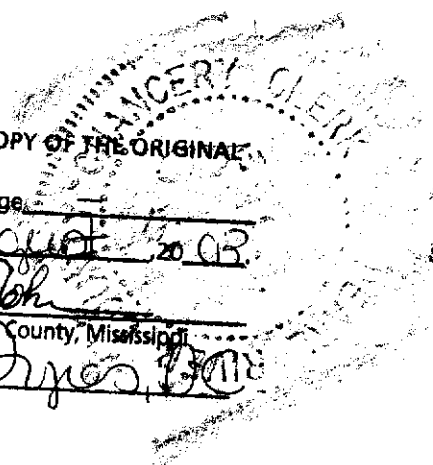
Hancock County
I certify this instrument was filed on
09-19-2006 02:48:03 PM
and recorded in Deed Book
2006 at pages 15146 - 15152
Timothy A Kellar

Latricia Cooley

I CERTIFY THIS IS A TRUE COPY OF THE ORIGINAL
ON FILE IN MY OFFICE.

Book 255 Page 1
This 29th day of August, 2003.

David Earl Johnson
Chancery Clerk, Pearl River County, Mississippi
Donna Jones, Jr.



1/23/2017

REAL PROPERTY APPRAISAL MASTER FILE MAINTENANCE

15:23:18

State ID: 089 -0-32-001.000

ACCOUNT #

48432

YEAR APPRAISED:

-----ACREAGE-----

*TAX

*MTG

*REC JUD

*EXMPT

MAP	PARCEL	SCT	QTR	TWN	RNG	DEEDED	CALCULATED	DIST CODE	LOC DST	CODE
		32		07	16W			1650	0	14

Taxable: *BEAT: 2 *CITY: 0 *SCHOOL: 3 *SPECIAL: 0
 *OWNER CODE...: Ownership Type: Status:

OWNER NAME...: U S A

IN CARE OF...: LAST UPDATED Date:

MAILING ADDR...: BY:

CITY/STATE/ZIP:

PROPERTY STR ADDRESS Name:

Contact: Town:

*BRIEF DESCR: PT. FRAC. SEC. 32 SEC. 32-7-16

*SUBDIVISION: BLOCK: LOT#: LOT SIZE:

ZONED:	DATE	BOOK	PAGE	DATE	BOOK	PAGE	DATE	BOOK	PAGE

DEED INFO:

*CD	BENEFIT	*CD	BENEFIT	*CD	BENEFIT	*CD	BENEFIT	*CD	BENEFIT

SPCL AMT:

F1-DEEDS

*F4=Prompt F5=Upd. F6=Land F7=Bldg F8=H/S F9=Print F10=Del. F11=Sales F12=Exit
 F13=Tax Amt F14=Notes F15=Print PRC F16=View Map F17=Prior Val F19=DLT BLDS
 F20=View Images F21=Scan Images F22=Add/Upd 10% Affidavit PageUp/PageDown

1/23/2017

REAL PROPERTY APPRAISAL MASTER FILE MAINTENANCE

15:23:30

State ID: 089 -0-37-001.000

ACCOUNT # 48441

YEAR APPRAISED:

MAP	PARCEL	SCT	QTR	TWN	RNG	DEEDED	CALCULATED	DIST	CODE	LOC	DST	CODE
		37		07	16W			1650		0		14

Taxable: _____ *BEAT: 2 *CITY: 0 *SCHOOL: 3 *SPECIAL: 0
 *OWNER CODE....: _____ Ownership Type: _____ Status: _____

OWNER NAME.....: U S A

IN CARE OF.....: _____ LAST UPDATED Date: _____

MAILING ADDR...: _____ BY: _____

CITY/STATE/ZIP: _____

PROPERTY STR ADDRESS _____ Name: _____

Contact: _____ Town: _____

*BRIEF DESCR: PT. FRAC. SEC. 37 SEC. 37-7-16

*SUBDIVISION: BLOCK: _____ LOT#: _____ LOT SIZE: _____

ZONED:	DATE	BOOK	PAGE	DATE	BOOK	PAGE	DATE	BOOK	PAGE

DEED INFO: _____

*CD	BENEFIT	*CD	BENEFIT	*CD	BENEFIT	*CD	BENEFIT

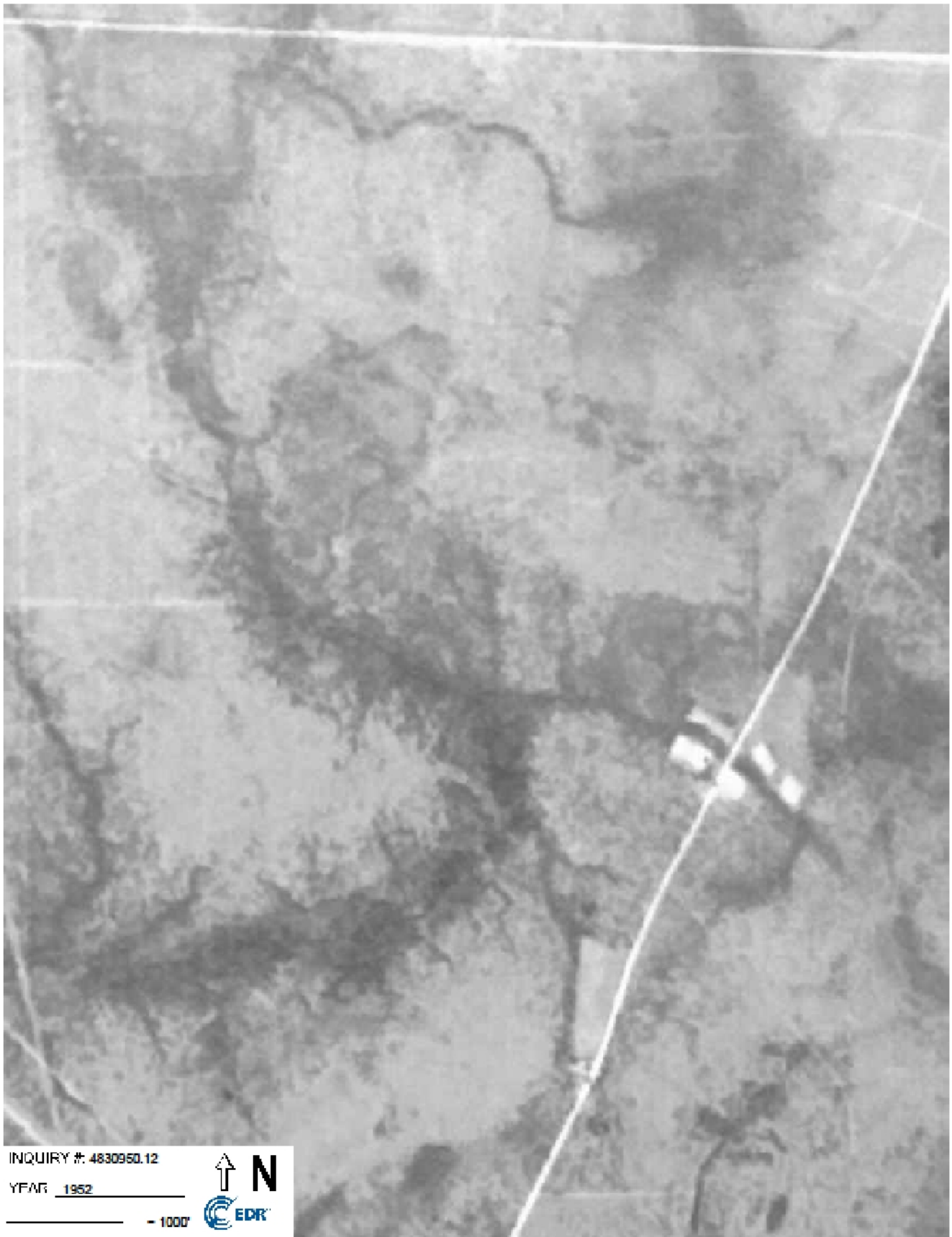
SPCL AMT: _____

F1-DEEDS

F20=View Images F21=Scan Images F22=Add/Upd 10% Affidavit F10=Print PageUp/PageDown F11=Color F12=Exit

APPENDIX E
HISTORICAL RESEARCH DOCUMENTATION
(AERIAL PHOTOGRAPHY, TOPOGRAPHIC MAPS AND HISTORICAL
REGULATORY ENVIRONMENTAL INFORMATION - MSAAP FACILITIES)

Historical Aerial Photographs



INQUIRY #: 4830950.12

YEAR: 1952

- 1000'



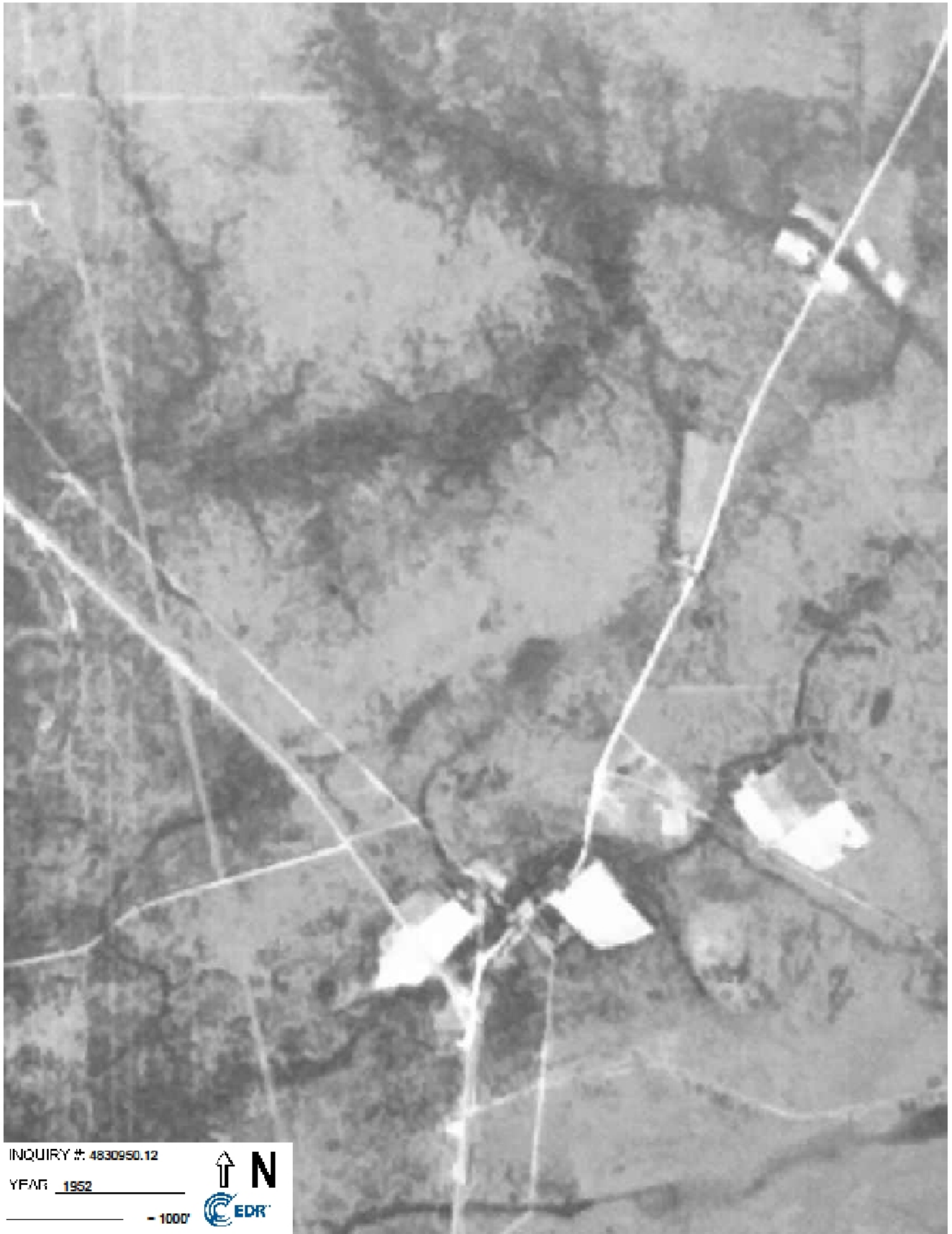
Background image consists of 1952 Black and White Aerial Photography distributed by EDR

LARSON ENVIRONMENTAL, LLC

2 Schooner Lane | Ocean Springs, Mississippi 39564 | Tel: 228.219.2992

Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1952 Historical Aerial Photo of Site Location - NE Area								





INQUIRY #: 4830950.12

YFAR 1952

- 1000'



Background image consists of 1952 Black and White Aerial Photography distributed by EDR



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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1952 Historical Aerial Photo of Site Location - S Area								



INQUIRY #: 4830950.12

YEAR 1976

- 1000'



Background image consists of 1976 Black and White Aerial Photography distributed by EDR



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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1976 Historical Aerial Photo of Site Location - NW Area								



INQUIRY #: 4830950.12

YEAR 1976

- 1000'



Background image consists of 1976 Black and White Aerial Photography distributed by EDR

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Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1976 Historical Aerial Photo of Site Location - SW Area								





INQUIRY #: 4630950.12

YEAR 1983

- 1000'



Background image consists of 1983 Black and White Aerial Photography distributed by EDR



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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1983 Historical Aerial Photo of Site Location - S Area								



INQUIRY #: 4830950.12

YEAR 1983



- 1000'

Background image consists of 1983 Black and White Aerial Photography distributed by EDR



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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1983 Historical Aerial Photo of Site Location - NE Area								



INQUIRY #: 4830950.12

YF/MR 1985

- 1000'



Background image consists of 1985 Color Infrared Aerial Photography distributed by EDR

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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1985 Historical Aerial Photo of Site Location - NE Area								





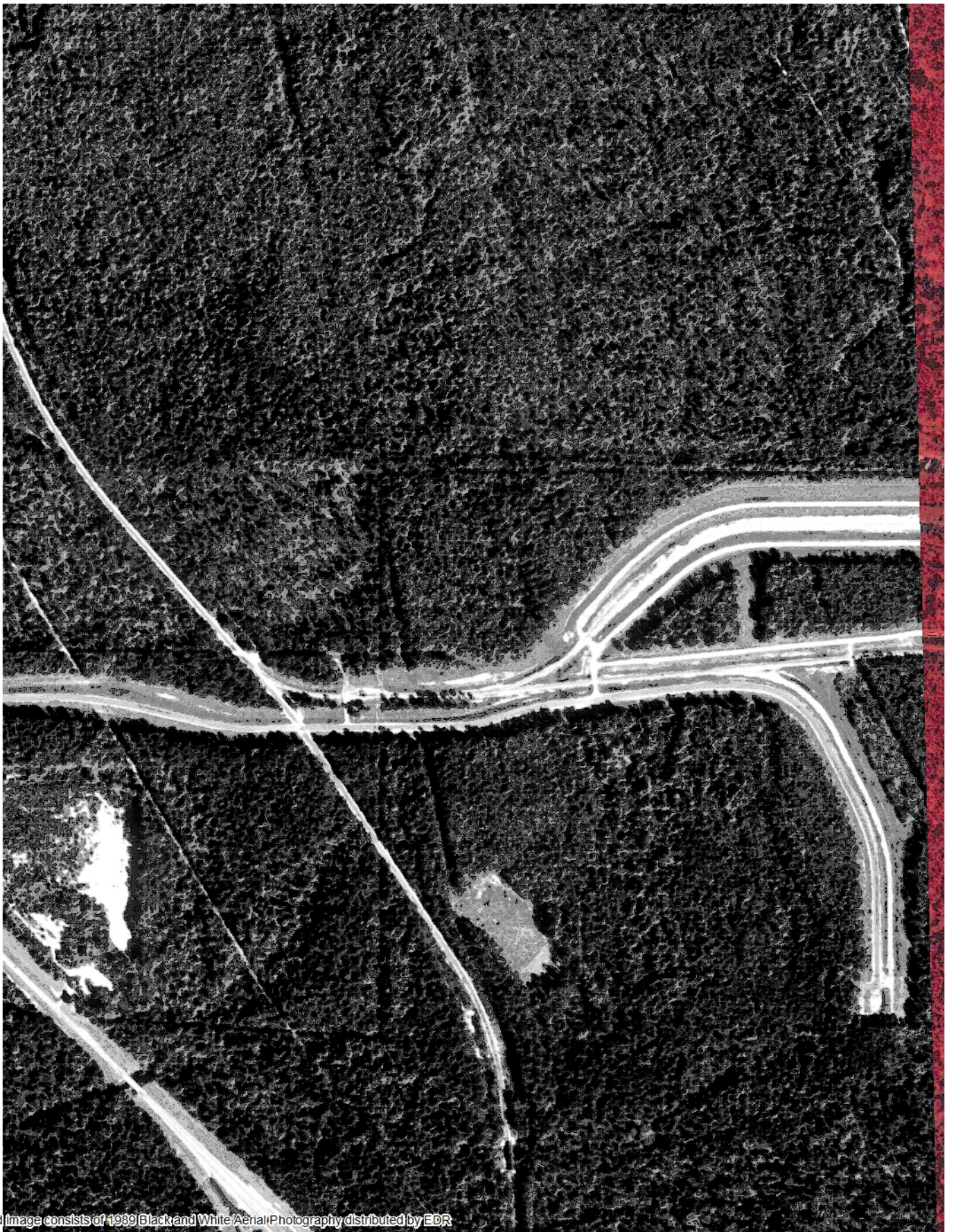
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Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1985 Historical Aerial Photo of Site Location - S Area								





Background image consists of 1989 Black and White Aerial Photography distributed by EDR



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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1989 Historical Aerial Photo of Site Location - NW Area								



INQUIRY #: 4830950.12

YEAR 1989

- 500'



Background image consists of 1989 Color Red Infrared Aerial Photography distributed by EDR



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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1989 Historical Aerial Photo of Site Location - SE Area								



INQUIRY #: 4830950.12

YFAR 1994

- 750'



Background image consists of 1994 Black and White Aerial Photography distributed by EDR

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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1994 Historical Aerial Photo of Site Location - South Area								



INQUIRY #: 4830950.12

YFAR 1994

- 750'



Background image consists of 1994 Black and White Aerial Photography distributed by EDR



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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1994 Historical Aerial Photo of Site Location - NE Area								



 Area A
 Area B

Background image consists of 1995-1996 USGS NAPP Color Infrared DOQQ distributed by MARIS

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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1995-1996 Historical Aerial Photo of Site Location								





 Area A
 Area B

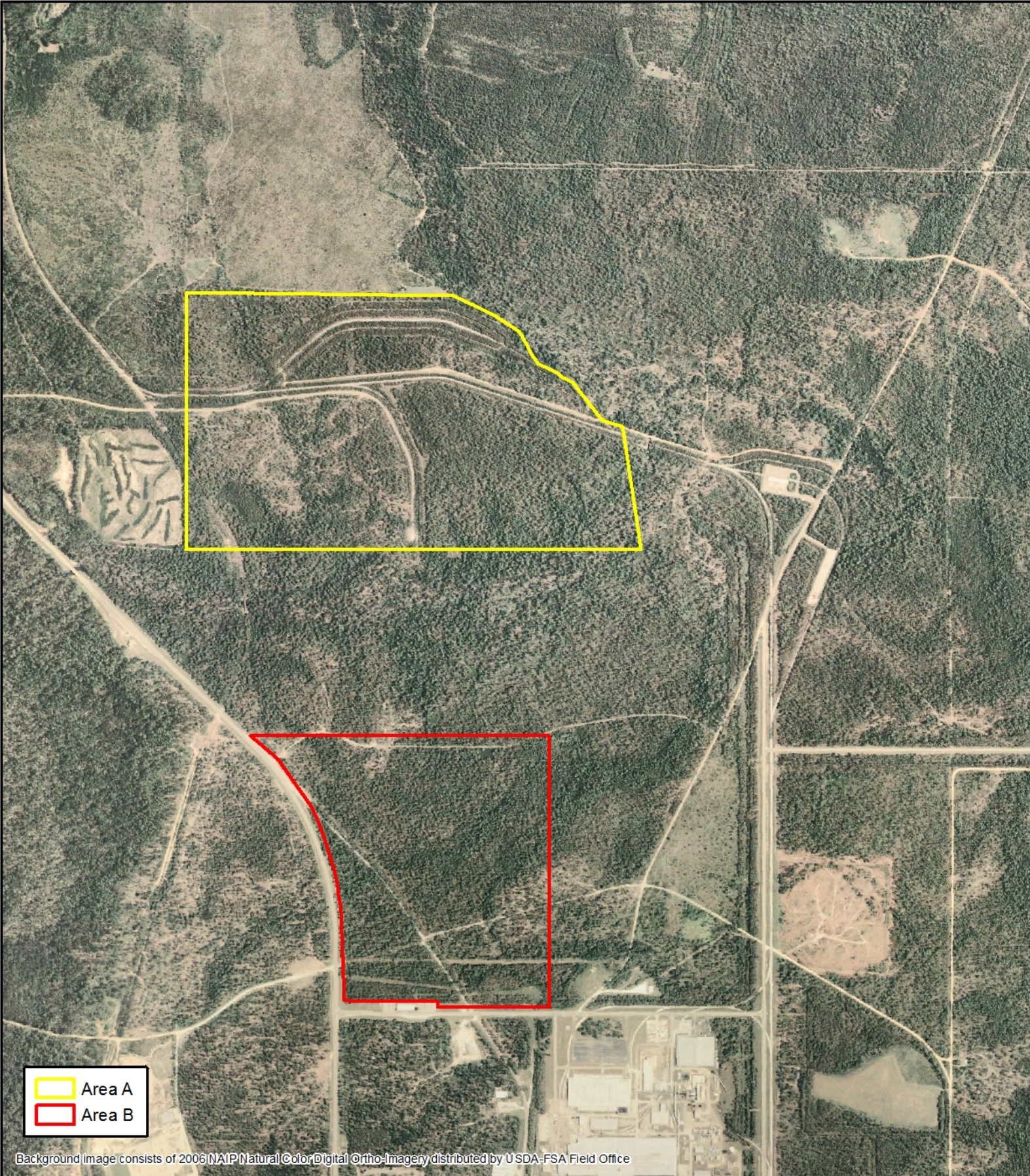
Background image consists of 2005 NAIP Natural Color Digital Ortho-Imagery distributed by USDA-FSA Field Office



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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	2005 Historical Aerial Photo of Site Location								



Background image consists of 2006 NAIP Natural Color Digital Ortho-Imagery distributed by USDA-FSA Field Office

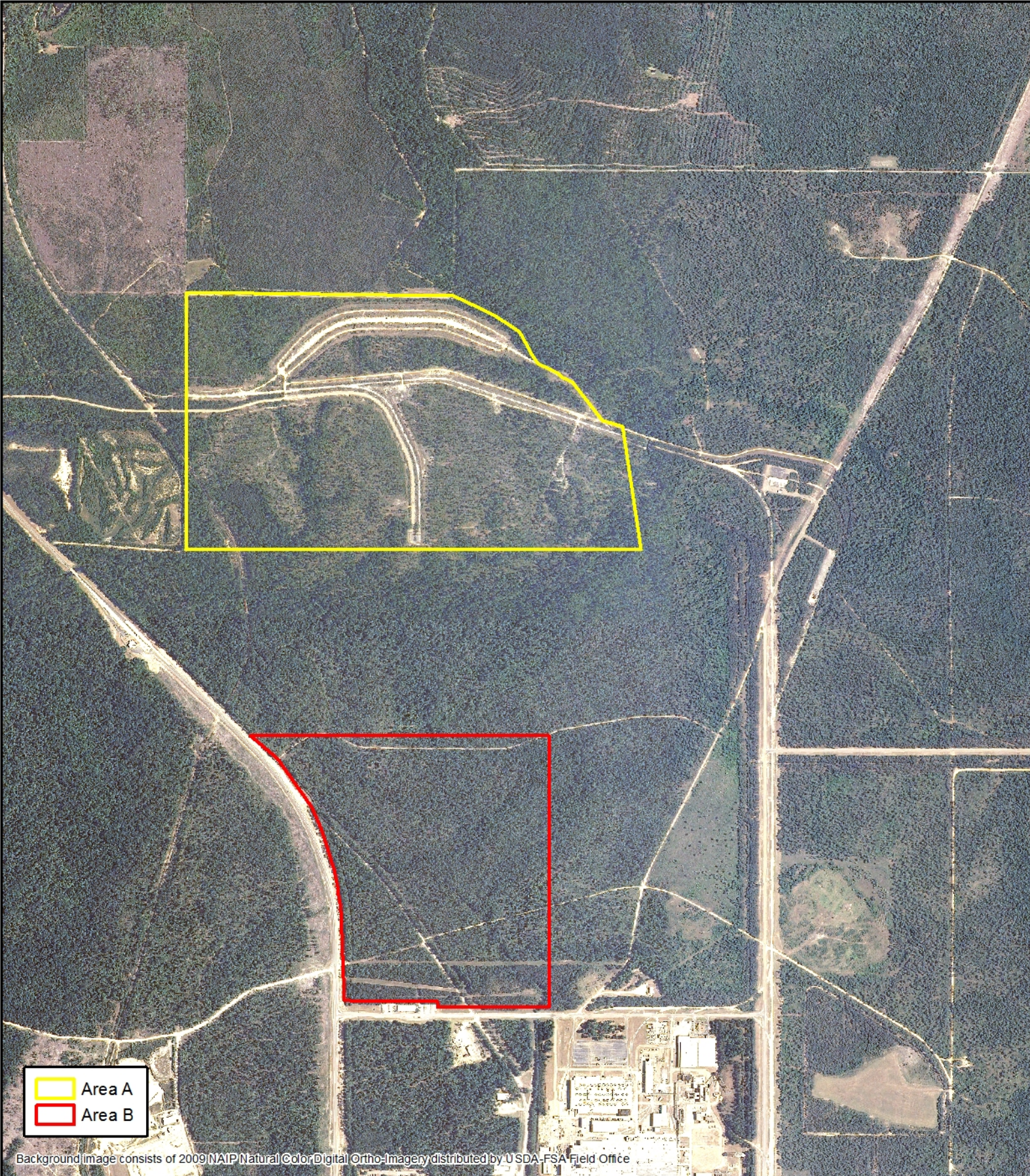
	Area A
	Area B



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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	2006 Historical Aerial Photo of Site Location								



Background image consists of 2009 NAIP Natural Color Digital Ortho-Imagery distributed by USDA-FSA Field Office

- Area A
- Area B



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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	2009 Historical Aerial Photo of Site Location								



 Area A
 Area B

Background image consists of 2012 NAIP Natural Color Digital Ortho-Imagery distributed by USDA-FSA Field Office



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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	2012 Historical Aerial Photo of Site Location								



 Area A
 Area B

Background image consists of 2014 NAIP Natural Color Digital Ortho-Imagery distributed by USDA-FSA Field Office

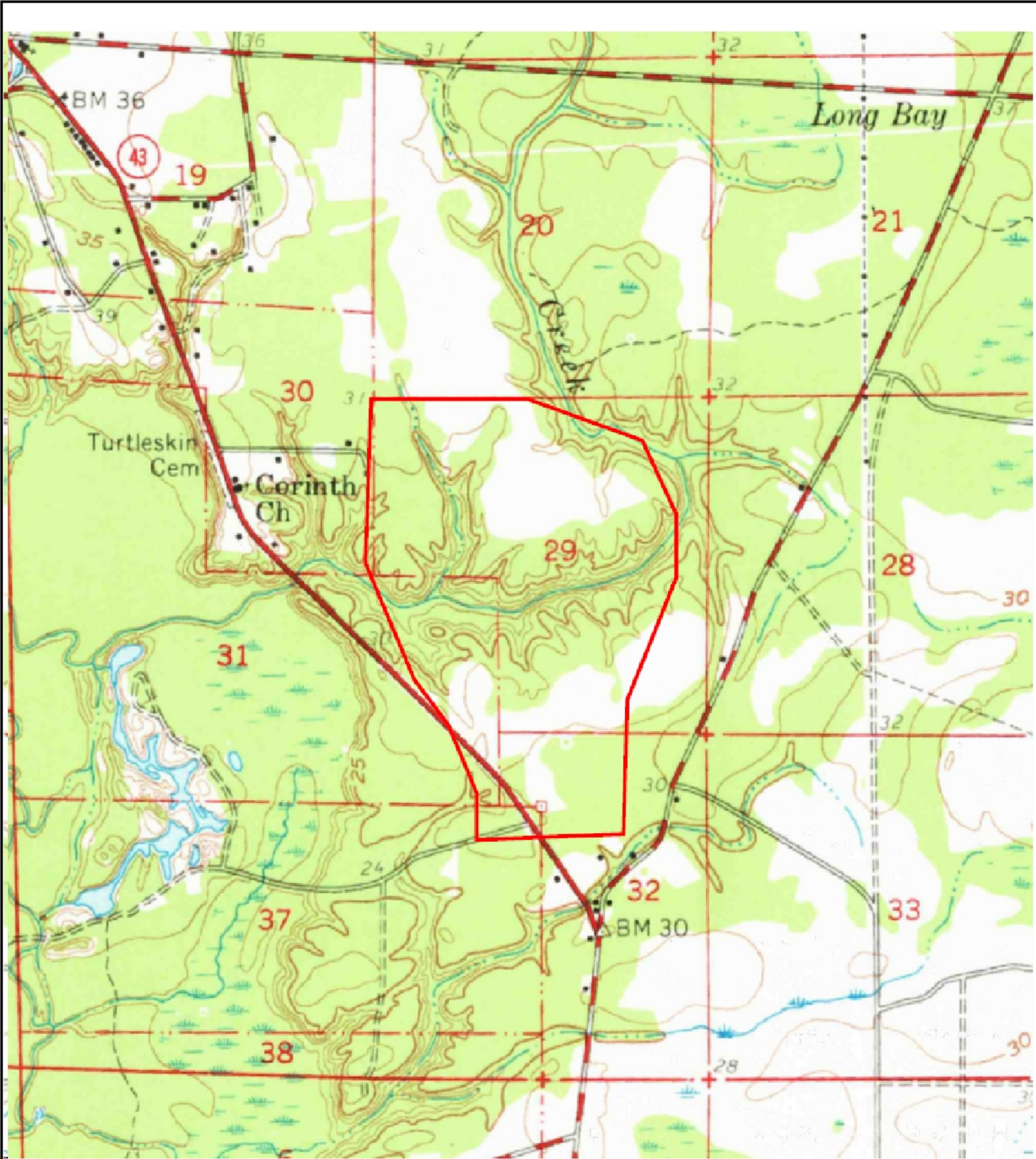


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Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	2014 Historical Aerial Photo of Site Location								

Historical Topographic Maps



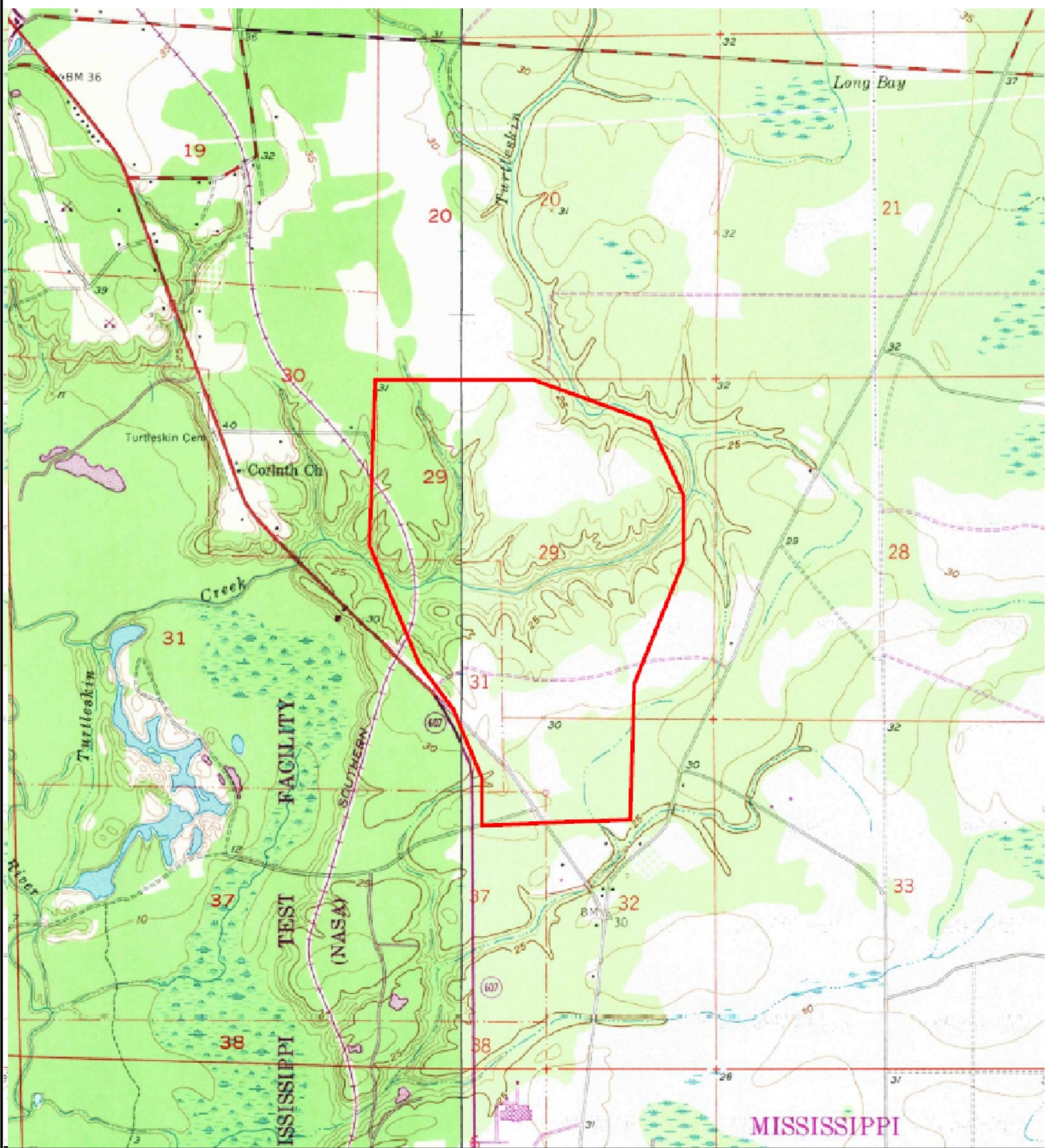
Background image consists of 1959 USGS 7.5-minute quadrangle (Dead Tiger Creek and Nicholson) maps distributed by EDR

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2 Schooner Lane | Ocean Springs, Mississippi 39564 | Tel: 228.219.2992



Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1959 USGS 7.5-minute Quadrangle								



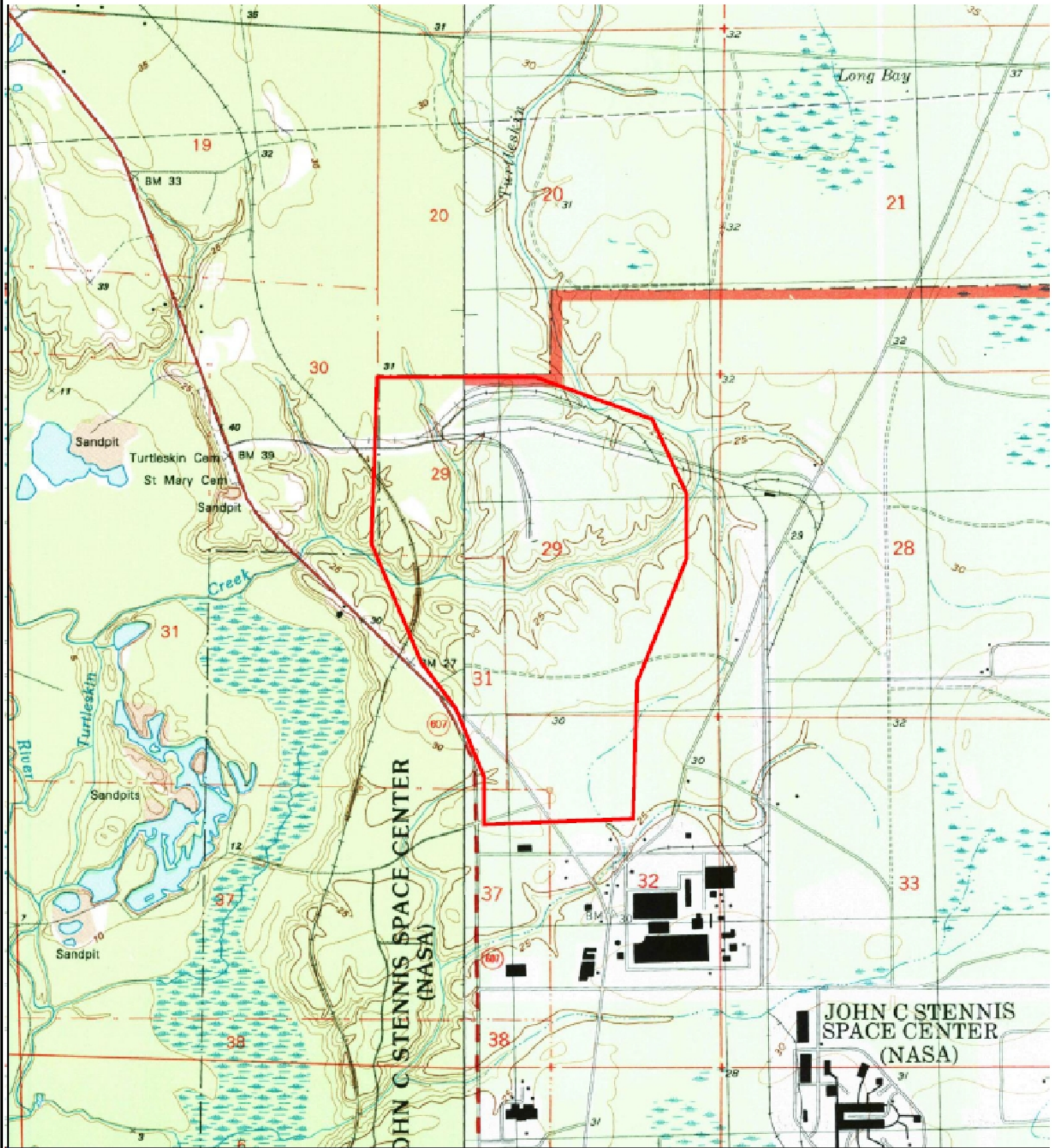
Background image consists of 1970 USGS 7.5-minute quadrangle (Dead Tiger Creek and Nicholson) maps distributed by EDR



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2 Schooner Lane | Ocean Springs, Mississippi 39564 | Tel: 228.219.2992

Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1970 USGS 7.5-minute Quadrangle								



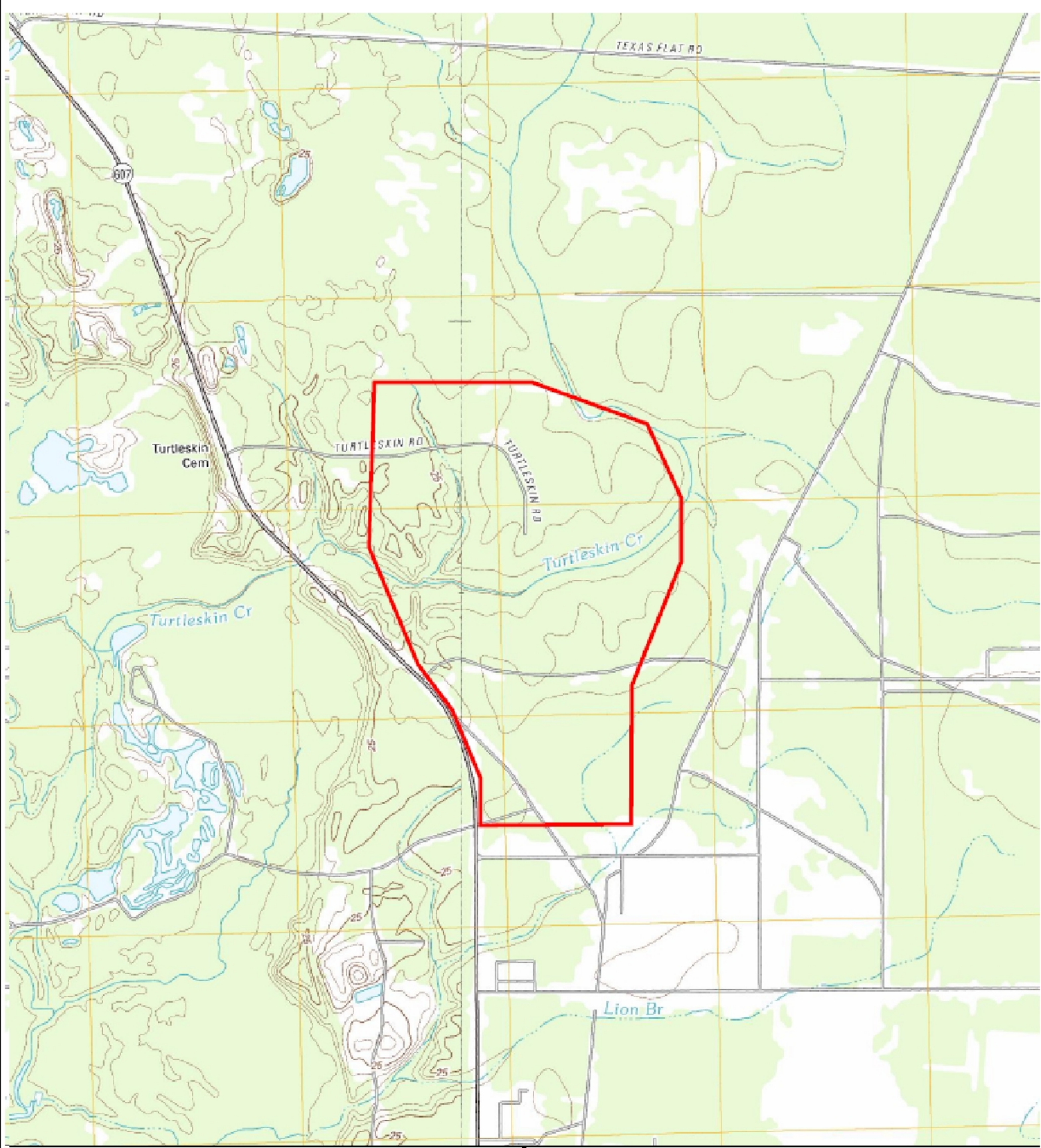
Background image consists of 1994-1996 USGS 7.5-minute quadrangle (Dead Tiger Creek and Nicholson) maps distributed by EDR



LARSON ENVIRONMENTAL, LLC

2 Schooner Lane | Ocean Springs, Mississippi 39564 | Tel: 228.219.2992

Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	1994-1996 USGS 7.5-minute Quadrangle								



Background image consists of 2012 USGS 7.5-minute quadrangle (Dead Tiger Creek and Nicholson) maps distributed by EDR



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2 Schooner Lane | Ocean Springs, Mississippi 39564 | Tel: 228.219.2992

Drawn By:	CAD	Checked By:	LL	Scale:	Varies	Date:	March 10, 2017	Project No.:	2016-119-2
Project:	Phase 1 ESA - Project Wild Boar - Stennis Space Center, MS								
Title:	2012 USGS 7.5-minute Quadrangle								

HISTORICAL REGULATORY ENVIRONMENTAL INFORMATION
MSAAP FACILITIES



**ENVIRONMENTAL BASELINE INVESTIGATION
BUILDING 9115**

**MISSISSIPPI ARMY AMMUNITION PLANT
STENNIS SPACE CENTER, MISSISSIPPI**

Prepared for:

**MASON TECHNOLOGIES, INC.
MISSISSIPPI ARMY AMMUNITION PLANT, BUILDING 9100
STENNIS SPACE CENTER, MISSISSIPPI 39529-7099**

APRIL 22, 2005

1.0 INTRODUCTION

Earth Consulting Group, Inc. (EarthCon) was retained by Mason Technologies, Inc. (MTI) to perform an Environmental Baseline Investigation (EBI) of Building 9115 located at the Mississippi Army Ammunition Plant (MSAAP), Stennis Space Center, Mississippi. The ESI was performed in accordance with the EarthCon *Scope of Work / Cost Estimate* dated March 4, 2005. The purpose of the EBI was to investigate the history of the subject site and determine if the previous property use had impacted the soil and groundwater. The scope of work for the EBI consisted of the following:

- Performing a site reconnaissance of Building 9115;
- Interviewing people knowledgeable of the property history;
- Drilling three (3) soil borings and converting two (2) of the soil borings to temporary groundwater monitoring wells;
- Submitting one (1) soil sample from the borings, two (2) groundwater samples, and one (1) sludge sample from the onsite septic tank for laboratory analyses; and
- Preparing a report of the field activities and laboratory analyses, and containing appropriate illustrations, our findings, and recommendations.

2.0 SITE RECONNAISSANCE AND INTERVIEW

A site reconnaissance was performed by B. Gregory, Taylor, R.P.G., EarthCon Senior Geologist, on April 5, 2005. The site layout is depicted on Figure 1 - Site Plan. Photographs of the area surrounding Building 9115, and the exterior and interior of Building 9115, are attached as Appendix A. Building 9115 has a metal siding exterior and dimensions of approximately 30 feet by 50 feet. A gravel road provides access from Flat Top/Moses Cook Road. A gravel parking area exists on the west side of the structure. With the exception of the parking lot, the immediate area surrounding the structure is grassed, which in turn is surrounded by forested areas. Several utility poles were observed in the vicinity of Building 9115, one (1) of which contained an electrical transformer. The transformer appeared to be in good condition with no signs of leakage. Sewer service is provided by a septic tank situated near the northeast corner of the structure. The bottom depth of the septic tank was measured at approximately 5½ feet below surface grade (bsg), with the lower one (1) foot of the septic tank containing a sludge-like material. A water well, which is located in the grassed area to the east of the structure, provides potable water exclusively to Building 9115. A man-made ditch exists approximately 75 feet south of Building 9115.

Un-grassed areas were observed at the discharge points of the building gutters and beneath gutter seams on the east side of the building. The absence of grass was interpreted as frequent discharge/leakage from the gutters creating excessively wet soil conditions for growth of grass. A surface mat of moss/algae was observed in these non-grassed areas. This material did not have a noticeable odor.

A granular and angular black siliceous material was observed in two (2) areas of the gravel parking area. Each of these areas was approximately three (3) feet by three (3) feet in area. This material did not have a noticeable odor.

The visual inspection of the structure interior was performed on the day of the site reconnaissance. The structure was unoccupied, the floor was tiled, and a drop ceiling was observed. The structure contained miscellaneous office furniture/supplies. No indications of hazardous material storage or dumping were observed.

Mr. Wayne Gouguet, Marketing and Project Planning Director, Mason Technologies, Inc., was interviewed on April 5, 2005, concerning site history. Mr. Gouguet reported that Building 9115 was constructed in approximately 1980 by Blount Construction, and used a construction office during construction of the MSAAP power plant. Prior to 1980, the history of the specific area is uncertain, but the site was probably undeveloped. After completion of the MSAAP power plant, MTI assumed possession of the structure and it was utilized through 1990 as an electronics repair shop and an administrative training facility. The U.S. Navy assumed control of the structure in 1991 and utilized Building 9115 as a electronics repair shop and administrative offices through February 2005. The building has been vacant since February 2005. Mr. Gouguet reported that the black siliceous material was likely unused sandblasting media that may have been placed to fill depressions in the parking lot.

3.0 FIELD ACTIVITIES

EarthCon mobilized to the site to perform additional field activity on April 8, 2005. Soil borings B-1 and B-2 were drilled in the probable septic tank leach field, on the north side of Building 9115. Soil boring B-3 was drilled in the probable material unloading/loading area, on the south side of Building 9115. Soil borings B-2 and B-3 were converted to temporary groundwater monitoring wells TW-1 and TW-2, respectively. The locations of the soil borings and temporary groundwater monitoring wells are shown on Figure 1. After collecting the groundwater samples, the groundwater monitoring wells were removed and the borings were abandoned with a bentonite-amended cement slurry.

The soil borings were advanced with a Geoprobe[®] Model 540 UD drilling rig, using direct-push drilling techniques, to terminal depths of twelve (12) bsg. Groundwater was encountered at a depth of approximately eight (8) feet bsg. Soil samples were collected continuously from the borings over four (4) foot depth intervals. Descriptions of the soil samples were prepared in general accordance with the Unified Soil Classification System. Soil boring logs were prepared in the field by a State of Mississippi Registered Professional Geologist, finalized using a CAD program, and are attached as Appendix B.

Representative portions of each four (4) foot depth interval were placed in a Ziploc[®] bag, a 2-ounce glass jar, and a 4-ounce glass jar. The jar samples were immediately preserved on ice for potential laboratory analysis. The headspace of the Ziploc[®] bags was field screened for the presence of volatile organic vapors using a photoionization detector (PID). The results of the field screening are presented on the soil boring logs. Based on the results of the field screening, soil descriptions, and depths to groundwater encountered while drilling, one (1) soil sample was selected for laboratory analysis. Using the 2-ounce glass jars, the soil sample targeted for volatile organic compound (VOC) laboratory analysis was preserved in the field in accordance with EPA Method 5035.

Temporary groundwater monitoring wells TW-1 and TW-2 were installed at the locations of borings B-3 and B-4, respectively. The wells were installed to depths of approximately fifteen (15) feet bsg, and were constructed of 1-inch diameter PVC, with screen lengths of ten (10) feet.

After installing the wells, Teflon[®] tubing was inserted into each well and the wells were purged at rates of less than one (1) liter per minute, using a peristaltic pump. Geochemical field parameters (pH, temperature, conductivity, and turbidity) of the purge water were monitored during the purging process. The purging process was deemed complete upon approximate stabilization of the geochemical parameters, after a minimum purge volume of three (3) well volumes. The monitoring well sampling records are attached as Appendix C. After completing the purging process, groundwater samples were collected in the appropriate containers and preserved on ice.

One (1) sample of the sludge material in the bottom of the septic tank was collected using a 2-inch diameter polyethylene tube fitted with a sand catcher. The collected material was placed in 4-ounce glass jars and preserved on ice.

4.0 LABORATORY ANALYSES

The soil sample collected from boring B-2 (5'-6'), groundwater samples TW-1 and TW-2, and the septic tank sludge sample were transported to EDL Laboratories, Inc. located in Hattiesburg, Mississippi, and analyzed for the following:

- VOC, target compound list (TCL), Method 8260B;
- Semivolatile organic compounds (SVOC), Method 8270; and
- Resource Conservation Recovery Act (RCRA) Metals, EPA 200 Series Methods.

The laboratory data report is attached as Appendix D. A summary of detected compounds is provided in Table 4.1. The detected concentrations were compared to the Mississippi Department of Environmental Quality (MDEQ) Tier 1 target remedial goals (TRGs), which are generic, conservative risk-based action levels for soil and groundwater. The following constituents were detected above the TRGs:

- Chloroform in groundwater (TRG 0.155 micrograms per liter (ug/l)): TW-1 (1 ug/l);
- 1,2,4-Trimethylbenzene in groundwater (TRG 12.3 ug/l): TW-2 (35 ug/l); and
- Naphthalene in groundwater (TRG 6.20 ug/l): TW-2 (36 ug/l).

Table 4.1
Summary of Detected Compounds
MSAAP - Building 9115
Stennis Space Center, Mississippi

Compound	B-2 (5'-6')	TW-1	TW-2	Septic Tank	TRG
Barium	5.40 mg/kg	61 ug/l	63 ug/l	20.10 mg/kg	5,480 mg/kg 2,000 ug/l
Cadmium	0.077 mg/kg	< 1 ug/l	< 1 ug/l	0.349 mg/kg	39.1 mg/kg 5.00 ug/l
Chromium	2.45 mg/kg	< 5 ug/l	< 5 ug/l	1.827 mg/kg	227 mg/kg 100 ug/l
Mercury	0.029 mg/kg	< 0.2 ug/l	< 0.2 ug/l	0.083 mg/kg	10.0 mg/kg 2.00 ug/l

Bold values exceed Mississippi Department of Environmental Quality Tier 1 TRG

TRG: target remedial goal

ug/l: micrograms per liter (water)

mg/kg: milligrams per kilogram (soil)

Table 4.1 (continued)
Summary of Detected Compounds
MSAAP - Building 9115
Stennis Space Center, Mississippi

Compound	B-2 (5'-6')	TW-1	TW-2	Septic Tank	TRG
Silver	< 0.002 mg/kg	< 2 ug/l	< 2 ug/l	0.896 mg/kg	391 mg/kg 183 ug/l
Chloroform	< 0.010 mg/kg	1 ug/l	< 1 ug/l	< 0.030 mg/kg	0.312 mg/kg 0.155 ug/l
Isopropylbenzene	< 0.010 mg/kg	< 1 ug/l	2 ug/l	< 0.030 mg/kg	9.43 mg/kg 679 ug/l
1,2,4-Trimethylbenzene	< 0.010 mg/kg	< 1 ug/l	35 ug/l	< 0.030 mg/kg	3,910 mg/kg 12.3 ug/l
Naphthalene	< 0.010 mg/kg	< 1 ug/l	36 ug/l	< 0.030 mg/kg	194 mg/kg 6.20 ug/l
2-Methynaphthalene	< 0.150 mg/kg	< 5 ug/l	27 ug/l	< 0.150 mg/kg	1,560 mg/kg 122 ug/l
Biphenyl	< 0.150 mg/kg	< 5 ug/l	7 ug/l	< 0.150 mg/kg	3,910 mg/kg 304 ug/l
4-Isopropyltoluene	< 0.010 mg/kg	< 1 ug/l	< 1 ug/l	0.049 mg/kg	Not listed
Total Xylenes	< 0.010 mg/kg	< 1 ug/l	1 ug/l	< 0.030 mg/kg	318 mg/kg 10,000 ug/l

Bold values exceed Mississippi Department of Environmental Quality Tier 1 TRG

TRG: target remedial goal

ug/l: micrograms per liter (water)

mg/kg: milligrams per kilogram (soil)

**FINAL
PRELIMINARY ASSESSMENT
STENNIS SPACE CENTER
HANCOCK COUNTY, MISSISSIPPI
VOLUME I**

**NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION**

NOVEMBER 1990

Prepared by
EBASCO SERVICES INCORPORATED
Arlington, Virginia

**NASA CONTRACT NO. NASW-4301
TASK NO. 032**

SITE DATA SHEET

SITE NUMBER: 13

PHOTO NUMBER: 90-283-89

SITE NAME: Shorty's Bar

TYPE OF SITE (e.g., ravine, closed landfill, open pit, etc.):

Building where the old motor pool used to be situated.

PERIOD OF OPERATION: 1964-1967

POTENTIAL POPULATION EXPOSED: 31

PHYSICAL DESCRIPTION AND CONDITION:

Building in reasonable condition with concrete and shells around perimeter.

WASTES AND/HAZARDOUS SUBSTANCES MANAGED IN THE SITE:

10,000 gallon storage tank for gasoline, 5,000 gallon storage tank for diesel. Tanks were aboveground with berm. Empty acid containers stored there were rinsed 3 times prior to storage.

POSSIBLE RELEASE PATHWAYS: Air () Surface Water () Soil (x)
Groundwater (x) Subsurface Gas ()

HISTORY AND/OR EVIDENCE OF RELEASE:

Several oil spills occurred during the motor pool period of use, however the stains are not presently visible. Old airplane engines were placed in a pit nearby, but no hazardous materials were buried with the airplane engines. Presently the Army has control of the building and uses it as a warehouse for excess material.

RECOMMENDATIONS: No Further Action (x)
Confirmatory Sampling ()
Full Sampling Investigation ()

RATIONALE:

The only incidents noted at Shorty's Bar were minor oil spills. Given the that these spills occurred over twenty years ago, providing sufficient time for some biodegradation of oil, no further action is recommended.

FILES AND OTHER REFERENCES REVIEWED:

1) Interview with C.B. Poolson, Pan Am World Services Engineer, SSC, conducted by H. Chernoff, Ebasco Services Inc., June 7, 1990.

2) Interview with R.C. McCaleb, Senior Environmental Officer,

NASA/SSC, conducted by H. Chernoff, Ebasco Services Inc., June 20, 1990.

3) Interview with J. Gordon-Stokes, Senior Ecologist, Pan Am World Services, SSC, conducted by H. Chernoff, Ebasco Services Inc., June 8, 1990.

COMMENTS:

None.

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART I - SITE INFORMATION ASSESSMENT

I. IDENTIFICATION
01 STATE MS 02 SITE NUMBER NEW

II. SITE NAME AND LOCATION

01 SITE NAME: John C. Stennis Space Center- Shorty's Bar
02 STREET, RTE. NO. OR SPECIFIC LOCATION IDENTIFIER: Also known as Building S8301, Shorty's Bar is located near the intersection of Flat Top Road and Old Hwy. 43
03 CITY: John C. Stennis Space Center
04 STATE: MS 05 ZIP CODE: 39529-6000 06 COUNTY: Hancock
07 COUNTY CODE: 08 CONG. DIST.: 05 09 COORDINATES: LATITUDE 30 22' 10" LONGITUDE 89 36' 80"

10 DIRECTIONS TO SITE (starting from nearest public road): Exit onto 607 North from Interstate 10. Drive north for approximately 2 miles until the South Gate Reception Center and obtain a visitor pass and further directions from NASA personnel.

III. RESPONSIBLE PARTIES

01 OWNER (if known): National Aeronautics and Space Administration
02 STREET: Not Applicable
03 CITY: Stennis Space Center
04 STATE: MS 05 ZIP CODE: 39529-6000 06 TELEPHONE NUMBER: (601) 688-2004
07 OPERATOR (if known and different from owner):
08 STREET:
09 CITY:
10 STATE: 11 ZIP CODE: 12 TELEPHONE NUMBER:
13 TYPE OF OWNERSHIP (Check one):
 A. Private B. Federal NASA (Agency name) C. State D. County
 E. Municipal F. Other (Specify) G. Unknown

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

A. RCRA 3001 DATE RECEIVED / / M D Y B. UNCONTROLLED WASTE SITE DATE RECEIVED / / M D Y (CERCLA 105c) C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON-SITE INSPECTION BY (Check all that apply):
 YES DATE 06/05/90 A. EPA B. EPA CONTRACTOR C. STATE D. OTHER CONTRACTOR
 NO M D Y E. LOCAL HEALTH OFFICIAL F. OTHER (Specify)
02 SITE STATUS (Check one): A. ACTIVE B. INACTIVE C. UNKNOWN
03 YEARS OF OPERATION: 1964 1967 UNKNOWN
BEGINNING YEAR ENDING YEAR

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN OR ALLEGED

Gasoline Storage Tanks.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Potential soil and groundwater contamination.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one):
 A. HIGH (Inspection required immediately) B. MEDIUM (Inspection required) C. LOW (Inspection not priority) D. NONE (No further action necessary)

VI. INFORMATION AVAILABLE FROM

01 CONTACT: Dr. Rebecca McCaleb
02 OF (Agency Organization): NASA Stennis Space Center
03 TELEPHONE NUMBER: (601) 358-3156
04 PERSON RESPONSIBLE FOR ASSESSMENT: Helen Chernoff
05 AGENCY: Ebasco Services Inc. 06 ORGANIZATION: (703) 358-8953
07 TELEPHONE NUMBER: 08 DATE: 11/01/90
M D Y

POTENTIAL HAZARDOUS WASTE SITE
 PRELIMINARY ASSESSMENT
 PART III - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE MS	02 SITE NUMBER NEW

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 A. GROUNDWATER CONTAMINATION 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 B. SURFACE WATER CONTAMINATION 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 C. CONTAMINATION OF AIR 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 D. FIRE EXPLOSIVE CONDITIONS 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 E. DIRECT CONTACT 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 03 POPULATION POTENTIALLY AFFECTED 31 04 NARRATIVE DESCRIPTION

If surface soil is contaminated, individuals working in the vicinity may occasionally come into direct contact with the soil.

01 F. CONTAMINATION OF SOIL 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 G. DRINKING WATER CONTAMINATION 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 H. WORKER EXPOSURE PATHWAY 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 I. POPULATION EXPOSURE PATHWAY 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

None observed or alleged.

POTENTIAL HAZARDOUS WASTE SITE
 PRELIMINARY ASSESSMENT
 PART III - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE MS	02 SITE NUMBER NEW

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 J. DAMAGE TO FLORA 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 K. DAMAGE TO FAUNA 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 L. CONTAMINATION OF FOOD CHAIN 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 M. UNSTABLE CONTAINMENT OF WASTES 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 N. DAMAGE TO OFF-SITE PROPERTY 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTs 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 04 NARRATIVE DESCRIPTION

None observed or alleged.

01 P. ILLEGAL/UNAUTHORIZED DUMPING 02 OBSERVED (DATE _____) POTENTIAL ALLEGED
 04 NARRATIVE DESCRIPTION

None observed or alleged.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL OR ALLEGED HAZARDS

None observed or alleged.

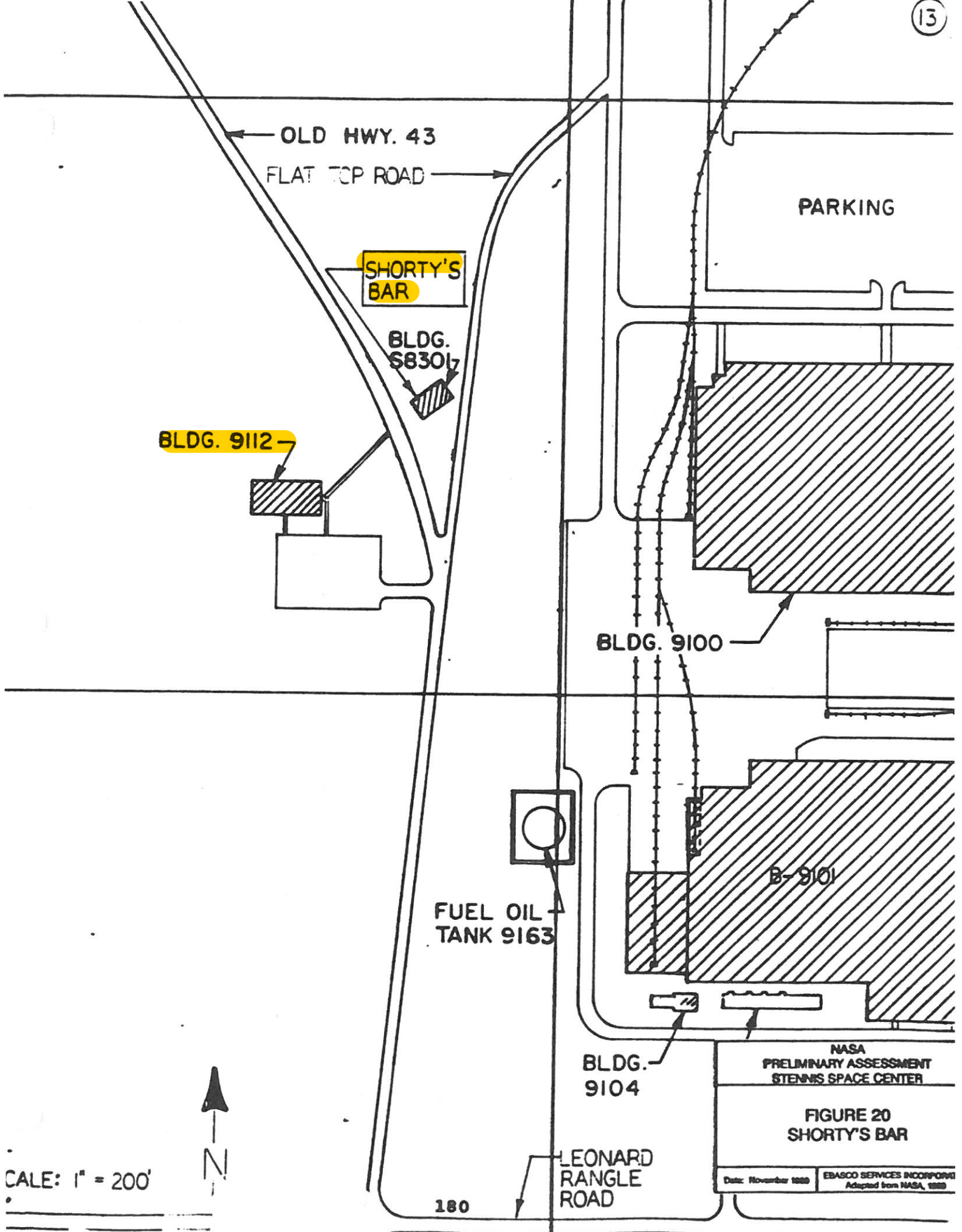
III. TOTAL POPULATION POTENTIALLY AFFECTED: 31

IV. COMMENTS

The releases of materials at Shorty's Bar were several minor oil spills over 20 years ago. No evidence of these spills is presently apparent, and at least partial degradation any spilled oil should have occurred.

V. SOURCES OF INFORMATION (Cite specific references)

- 1) Interview with C.B. Poolson, Pan Am World Services Engineer, SSC, conducted by H. Chernoff, Ebasco Services Inc., June 7, 1990.
- 2) Interview with R.C. McCaleb, Senior Environmental Officer, NASA/SSC, conducted by H. Chernoff, Ebasco Services Inc., June 20, 1990.
- 3) Interview with J. Gordon-Stokes, Senior Ecologist, Pan Am World Services, SSC, conducted by H. Chernoff, Ebasco Services Inc., June 8, 1990.



NASA
PRELIMINARY ASSESSMENT
STENNIS SPACE CENTER

FIGURE 20
SHORTY'S BAR

Date: November 1989 EBASCO SERVICES INCORPORATED
Adapted from NASA, 1989

SCALE: 1" = 200'

180





Legend

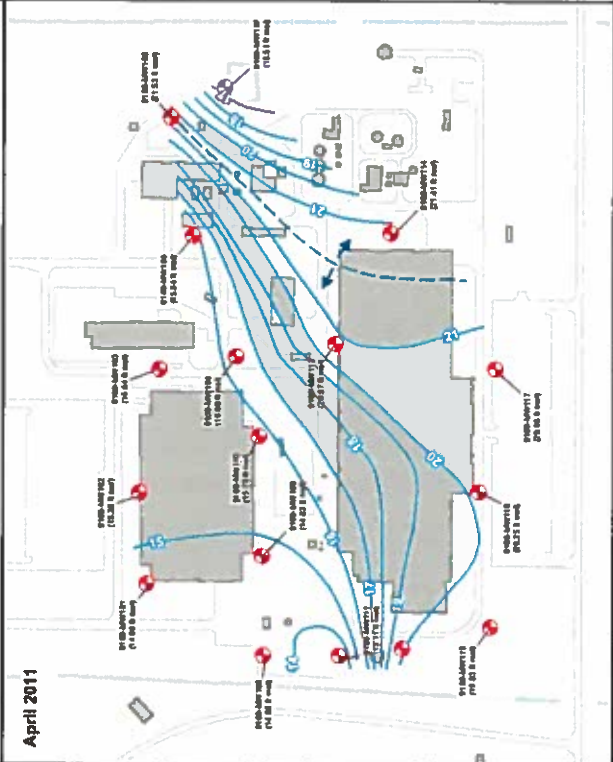
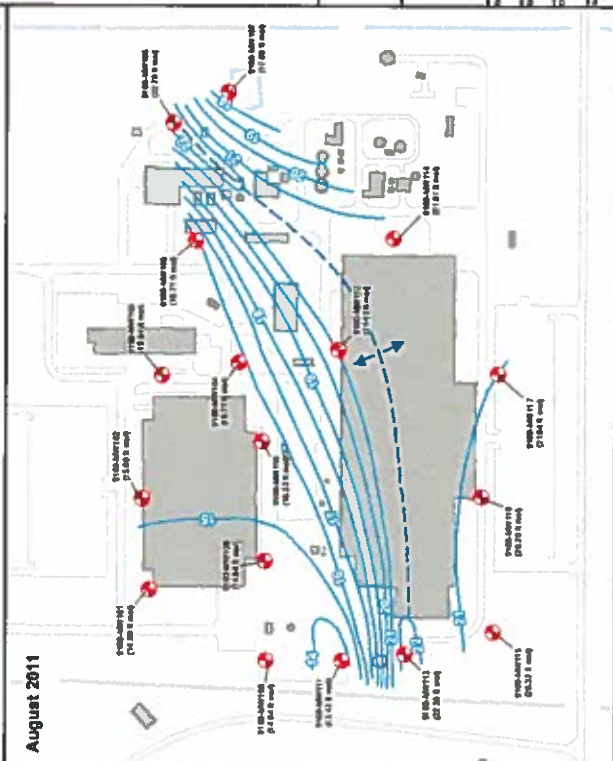
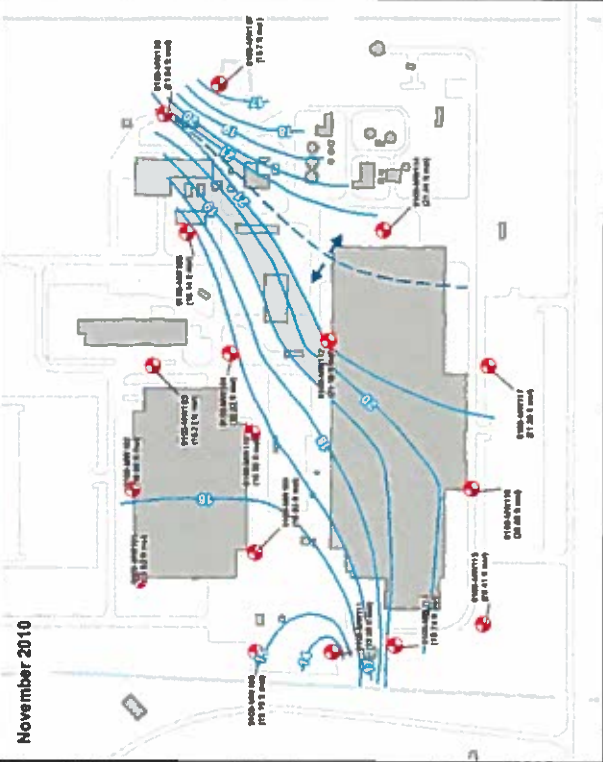
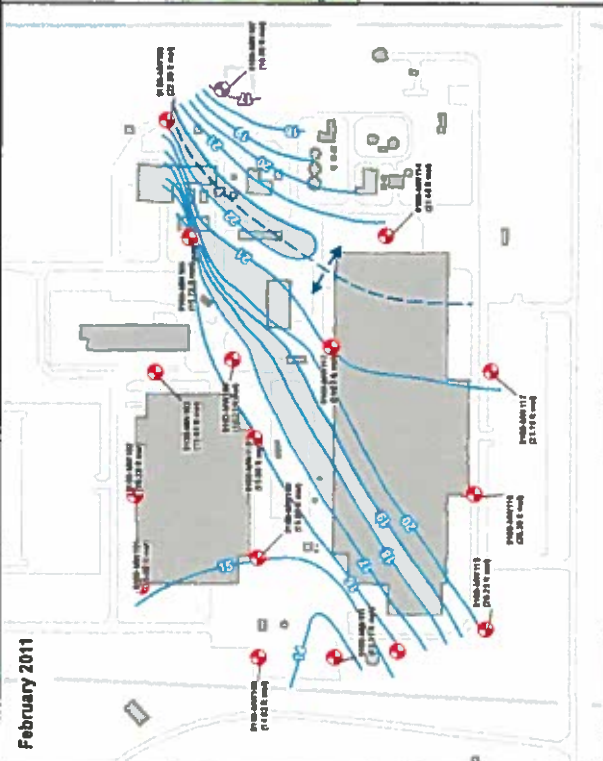
- NASA John C. Stennis Space Center Boundary
- Former MSAAP Boundary
- Existing Well for Sampling
- Proposed New Well
- Proposed Well for Water Level Measurement
- Proposed Well for Abandonment
- TCE Concentration (µg/L)
 - 5 - 50
 - > 50

0 100 200 400 Feet

URS

Figure 1 - 9100 Area
Proposed Monitoring Well Management
for Land Use Controls with
Monitored Natural Attenuation

Prepared By	JMC
Reviewed By	JMC
Approved By	DJ
Checked By	CU
Project	Mississippi Army Ammunition Plant
Location	NAD 1983 State Plane Mississippi East (Feet)
Date	ES&R Draw 2007



Legend

- NASA John C. Stennis Space Center Boundary
- MSAAP Boundary
- 9100 Area Boundary
- Contour
- Groundwater Divide (Approximate)
- Groundwater Flow Direction
- Monitoring Well

ft msl = feet above mean sea level

N 0 200 400 800 Feet

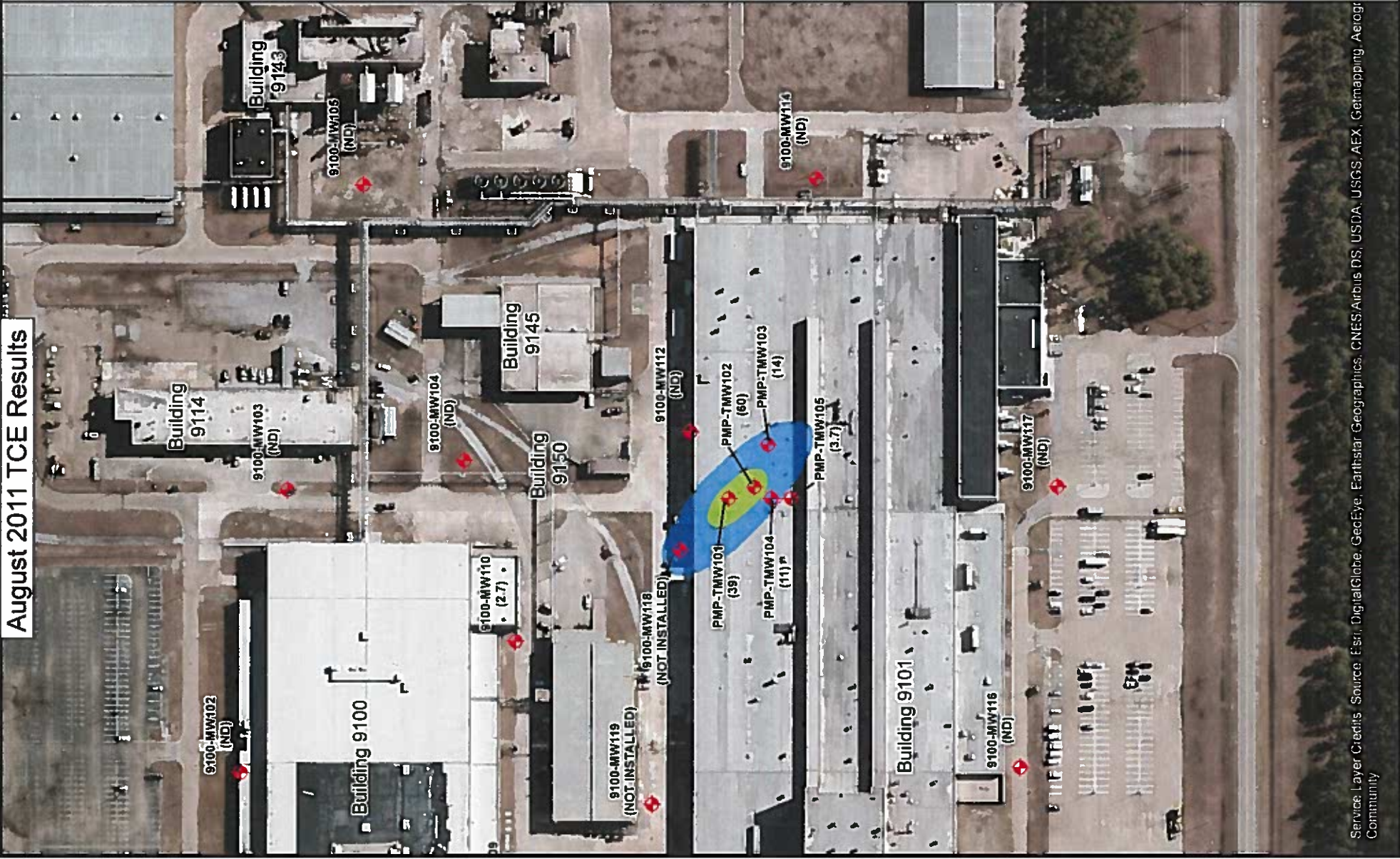
URS

Figure 3
Quarterly 9100 Area Water Level Contours

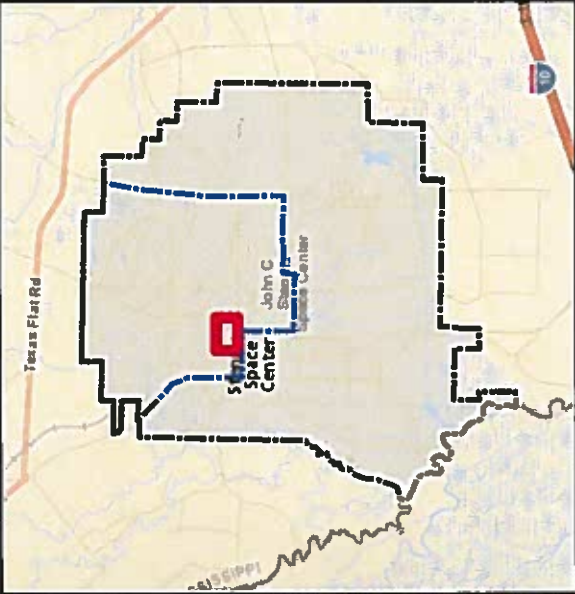
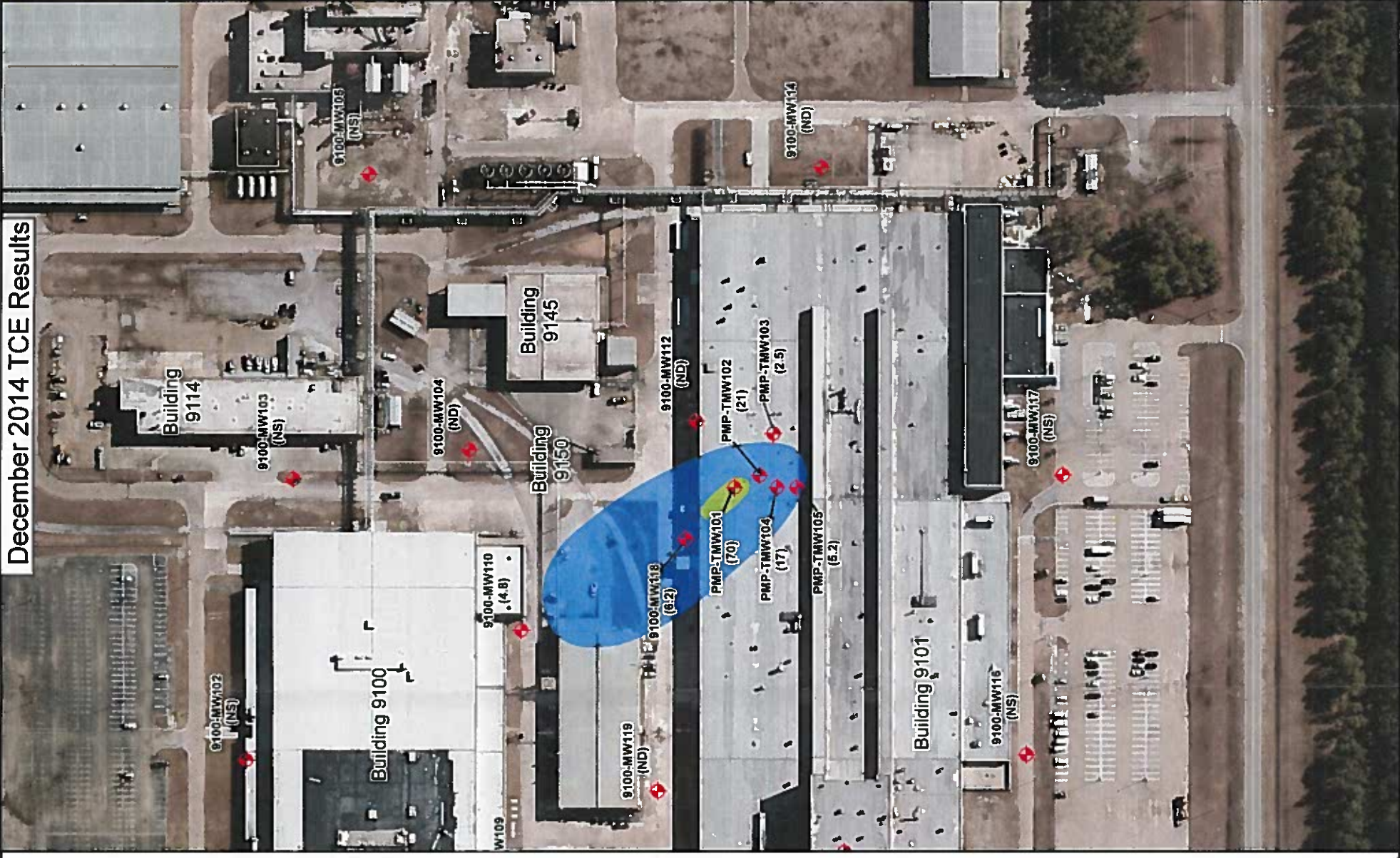
Prepared By	JMC
Reviewed By	JMC
Approved By	DU
Drawn By	
ES&D Date	2007

Mississippi Army Ammunition Plant
MAD 1903 Data Plans Mississippi East (Foot)

August 2011 TCE Results



December 2014 TCE Results



Legend

- Monitoring Well Locations (6.2) - TCE Concentration (ug/L)
- TCE Concentration 5 - 35 ug/L
- TCE Concentration > 35 ug/L

NS - Not Sampled
 ND - Not Detected
 ug/L Micrograms per Liter



CTI-URS
 Environmental Services, LLC

US Army Corps of Engineers

Figure 3-4
 Building 9101 TCE Plume-
 August 2011 and December 2014

Designed By	RWS
Drawn By	CRL
Checked By	JRD
Submitted By	RCS
Project:	Former Mississippi Army Ammunition Plant
Projection:	NAD 1983 State Plane Mississippi East (Feet)
Source:	ESRI Data 2007

Services Layer Credits Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Geomatics, Aerog Community

WD-SW106-00	
VOCs (µg/L)	
Toluene	0.28 J
All SVOCs nondetect.	
WD-SD106-00	
VOCs (µg/kg)	
Toluene	23
SVOCs (µg/kg)	
Anthracene	7.1 J
Benzo(a)anthracene	27
Benzo(a)pyrene	54
Benzo(b)fluoranthene	110
Benzo(g,h,i)perylene	53
Benzo(k)fluoranthene	30
Chrysene	56
Dibenzo(a,h)anthracene	14 J
Fluoranthene	84
Indeno(1,2,3-cd)pyrene	52
Phenanthrene	18 J
Pyrene	69
Metals (mg/kg)	
Arsenic	1.85
Iron	5620

WD-SW105-00	
All VOCs nondetect.	
SVOCs (µg/L)	
Benzo(a)anthracene	0.44 J
Benzo(a)pyrene	0.61 J
Benzo(b)fluoranthene	1.2
Benzo(g,h,i)perylene	0.61 J
Benzo(k)fluoranthene	0.45 J
Chrysene	0.85 J
Fluoranthene	1.7
Indeno(1,2,3-cd)pyrene	0.57
Pyrene	1.2
WD-SD105-00	
VOCs (µg/kg)	
Toluene	3.5 J
SVOCs (µg/kg)	
Anthracene	600
Benzo(a)anthracene	5600
Benzo(a)pyrene	11000
Benzo(b)fluoranthene	22000
Benzo(g,h,i)perylene	10000
Benzo(k)fluoranthene	5700
Chrysene	12000
Dibenzo(a,h)anthracene	2300
Fluoranthene	21000
Fluorene	110
Indeno(1,2,3-cd)pyrene	9300
Napthalene	60 J
Phenanthrene	4300
Pyrene	16000
Metals (mg/kg)	
Arsenic	0.865
Iron	5620

ED-SW107-00	
All VOCs and SVOCs nondetect.	
Metals (µg/L)	
Barium	133
Cobalt	4.46
ED-SD107-00	
All VOCs nondetect.	
SVOCs (µg/kg)	
Anthracene	13
Benzo(a)anthracene	37
Benzo(a)pyrene	43
Benzo(b)fluoranthene	110
Benzo(g,h,i)perylene	36
Benzo(k)fluoranthene	33
Chrysene	74
Dibenzo(a,h)anthracene	9.3 J
Fluoranthene	120
Indeno(1,2,3-cd)pyrene	34
Phenanthrene	30
Pyrene	88
Metals (mg/kg)	
Arsenic	0.865

ED-SW106-00	
VOCs (µg/L)	
Chloromethane	
All SVOCs nondetect.	
Metals (µg/L)	
Cobalt	
Manganese	
ED-SD106-00	
All VOCs nondetect.	
SVOCs (µg/kg)	
Anthracene	
Benzo(a)anthracene	
Benzo(a)pyrene	
Benzo(b)fluoranthene	
Benzo(g,h,i)perylene	
Benzo(k)fluoranthene	
Chrysene	
Dibenzo(a,h)anthracene	
Fluoranthene	
Indeno(1,2,3-cd)pyrene	
Phenanthrene	
Pyrene	
Metals (mg/kg)	
Arsenic	



WD-SW104-00	
All VOCs nondetect.	
SVOCs (µg/L)	
Benzo(a)pyrene	0.97 J
Benzo(b)fluoranthene	1.9 J
Benzo(g,h,i)perylene	1.1 J
Chrysene	1.4 J
Fluoranthene	2.0 J
Indeno(1,2,3-cd)pyrene	1.0 J
Pyrene	1.6 J
Metals (µg/L)	
Manganese	372 J
WD-SD104-00	
All VOCs nondetect.	
SVOCs (µg/kg)	
Anthracene	170
Benzo(a)anthracene	2000
Benzo(a)pyrene	2900
Benzo(b)fluoranthene	5400
Benzo(g,h,i)perylene	2000
Benzo(k)fluoranthene	1700
Chrysene	4000
Dibenz(a,h)anthracene	450
Fluoranthene	6400
Indeno(1,2,3-cd)pyrene	2000
Phenanthrene	1400
Pyrene	5000
Metals (mg/kg)	
Copper	11.4 J

WD-SW103-00	
All VOCs nondetect.	
SVOCs (µg/L)	
Benzo(a)pyrene	0.82 J
Benzo(b)fluoranthene	1.7 J
Benzo(g,h,i)perylene	0.9 J
Benzo(k)fluoranthene	1.7 J
Chrysene	1.3 J
Fluoranthene	1.8 J
Indeno(1,2,3-cd)pyrene	0.83 J
Pyrene	1.4 J
Metals (µg/L)	
Manganese	379 J
WD-SD103-00	
All VOCs nondetect.	
SVOCs (µg/kg)	
Anthracene	210
Benzo(a)anthracene	2300
Benzo(a)pyrene	3500
Benzo(b)fluoranthene	6700
Benzo(g,h,i)perylene	3200
Benzo(k)fluoranthene	1800
Chrysene	4500
Dibenz(a,h)anthracene	670
Fluoranthene	7200
Indeno(1,2,3-cd)pyrene	3000
Phenanthrene	1500
Pyrene	5600
Metals (mg/kg)	
Cadmium	0.466 J
Chromium	21.7
Copper	16.2 J
Iron	6620 J
Lead	65.9

ED-SW105-00	
All VOCs and SVOCs nondetect.	
Metals (µg/L)	
Barium	258
ED-SD105-00	
All VOCs nondetect.	
SVOCs (µg/kg)	
2-Methylnaphthalene	180
Benzo(a)anthracene	64 J
Benzo(a)pyrene	64 J
Benzo(b)fluoranthene	150
Benzo(g,h,i)perylene	61 J
Benzo(k)fluoranthene	52 J
Chrysene	86
Fluoranthene	150
Indeno(1,2,3-cd)pyrene	60 J
Naphthalene	100
Phenanthrene	110
Pyrene	140
All metals below background.	

ED-SW103-00	
All VOCs and SVOCs nondetect.	
All metals below background.	
ED-SD103-00	
All VOCs and SVOCs nondetect.	
All metals below background.	

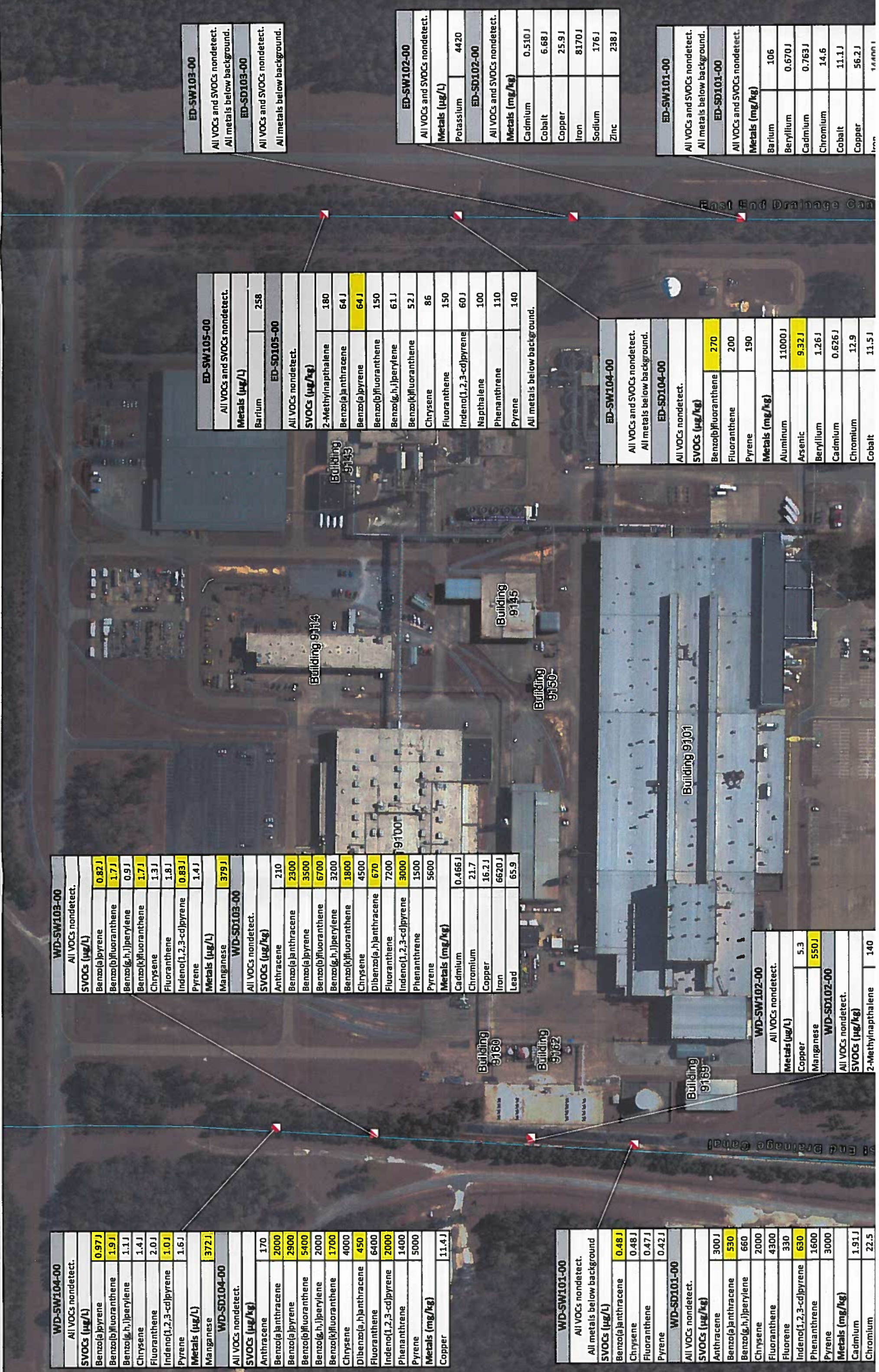
ED-SW102-00	
All VOCs and SVOCs nondetect.	
Metals (µg/L)	
Potassium	4420
ED-SD102-00	
All VOCs and SVOCs nondetect.	
Metals (mg/kg)	
Cadmium	0.510 J
Cobalt	6.68 J
Copper	25.9 J
Iron	8170 J
Sodium	176 J
Zinc	238 J

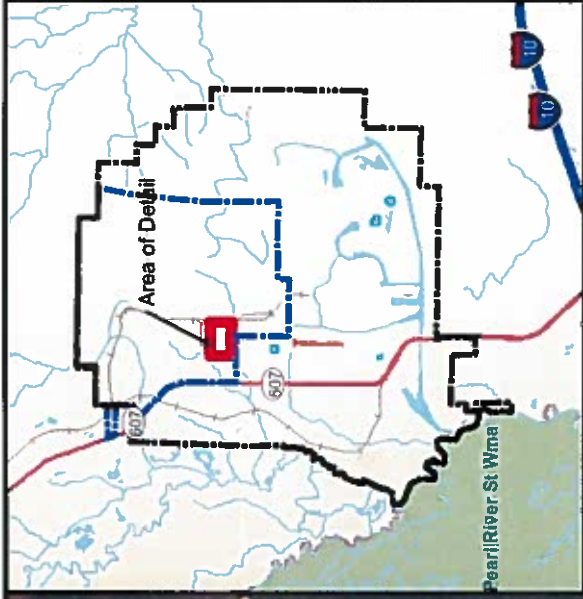
WD-SW101-00	
All VOCs nondetect.	
All metals below background	
SVOCs (µg/L)	
Benzo(a)anthracene	0.48 J
Chrysene	0.48 J
Fluoranthene	0.47 J
Pyrene	0.42 J
WD-SD101-00	
All VOCs nondetect.	
SVOCs (µg/kg)	
Anthracene	300 J
Benzo(a)anthracene	530
Benzo(g,h,i)perylene	660
Chrysene	2000
Fluoranthene	4300
Fluorene	330
Indeno(1,2,3-cd)pyrene	630
Phenanthrene	1600
Pyrene	3000
Metals (mg/kg)	
Cadmium	1.91 J
Chromium	22.5

WD-SW102-00	
All VOCs nondetect.	
Metals (µg/L)	
Copper	5.3
Manganese	550 J
WD-SD102-00	
All VOCs nondetect.	
SVOCs (µg/kg)	
2-Methylnaphthalene	140

ED-SW104-00	
All VOCs and SVOCs nondetect.	
All metals below background.	
ED-SD104-00	
All VOCs nondetect.	
SVOCs (µg/kg)	
Benzo(b)fluoranthene	270
Fluoranthene	200
Pyrene	190
Metals (mg/kg)	
Aluminum	11000 J
Arsenic	9.32 J
Beryllium	1.26 J
Cadmium	0.626 J
Chromium	12.9
Cobalt	11.5 J

ED-SW101-00	
All VOCs and SVOCs nondetect.	
All metals below background.	
ED-SD101-00	
All VOCs and SVOCs nondetect.	
Metals (mg/kg)	
Barium	106
Beryllium	0.670 J
Cadmium	0.763 J
Chromium	14.6
Cobalt	11.1 J
Copper	56.2 J
Iron	14,400 J





Legend

- Surface Water/Sediment Sample Location
- Drainage Canal and Flow Direction

Building ID's

- 9100 = Cargo Metal Parts
- 9101 = Projectile Metal Parts
- 9114 = Motor Pool and Maintenance Shop
- 9143 = Mechanical Plant
- 9145 = Central Flammable Storage
- 9150 = Inert Waste Processing
- 9160 = Tank Farm/Freon Recovery
- 9162 = Control House - Tank Farm
- 9169 = Aluminum Storage Building

- ED= East End Drainage Canal
- SD= Sediment Sample Location
- SW= Surface Water Location
- WD= West End Drainage Canal

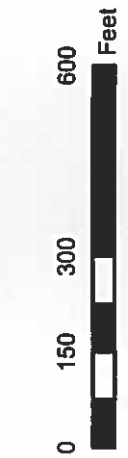


Figure 2-3
Surface Water/Sediment
Sample Locations

Designed By:	JNC	Mississippi Army Ammunition Plant
Drawn By:	JNC	
Checked By:	DJ	
Submitted By:	CJ	
Project:	NAD 1983 State Plane Mississippi East (Feet)	
Source:	ESRI Data 2007	

APPENDIX F
INTERVIEW DOCUMENTATION

Interview Documentation

The majority of the agency and private individuals that were identified during the course of this Phase I ESA as needing to be interviewed were successfully contacted and interviewed by LE, LLC personnel.

Interview Documentation

Agency/Co.	Principal Contact(s)	Contact Information	Initial Contact	Reply	Response medium	Comments
NASA - Environmental Group	Hugh Carr - Natural Resource Manager	228-688-2466	1/09/17-3/01/17	1/09/17 - 3/01/17	Personal and Telephone interviews with Lars Larson	Provision of historical reports and background of subject and adjoining properties.
NASA - Environmental Group	Jenette Gordon - Environmental Specialist	228-688-1416	2/01/17-3/01/17	2/01/17 - 3/01/17	Personal and Telephone interviews with Lars Larson	Provision of historical reports and background of subject and adjoining properties.
NASA - Environmental Group	Adam Murrah - Historical Preservation Officer	228-688-1619	1/09/17-3/01/17	1/09/17 - 3/01/17	Personal and Telephone interviews with Lars Larson	Coordination regarding Cultural Resource and Archaeological permit process of subject and adjoining properties.
Syncom Space Services	Wendy Robinson - Environmental Specialist	228-688- 2752	1/09/17-3/01/17	1/09/17 - 3/01/17	Personal and Telephone interviews with Lars Larson	Provision of historical and environmental information regarding the subject and adjoining properties.
Former AGT/MSAAP Employee	Terry Stevenson	601-916-8333	2/17/17	2/17/17	Telephone interviews with Lars Larson	Historical Information regarding operations at the MSAAP
Former MTI Employee	Wayne Gouget	601-916-1471	2/15/17-2/28/17	2/15/17-2/28/17	Personal and telephone interviews with Lars Larson	Historical Information regarding operations at the MSAAP
Former MTI Employee	Shiela Davis	228-688-3362	2/13/17-2/28/17	2/13/17-2/28/17	Personal and telephone interviews with Lars Larson	Historical Information regarding operations at the MSAAP
Former USACE and NASA Employee	Craig Case	601-590-3056	1/24/17	1/24/17	Personal interviews with Lars Larson	Historical Information regarding operations at the MSAAP and Natural Resource History of NASA
NASA Landfill Managers	Eddie Renz and Paul Thigpen	228-688-1526 and 228-688-1191	2/22/17	2/22/17	Personal and telephone interviews with Lars Larson	History and regulatory status of the NASA Landfill
NASA SSC Fire Chief	Captain Henry Hooks	228-688-3439	2/16/17	2/16/17	Telephone interviews with Lars Larson	History of fires and emergency response within NASA SSC
Water Supply Division - NASA	Keith Brock	228-688-2004	2/23/17	2/27/17	Telephone interviews with Lars Larson	Regulatory Compliance information regarding water system at NASA
Engineering Division - NASA	Russell Cameron	228-688-2119	1/9/17 - 1/12/17	1/9/17 - 1/12/17	Personal and telephone interviews with Lars Larson	Coordination with excavation and utility permits. Provision of site history information of general area.

Mississippi Department of Environmental Quality	Robert Huckaby - Office of Pollution Control	601-961-5360	1/31/17 - 2/9/17	1/31/17 - 2/9/17	Personal and telephone interviews with Lars Larson	Environmental and Regulatory History of MSAAP.
Mississippi Department of Environmental Quality	Thomas Wallace - Office of Pollution Control	601-961-5240	2/28/17	2/28/17	Telephone interviews with Lars Larson	Environmental and Compliance Status of SHWS near Subject Properties.
Mississippi Department of Environmental Quality	Sandra Dowty - UST Division	601-961-5575	2/21/17	2/21/17	Telephone interviews with Lars Larson	LUST Sites within 1.0 mile of properties within NASA SSC.
Mississippi Department of Environmental Quality	Krystal Rudolph - Air Permt Division	601-961-5096	2/9/17	2/9/17	Telephone interviews with Lars Larson	Air Permit History at NASA SSC.
Mississippi Department of Environmental Quality	Warren Robinson - Municipal and Private Facilities Branch	601-961-5243	2/9/17	2/9/17	Telephone interviews with Lars Larson	Waste Water Permit History at NASA SSC.
Mississippi Department of Environmental Quality	Pat Phillips - Office of Land and Water	601-961-5213	2/14/17	2/14/17	Telephone interviews and Email exchange with Lars Larson	Water Well Survey of Area near Subject Properties within NASA SSC.
Mississippi Oil and Gas Board	Ron Tarbutton - Regulatory Specialist	601-576-4900	1/24/17	1/24/17	Email correspondence with Lars Larson	Record of 1 oil well drilled within 4 miles of subject properties.
Mississippi Power	Patrick Chubb	228-897-4338	1/23/17	1/27/17	Email correspondences with Lars Larson	Information regarding electrical transformers near subject properties.
Mississippi Department of Health	Bill Moody	601-575-7518	2/21/17	2/21/17	Telephone interview with Lars Larson	Information regarding regulatory status of drinking water supply system and wells a the NASA SSC and subject properties.

APPENDIX G
QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL



Lars Larson, RPG
2 Schworer Lane
Ocean Springs, MS 39564
Phone: (228) 219-3992
Email: larslarson2010@gmail.com

PROFESSIONAL SUMMARY

For 25 years, Mr. Larson has helped his clients manage environmental compliance, site assessment and remediation programs, natural resource planning and permitting initiatives, as well as oil and gas due diligence and emergency response actions. Prior to joining the environmental consulting industry, Mr. Larson served as a Federal Energy Regulator, and a Coastal Resource-Research Specialist. With this unique background, Mr. Larson has a successful track record leading cross-functional project teams to address oil and chemical releases, environmental compliance programs, and land acquisition projects throughout the Gulf Coast and the Southeastern US. His clientele includes the oil and gas and shipbuilding industry, petroleum fuel retailers, commercial banks, real estate developers and railroads. Mr. Larson is fluent in Spanish, with experience working in Mexico and Spain.

RELATED EXPERIENCE

Remedial Design & Implementation / Sr. Geologist / Commercial Bank / Gulf Coast

Helped the client reduce their remediation costs and avoid long-term soil and groundwater remediation obligations. Project highlights include a statistical analysis of soil and groundwater analytical results and successful negotiation of a site closure plan with a "restrictive use covenant." Designed and implemented a groundwater monitoring program and oversaw the installation of all monitoring wells. Additional tasks included site investigations, and soil remediation, stabilization and treatment operations.

Environmental Program Development / Consultant / Oil & Gas / TX, NM, LA & MS

Helped the client reduce their regulatory liabilities and offsite waste disposal costs, through the design and implementation of an Environmental Management Program for active drilling operations. Tasks included training and instructing field staff in spill management and containment, "in-situ" bioremediation, confirmation sampling, as well as site remediation and reclamation. Fostered relationships with state regulators and landowners, and evaluated and calculated potential short and long-term environmental liability exposure prior to oil and gas lease acquisitions.

Assessment & Remediation / Consultant & Project Manager / Oil & Gas / Southwest NM

Helped the client achieve less stringent post-drilling site reclamation requirements at a cost savings of more than \$200,000. This was accomplished by performing pre-drilling due diligence and site characterizations of drill sites. Tasks included management of post drilling waste disposal activities, preparation of remediation and closure plans for drill pit abandonment and client representation during regulatory meetings with the New Mexico Oil Conservation Division during the "Drill Pit Closure Rule" modification hearings of 2008.

NORM Assessments / Project Manager / Oil & Gas / TX, NM, LA & MS

Implemented NORM waste characterization programs that helped the clients minimize waste disposal costs. Tasks included management of site assessments and remedial actions at oil production and pipeline facilities impacted by NORM.

Wetland Delineation & Permitting / Consultant / Oil & Gas, Real Estate / TX, LA & MS

Performed wetland delineation and permitting projects that helped minimize the client's site development costs. Assisted clients in developing more environmentally sustainable site designs to reduce overall impacts to wetland acreage as well as mitigation requirements. Tasks included wetland determinations, delineations and WRAP Analyses for various oil & gas and real estate development clients along the Gulf Coast.

Assessment & Remediation / Sr. Geologist / Battery Manufacturing / FL, TX, GA and IL

Helped the client reduce groundwater monitoring requirements and obtain faster site closure target dates, resulting in significant cost savings per site related to soil remediation of two former battery manufacturing facilities. Activities included site assessment, onsite treatment, stabilization, waste management and disposal operations. Assisted in the design and implementation of groundwater monitoring programs following soil remediation phases at four other former battery facilities.

Emergency Response & Remediation Oversight / Sr. Geologist / Railroad / South LA

Helped the client respond to a large chemical spill following a train derailment. Responsibilities included the oversight of remediation and corrective action operations, the planning and implementation of extensive soil, groundwater and estuarine assessments, coordination of waste characterization and disposal activities, as well as the coordination of field operations with legal counsel, state and federal regulators and local citizens.

Emergency Response & Remediation Oversight / Consultant / Oil & Gas / South LA

Through rapid emergency response and creative waste management and treatment planning, helped the client realize a reduction in regulatory fines. Project involved managing field activities associated with a preliminary emergency response to a crude oil-produced water release into a rice field. Tasks included management of field assessment teams, implementation of waste oil recovery and impacted water treatment operations including emergency discharge permits, and liaised with federal and state regulators.

Remediation – Sustainability / Field Operations Manager / Land Developer / TX

Developed and implemented a sustainable strategy to restore property impacted by a historical oil pipeline release. Led a project team that included remediation specialists, wildlife biologists and range land managers. Project highlights included pre-excavation planning and regulatory coordination, habitat impact assessment coordination, removal of approximately one million cubic yards of oil-impacted soil and rock, erosion control planning and construction, and the design of wetlands and sustainable wildlife habitat. Additional tasks involved site access negotiations; remediation work plan coordination and development; and oversight of field excavation and sampling.

Groundwater Monitoring / Sr. Geologist / Various Sectors / Southeastern US

Designed and directed the installation of monitoring well networks at 10 RCRA & CERCLA sites, prepared RIFS, and performed numerous Phase I and II Environmental Site Assessments throughout the Southeastern United States. Provided banking and construction/site development clients with precise information regarding the environmental integrity of these sites with which informed decisions could be made regarding acquisition and/or potential development of the properties.

UST Assessment & Closure / Sr. Geologist / Various Sectors / Southeastern US
Managed underground storage tank (UST) closures throughout the Southeast including complete tank removals, in-place closures and groundwater remediation programs at state trust fund sites. Provided clients with regulatory site closure decisions and liability releases, as well as reduced long term management costs.

International Consulting / Consultant / Manufacturing / Spain & Mexico
Planned and developed corrective action proposals to perform "in-situ" bioremediation programs for gasoline stations with USTs in Mexico City that would save clients 10 % to 20% in waste disposal costs. Projects involved conducting environmental audits of automobile and consumer product manufacturing facilities.

Federal Pipeline Regulation / Project Manager / Interstate Gas Pipelines / US
Served as the Petroleum Engineer and Public Utilities Specialist for the Federal Energy Regulatory Commission in Washington, DC. In that capacity, evaluated marketing and engineering proposals for interstate gas pipeline expansion projects, and evaluated potential environmental impact for the NEPA.

PROFESSIONAL QUALIFICATIONS

Registrations

- Registered Professional Geologist
 - Alabama
 - Arkansas
 - Louisiana
 - Mississippi
- US Army Corps of Engineers Wetland Training
- Certified UST Removal Contractor – Mississippi and Louisiana
- Certified in NORM Assessments

EDUCATION

Louisiana State University, Baton Rouge, Louisiana

B.S., Geology, 1983

PROFESSIONAL ACTIVITIES

- Alabama Geological Society
- National Groundwater Association
- Southwest Alabama Geological Society