ENVIRONMENTAL
MATERIALS
CONSULTANTS, INC.

August 20, 2018

Alabama Department of Environmental Management
Groundwater Branch
Post Office Box 301463
Montgomery, Alabama 36130-1463

Attention: John Buchanan

Subject: Updated Modified Corrective Action Plan (CP38)
Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID #15723-109-013688, UST99-01-15

Dear Mr. Buchanan;

Please find enclosed the Updated Modified Corrective Action Plan for the Banks Middle School site. The report is also in PDF on the enclosed disk.

Should you have any questions concerning this report, please do not hesitate to contact us at your convenience.

Sincerely,
Environmental-Materials Consultants, Inc.

Hadley Smith

Enclosures

Underground Storage Tank
Corrective Action

Updated Modified Corrective Action Plan
CP 38

Facility ID # 15723-109-013688

UST 99-01-15

Banks Middle School

9769 North U.S. Highway 29
Pike County
Banks, Alabama

August 20, 2018

RESPONSIBLE PARTY

Pike County Board of Education
101 West Love Street
Troy, Alabama 36081
(334) 566-1948

ATTF CONTRACTOR

Environmental-Materials
Consultants, Inc.
2027 Chestnut Street
Montgomery, Alabama 36106
(334) 265-4000

Environmental-Materials Consultants, Inc.
Project Number MA-1215

ENVIRONMENTAL
MATERIALS
CONSULTANTS, INC.

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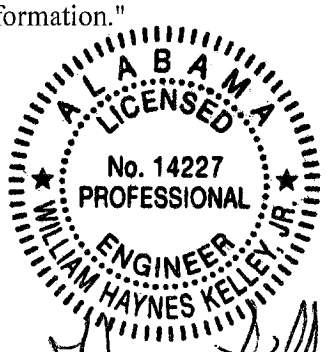
Section

CERTIFICATION PAGE

Banks Middle School
9769 North U. S. Highway 29
Banks, Alabama
Facility ID # 15723-109-013688
Incident # 99-01-15

"I certify under penalty of law that this Corrective Action Plan and all plans, specifications, and technical data submitted within, were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who directly gathered the enclosed information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information."



W. Haynes Kelley, Jr., P.E.

August 20, 2018

Section II

UST RELEASE FACT SHEET

GENERAL INFORMATION:

SITE NAME: Banks Middle School

ADDRESS: 9769 North U.S. Highway 29, Banks, Pike County, Alabama 36005

FACILITY I.D. NO.: 15723-109-013688

UST INCIDENT NO.: UST99-01-15

RESULTS OF EXPOSURE ASSESSMENT:

How many private drinking water wells are located within 1,000 ft. of site?	1 (inactive)
How many public water supply wells are located within 1 mile of the site?	1
Have any drinking water supply wells been impacted by contamination from this release?	unknown
Is there an imminent threat of contamination to any drinking water wells?	☐Yes ☒No
Have vapors or contaminated groundwater posed a threat to the public?	☐Yes ☒No
Are any underground utilities impacted or imminently threatened by the release?	No
Have surface waters been impacted by the release?	No
Is there an imminent threat of contamination to surface waters?	No
What is the type of surrounding population?	Residential

CONTAMINATION DESCRIPTION:

Type of contamination at site: ☒Gasoline, ☒ Diesel, ☐Waste Oil ☐Kerosene, ☐Other _____

Free product present in wells? ☒Yes ☐No Maximum thickness measured: (MW-2 – 1.25' on 10/8/02)

Maximum TPH concentrations measured in soil: 2,529 ppm during closure site assessment 11/24/98
Maximum BTEX concentrations measured in soil: 264,900 ppb – Preliminary Site Investigation 04/29/99
Maximum PAH concentrations measured in soil: 14,900 ppb - Preliminary Site Investigation – 04/29/99

Maximum BTEX or PAH concentrations measured in groundwater: Total BTEX (146.870 ppm in MW-2 on 6/1/07). PAH (14.000 ppm in MW-3 on 9/14/05).

ADEM UST Form - 001 (04/22/93)

Section II

ADEM GROUNDWATER BRANCH

UST SITE CLASSIFICATION SYSTEM

CHECKLIST

Please read all of the following statements and mark either yes or no if the statement applies to your site. If you have conducted a Preliminary or Secondary Investigation, all questions should be answered. Closure site assessment reports may not provide you with all the necessary information, but answer the statements with the knowledge obtained during the closure site assessment.

SITE NAME: Banks Middle School
SITE ADDRESS: 9769 North U.S. Highway 29
Banks, Pike County, Alabama 36005

FACILITY I.D. NO.: 15723-109-013688
UST INCIDENT NO.: UST99-01-15

OWNER NAME: Pike County Board of Education
OWNER ADDRESS: 101 West Love Street
Troy, Alabama 36081

NAME & ADDRESS OF PERSON COMPLETING THIS FORM: Hadley Smith
Environmental-Materials Consultants, Inc.
2027 Chestnut Street
Montgomery, Alabama 36106

CLASSIFICATION	***DESCRIPTION***	***YES***	***NO***
CLASS A	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
A.1	Vapor concentrations at or approaching explosive levels that could cause health effects, are present in a residence or building.	☐	☒
A.2	Vapor concentrations at or approaching explosive levels are present in subsurface utility system(s), but no buildings or residences are impacted.	☐	☒
CLASS B	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
B.1	An active public water supply well, public water supply line, or public surface water intake is impacted or immediately threatened.	☐	☒
B.2	An active domestic water supply well, domestic water supply line, or domestic surface water intake is impacted or immediately threatened.	☐	☒
B.3	The release is located within a designated Wellhead Protection Area I.	☐	☒
CLASS C	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
C.1	Ambient vapor/particulate concentrations exceed concentrations of concern from an acute exposure, or safety viewpoint.	☐	☒
C.2	Free product is present on the groundwater, at ground surface, on surface water bodies, in utilities other than water supply lines, or in surface water runoff.	☒	☐

CLASSIFICATION	*DESCRIPTION*	*YES*	*NO*
CLASS D	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
D.1	There is a potential for explosive levels, or concentrations of vapors that could cause acute effects, to accumulate in a residence or other building.	☐	☒
D.2	A non-potable water supply well is impacted or immediately threatened.	☐	☒
D.3	Shallow contaminated surface soils are open to public access, and dwellings, parks, playgrounds, day care centers, schools or similar use facilities are within 500 feet of those soils.	☐	☒
CLASS E	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
E.1	A sensitive habitat or sensitive resources (sport fish, economically important species, threatened and endangered species, etc.) are impacted and affected.	☐	☒
CLASS F	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
F.1	Groundwater is impacted and a public well is located within 1 mile of the site.	☒	☐
	Presence or absence of groundwater impact has not been determined.		
F.2	Groundwater is impacted and a domestic well is located within 1,000 feet of the site.	☒	☐
	Presence or absence of groundwater impact has not been determined.		
F.3	Contaminated soils and/or groundwater are located within designated Wellhead Protection Areas (Areas II or III).	☐	☒
CLASS G	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
G.1	Contaminated soils and/or groundwater are located within areas vulnerable to contamination from surface sources.	☒	☐
GLASS H	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
H.1	Impacted surface water, stormwater or groundwater discharges within 500 feet of a surface water body used for human drinking water, whole body water-contact sports, or habitat to a protected or listed endangered plant and animal species.	☐	☒
CLASS I	LONG TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
I.1.	Site has contaminated soils and/or groundwater but does not meet any of the above-mentioned criteria.	☐	☒

ADDITIONAL COMMENTS:

1) In reference to C.2 - Free product has been observed periodically at this site. The most recent observance was October 13, 2015.

2) In reference to B.1 – There is a public water supply well approximately 0.87 miles southeast and hydraulically upgradient of the impacted groundwater plume. Due to the well's location and the direction of groundwater flow, it is not immediately threatened.

3) In reference to B.2. – There were no active domestic water supply wells found within 1,000 feet of the site. There was one well approximately 100 feet south (hydraulically upgradient) of the source area. The well has not been used for over 18 years (as of 2011) according to Pike County School Board personnel.

4) In reference to B.3 – The Wellhead Protection Area information was provided by the ADEM.

5) In reference to F.1 - A public water supply well is located approximately 0.87 miles southeast and hydraulically upgradient of the impacted groundwater plume.

6) In reference to F.2 - There is one domestic well approximately 100 feet south (hydraulically upgradient) of the source area. The well has not been used for over 18 years (as of 2011) according to Pike County School Board personnel.

7) In reference to G.1 - The site is located within an area that is vulnerable to contamination from surface sources according to Water Resources Investigations report 87-4187.

Complete the classification evaluation questions listed above. Upon completion, determine the highest rank of the site (A.1 is the highest rank) based on the statements answered with a yes.

Enter the determined classification ranking:	C.2

ADEM GROUNDWATER BRANCH
SITE CLASSIFICATION CHECKLIST
(5/8/95)

Section III

Corrective action plans utilizing dual-phase extraction as the remediation method were submitted to the Alabama Department of Environmental Management (ADEM) in 2005 and 2011. In a letter dated November 24, 2014, the ADEM determined that the corrective action plan needed to be re-evaluated.

Prior to submitting cost proposals to modify the corrective action plan Environmental-Materials Consultants, Inc. (EMC) contacted the ADEM project manager to discuss the site. It was decided that in-situ chemical oxidation and free product bailing was the way to proceed. In a letter dated May 29, 2015, cost proposal 38 was approved for the corrective action plan modifications. During a telephone conversation with the ADEM project manager it was decided that a groundwater monitoring event needed to be conducted before proceeding with the modifications.

The original modified corrective action plan was submitted to the ADEM on March 7, 2016. In-situ chemical oxidation (ISCO) is being proposed as the remediation method for the petroleum impacted groundwater. Regenesis provided recommendations for what products to use and the application design. Following a meeting with the ADEM in June of 2017, it was decided that additional groundwater sampling needed to be conducted.

Based on the additional analyses the Regenesis design specialist determined that the application of the ISCO product needed to be modified. The plan was submitted to the ADEM for a second time on September 8, 2017. In a letter dated March 16, 2018, the ADEM stated that the plan had been reviewed and it needed a P.E. signature. The plan was submitted for the third time on March 28, 2018.

In a letter dated June 15, 2018, the ADEM stated that the plan had been reviewed and determined that it was deficient because it did not have the following:

1) A detailed cleanup goal for each well.
2) A sampling and analysis plan.
3) A QA/QC plan.
4) A health and safety plan.

A more detailed discussion of the cleanup goals for each well and a more detailed sampling and analysis plan are included with this report. A QA/QC plan and a health and safety plan are also included.

Prior to preparing this modified corrective action plan EMC contacted Regenesis to see if the costs of the products had changed and we also gave them the most recent groundwater data. The design specialist that we

had previously been working with no longer works for Regenesis and the new one recommended adding an additional product and decreasing the amount of applications.

The proposed remediation activities are in two phases. The first phase will address the source area and will also be used as a pilot test for the second phase. The second phase is the remediation of a larger portion of the plume. The changes that Regenesis recommended are for the first phase. The previous plan included five rounds of injecting PersulfOx with the oxygen release compound (ORC) Advanced also being injected during the fifth application. This plan includes four rounds of PersulfOx and RegenOx with ORC Advanced also being injected during the fourth application.

BACKGROUND

The Pike County Board of Education Banks Middle School is located at 9769 North U.S. Highway 29 in Banks, Pike County, Alabama. An underground storage tank (UST) release was discovered in 1998.

One diesel UST and its associated piping were closed by removal in November of 1998. Soil contamination was discovered in the UST excavation. The TPH concentrations ranged from 14.3 parts per million (ppm) to 2,529 ppm.

A preliminary investigation was conducted in April of 1999 and four monitoring wells were installed. A secondary investigation was conducted in April of 2001 and seven monitoring wells were installed. In an effort to define the extent of the impacted groundwater additional monitoring wells were installed in 2011, 2012 and 2013. Twenty-four monitoring wells have been installed. They are located on the Banks Middle School property and on the off-site downgradient property. A site sketch with the monitoring well locations is included.

Site-specific target levels (SSTLs) were calculated during the Alabama Risk-Based Corrective Action evaluation in 2002. The groundwater resource protection (GRP) SSTLs were re-calculated in 2012 and accepted by the ADEM.

Soil samples collected during the preliminary investigation, secondary investigation and the 2011 well installation were submitted for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tertiary-butyl ether (MTBE), and polynuclear hydrocarbons (PAH) analyses. The soil samples collected during the 2012 and 2013 monitoring well installation activities were submitted for BTEX, MTBE and naphthalene analysis. The analytical results from the vadose zone soil samples do not exceed the SSTLs.

Tables with the analytical results are included.

In addition to groundwater samples being collected during the preliminary and secondary investigations, eighteen groundwater monitoring events have been conducted. From the preliminary in 1999 to the groundwater monitoring event in December of 2010, groundwater samples were submitted for BTEX, MTBE and PAH analyses. From 2010 the samples have been submitted for BTEX, MTBE and naphthalene analysis. A table with the historical groundwater analytical results is included.

Free product has been observed in three of the four monitoring wells located around the closed UST. The greatest thickness was 0.83 feet in monitoring well MW-1. Free product has not been observed in MW-1 or MW-4 since 2002. During the sampling event conducted in October of 2015, 0.02 feet of free product was observed in MW-2.

Free product has been recovered with petroleum-absorbent socks and six mobile enhanced multi-phase extraction (MEME) events. The MEME events were conducted from October 2002 to November 2011. A total of 2,724.96 pounds of hydrocarbons was recovered during the six MEME events, which is equivalent to 459.27 gallons.

A recovery well (RW-1) was installed in the source area in July of 2016. The recovery well and proposed subsequent multi-phase extraction events were part of the original modified corrective action plan. Only one extraction event was approved.

Environmental Products and Services of Vermont, Inc. (EPSVT) provided the services for the High Vacuum Extraction (HVE) event. The event was conducted on September 9, 2016. Groundwater and vapors were extracted from RW-1 for eight hours and from MW-1 and MW-2 for approximately seven hours. The event yielded 1,050 gallons of liquid. The event also yielded 91.00 pounds of hydrocarbons, which is equivalent to 14.77 gallons.

Based on the July 2017 groundwater monitoring event the total BTEX concentrations ranged from below the detection limit, method (BDL) to 47.48 ppm. MTBE concentrations ranged from BDL to 4.79 ppm. Naphthalene concentrations ranged from BDL to 1.79 ppm. Site sketches with the analytical results are included.

The remediation goals are based on the groundwater resource protection SSTLs. Each monitoring well has an SSTL and they are included on the groundwater analytical table. Based on the July 2017 groundwater monitoring event (last time all of the wells were sampled) the contaminant plume has been defined. The most downgradient monitoring well (MW-24)

had a benzene concentration of 0.009 ppm and the SSTL is 0.009 ppm. The benzene SSTL is the most conservative. Based on the benzene concentrations the contaminant plume that exceeds the SSTLs is approximately 575 feet long and approximately 110 feet wide. A site sketch with the estimated plume dimensions is included.

The depths of the twenty-four monitoring wells range from approximately 35 feet below ground surface (BGS) to approximately 50 feet BGS. The generalized site stratigraphy consists of (excluding the surficial material) silty sand to approximately 15 feet BGS; sandy clay from approximately 15 feet BGS to approximately 25 feet BGS; fine to medium grained sand from approximately 25 feet BGS to the deepest sampling depth of approximately 50 feet BGS. A generalized cross section is included.

The site is apparently underlain by the Clayton Formation (Geologic Map of Alabama: Osborne, 1989). The Clayton Formation overlies the Providence Sand and outcrops in central and southern parts of Pike and Barbour Counties. It ranges in thickness from approximately 70 feet at the northern limits of the outcrop to 180 feet in the southern part of the study area. In the outcrop areas, the lower part of the formation consists of 5 to 15 feet of fine to coarse grained sand that locally contains gravel, lignite, and clay pebbles. The base of the bed generally has a thin layer of sandstone. In the subsurface, the basal sand grades upward into sand overlain by sandy to clayey, fossiliferous limestone up to 25 feet thick. The Clayton grades into sandy limestone in down dip areas (Water Resources Investigations Report 87-4187, Geohydrology and Susceptibility of Major Aquifers to Surface Contamination in Alabama; Area 9: Kidd, 1987). The study area for that report includes Barbour, Bullock, Macon, Pike, and Russell Counties in Alabama.

The Clayton Formation along with the Nanafalia Formation make up the Nanafalia-Clayton aquifer. This aquifer is considered a major aquifer in the study area. With yields of up to 0.5 Mgal/d, the Clayton provides the Pike County Water Authority and the towns of Baker Hill, Brundidge, Elamville, and Louisville with water (Kidd, 1987).

Based on the Water Resources Investigations Report 87-4187, at the time of its publication, there was one public water supply well owned by the town of Banks located within one mile of the site. This well is designated Well #1 and produces water from the Ripley Formation. It is 476 feet deep and is screened from 446 to 476 feet. Well #1 is approximately 0.87 miles southeast of the site and is hydraulically upgradient of the site. The location of Well #1 is shown on the Topographic Orientation Map in the Figures Section.

One water supply well has been found within 1,000 feet of the site via a visual reconnaissance of surrounding properties. The water well is located approximately 100 feet south of the source area and is hydraulically upgradient. According to the Banks Middle School personnel the well has not been in use for approximately 18 years (as of 2011). Water for the school is provided by the City of Banks. The well is shown on the Area Sketch in the Figures Section.

During the monitoring well installations groundwater was encountered in the fine to medium grained sands mentioned above. The depth to groundwater in the monitoring wells during the July 2017 sampling event ranged from 30.14 feet to 42.52 feet below the tops of the well casings. Based on the groundwater elevations in the monitoring wells the groundwater is flowing generally towards the northwest with a hydraulic gradient of 0.02 feet/foot. A site sketch with the groundwater potentiometric surface is included.

Section IV

PLAN

Based on conversations with the ADEM project manager it was decided that modifying the corrective action plan from dual-phase extraction to treating the contaminants with in-situ chemical oxidation (ISCO) was an appropriate approach. EMC worked with Regenesis in deciding what products to use and the application design. Regenesis is a company that provides products for groundwater remediation at contaminated sites. They have been in business since the mid 1990's and we have worked with them in the past.

Based on the Environmental Protection Agency Guide: How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites; 1995, a few site-specific conditions need to be evaluated to determined if chemical oxidation is an appropriate approach. Chemical oxidation is not likely to cost effectively address free product. Cost proposals were submitted to continue with quarterly multi-phase extraction and groundwater monitoring events. The intent was to get the free product recovery process started and possible completed by the time the ISCO was approved.

Understanding the sites hydrogeologic conditions is important because these conditions often determine the extent to which the chemical oxidants may come in contact with the petroleum contaminants. Based on the soil boring logs the soils in the treatment interval consist of sands. No clays or other less permeable soils were encountered. An undisturbed soil sample was collected from approximately 30 to 32 feet BGS and

appears to be representative of the uppermost aquifer's saturated zone. Sieve analysis showed that approximately 80% of the grains were medium to slightly coarse sand, approximately 5% of the grains were very coarse sand and approximately 15% of the grains were fine sand.

Intrinsic permeability is a measure of the ability of soil to transmit fluids. It can be calculated from hydraulic conductivity measurements taken from slug tests. On April 27, 2001, slug tests were performed on four selected monitoring wells (MW-5, MW-6, MW-7, MW-8) to determine the hydraulic conductivity in the area of the aquifer surrounding these wells. The average hydraulic conductivity was 1.04E-05 and the estimated intrinsic permeability is 1.02E-09. This is effective for chemical oxidation.

Chemical oxidation technologies are usually used to address contaminants in the source area. The costs associated with chemical oxidation can make this not a feasible option for large petroleum contaminant plumes. The estimated length of the plume that exceeds the SSTLs is approximately five hundred and seventy five feet. Approximately four hundred feet of the downgradient plume is located off-site and underneath property that is heavily wooded and not very accessible. A bulldozer had to be used to clear paths for the monitoring well installations.

During the design of the ISCO treatment system Regenesis stated that the chemicals are typically injected into the subsurface on fifteen-foot intervals. The costs of the chemical oxidation products and the clearing of the off-site wooded property make injecting the products in this area not feasible. The size of the proposed treatment area is approximately 16,500 ft^2. It extends from the source area to the tree line and includes the areas with the highest contaminant concentrations. Based on the July 2017 groundwater monitoring event the average benzene concentration in the treatment area is 1.216 ppm. The average benzene concentration for the plume that exceeds the SSTLs and is located in the wooded area is 0.643 ppm. The remediation in the treatment area should enhance the natural attenuation in the downgradient plume by providing residual dissolved oxygen that is used by aerobic microorganisms to biodegrade contaminants. A site sketch with the treatment area is included.

Analytical results and relevant site data were submitted to Regenesis for their product and design recommendations. Regenesis determined that the use of PersulfOx and RegenOx as the ISCO and the use of the ORC Advanced, would be appropriate products to use in the remediation.

PersulfOx is an advanced in situ chemical oxidation reagent that destroys organic contaminants through abiotic chemical oxidation reactions. It is an all-in-one product with a built in catalyst, which activates the sodium

persulfate component and generates contaminant-destroying free radicals without the addition of a separate activator. The catalyst enhances the oxidative destruction of petroleum hydrocarbons. PersulfOx is a relatively safe and easy to use ISCO product. The PersulfOx technical description is included.

RegenOx maximizes ISCO performance through a two-part product system; a sodium percarbonate oxidizer complex activated by patented surface catalyst system. The technology degrades pollutants through direct oxidation, as well as through the generation of a suite of free radical compounds, which in turn oxidize recalcitrant contaminants. RegenOx rapidly and effectively destroys a range of target contaminants including petroleum hydrocarbons. The RegenOx technical description is included.

ORC Advanced is used to accelerate naturally occurring in situ bioremediation of petroleum hydrocarbons. It provides a controlled release, supplemental source of oxygen to the subsurface, which is made available to aerobic, hydrocarbon-degrading bacteria. ORC Advanced can increase the rates of petroleum hydrocarbon biodegradation at least ten to one hundred times over naturally-occurring, non-enhanced rates. It is environmentally safe and easy to install. The ORC Advanced technical description is included.

The proposed remediation activities will be conducted in two phases. The first phase will consist of an approximate 1,600 ft^2 area that address the source. The PersulfOx and RegenOx will be applied in twenty-five injection points that will be installed on approximate eight-foot centers. The ORC Advanced will be applied in sixteen injection points that will be installed on approximate ten-foot centers. A site sketch with the source treatment area is included. The cleanup goal for the first phase is to get the benzene concentrations in the source area monitoring wells (MW-1, MW-2, MW-4) below 0.959 ppm. A site sketch with the July 2017 benzene concentrations and the cleanup goals for each applicable monitoring well is included.

The injection points will be installed with a Geoprobe utilizing two and a quarter inch diameter drive rods. The rods will be advanced to approximately 39 feet BGS. The products will be injected through the drill rods from approximately 39 feet to 29 feet BGS. The treatment zone is based on the depth that the saturated zone was encountered during the installation of the monitoring wells in this area and on the fluctuations of the depths to groundwater in the monitoring wells. Soil boring logs from this area and a table with the depths to groundwater in the monitoring wells are included.

Technical Drilling Services, Inc. will provide the chemical injection

services. They have experience with this type of project and have been provided with the safety data sheets and application instructions. The products will be injected under pressure. Between applications the probe points will be filled with sand and caped off with concrete. After the fourth application the probe points will be filled with grout.

The PersulfOx/RegenOx slurry will consist of 173 lbs of PersulfOx, 55 lbs of RegenOx and 187 gallons of water injected into each probe point. The total volume per point will be approximately 200 gallons. Approximately twenty gallons will be injected for each vertical foot. Four rounds of PersulfOx/RegenOx will be injected. The applications will be conducted on approximate four week intervals.

During the fourth PersulfOx/RegenOx application the ORC Advanced will also be injected. The ORC Advanced slurry will consist of 60 lbs of ORC Advanced and 17 gallons of water injected into each probe point. The total volume per point will be approximately 19 gallons. A copy of the Regenesis Design Summary is included.

Our contact for the Banks Middle School is Mr. Mike Johnson, Maintenance Supervisor for the Pike County Board of Education. Based on a July 5, 2017, conversation he did not think that doing the Geoprobe work while school was in session would be a problem. That end of the school building is a computer lab and the only issue would be if they were having testing during that time. He will be contacted prior to scheduling the work. Mr. Johnson also said that we could use the schools water.

Regenesis will ship the products to the site for each injection event. They will be kept away from the school building and covered with tarps. EMC does not anticipate the injection products reaching the ground surface but if they do the injections will stop. If any product is left over it will be taken back to the EMC office and used during the next injection event.

The chemistry of ORC Advanced allows for a gradual, controlled release of oxygen for up to twelve months. EMC recommends that four quarterly groundwater monitoring events be conducted. The first three quarters will include collecting groundwater samples from the recovery well and monitoring wells MW-1 through MW-9. During the fourth quarter groundwater samples will be collected from all twenty-three monitoring wells and the recovery well.

During each groundwater monitoring event the static water level will be measured and recorded for each well to be sampled. The measurements will be used to calculate the total volume of water to be removed and the potentiometric groundwater elevations. The product/water interface meter will be rinsed with soap and water between wells to reduce the risk

of cross-contamination.

The wells to be sampled will then be purged with dedicated disposable bailers of a volume of water equal to approximately three times the wetted casing volume or until dry. Latex gloves will be worn while bailing and discarded between wells to reduce the risk of cross-contamination. A sample from each well will be transferred to portable water quality meters that measure dissolved oxygen, pH and oxidation-reduction potential. The purge water from wells with recent contaminant concentrations above the ADEM initial screening levels will be placed into a drum. The purge water will be transported to Allied Energy Corporation in Birmingham for disposal.

Groundwater samples will be collected from each purged well with its designated bailer. The bailers will then be discarded. Disposable latex gloves will be worn and changed between wells. The samples will be placed in 40-milliliter glass vials and preserved by the addition of hydrochloric acid and refrigeration. All samples will be refrigerated on site, in transit and while awaiting shipment. They will be submitted under chain of custody to Sutherland Environmental Company, Inc. for BTEX, MTBE and naphthalene analysis. The samples will be analyzed using EPA Method 8260B. A duplicate sample will be collected from one monitoring well for quality control. The results for each groundwater monitoring event will be reported in the natural attenuation monitoring report forms.

This first phase of remediation activities will also be used as a pilot test for the second phase. The second phase is the remediation of a larger portion of the treatment area and consists of more injection points. A site sketch with the proposed injection points is included. The first phase will tell us if the remediation efforts are successful and will also tell us what, if any, changes we need to make in the application process.

The second phase includes injecting PersulfOx into sixteen probe points in an approximate 1,600 ft^2 area around MW-6. The probe points will be installed with a Geoprobe on approximate ten-foot centers. The PersulfOx slurry will be mixed the same as it was for the source treatment area and will be injected at approximately the same depth. The PersulfOx application will consist of three rounds on four week intervals.

ORC Advanced barriers will be placed across the whole treatment area where it had not been injected during the source area treatment. The ORC Advanced will be injected into fifty probe points. The probe points will be placed on approximate ten-foot centers and will extended to approximately 39 feet BGS. The ORC Advanced will be injected from approximately 39 feet to 29 feet BGS. The slurry will consist of 48 lbs. of ORC Advanced and 13 gallons of water injected into each probe point.

The total volume per point will be 16 gallons.

The cleanup goal for the second phase will be to get the benzene concentration in MW-6 below 0.125 ppm and to provide residual dissolved oxygen to enhance the natural attenuation in the rest of the plume. The SSTL for each monitoring well is listed on the groundwater analytical results table. A site sketch with the cleanup goal for each applicable well is also included. The second phase is based partly on groundwater analytical results from 2016 and 2017. When it is time to implement the second phase it will probable need to be modified.

EMC recommends that four quarterly groundwater monitoring events be conducted for the second phase. The sampling method and analysis will be the same as the first phase. During the first three quarters groundwater samples will be collected from monitoring wells MW-6 through MW-9 and MW-13, MW-14, MW-15. During the fourth quarter groundwater samples will be collected from all twenty-three monitoring wells and the recovery well.

The ISCO and ORC Advanced remediation requires an Underground Injection Control (UIC) Permit prior to initiating the injection activities. The UIC Permit was obtained on April 6, 2017. Because RegenOx has been added to the remediation efforts the UIC Permit has to be modified. A cost proposal to modify the permit has been submitted. Cost proposals to implement phase one of the modified corrective action plan have also been submitted. Access will have to be obtained from two off-site property owners.

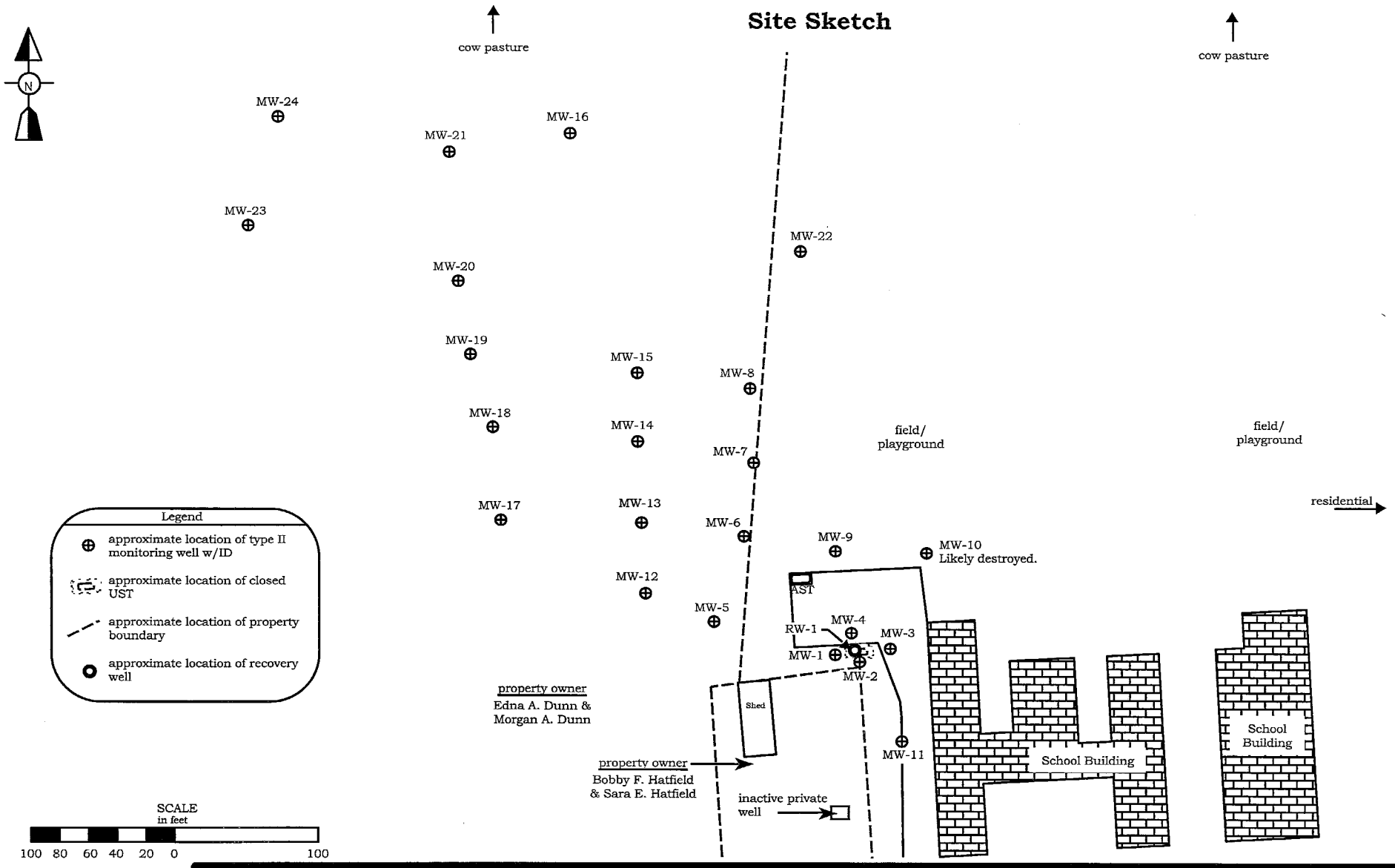
Section V

CONCLUSIONS

The decision to modify the corrective action plan from dual-phase extraction to chemical injection was based on conversations with the ADEM project manager. Because of the size of the plume and the access issues with part of it, remediation of the source area and the hot spots within the plume is a reasonable approach. Because a pilot test has not been conducted, dividing the remediation activities into two phases is an appropriate approach.

Cost proposals to implement the first phase of the corrective action activities have been submitted. The 2016 costs for the PersulfOx and the ORC Advanced for the second phase of the plan are included in the Regenesis Appendix of this report.

Site Sketch

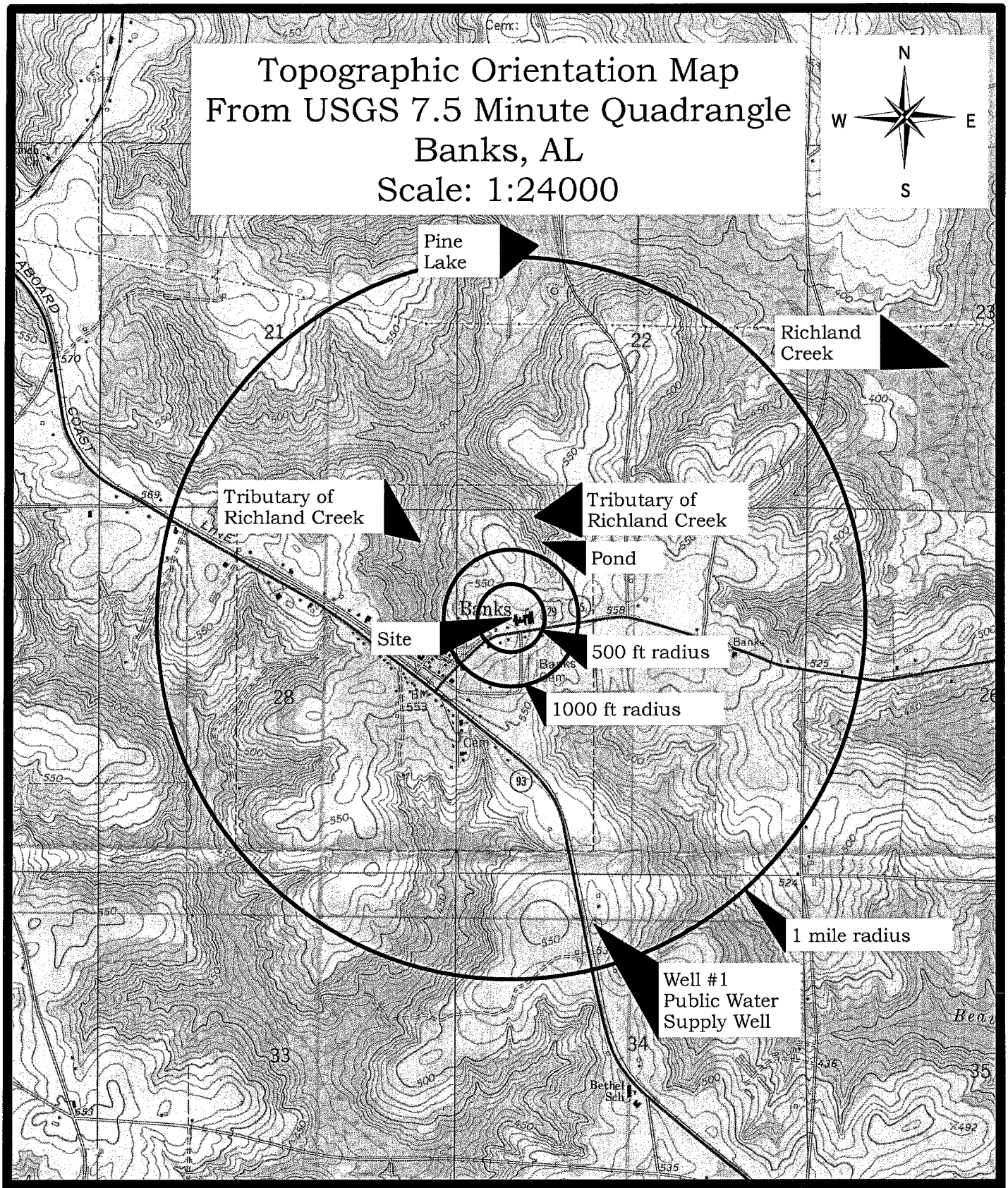


Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-148	DRAWN BY: HKS
DATE: 8/23/16	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

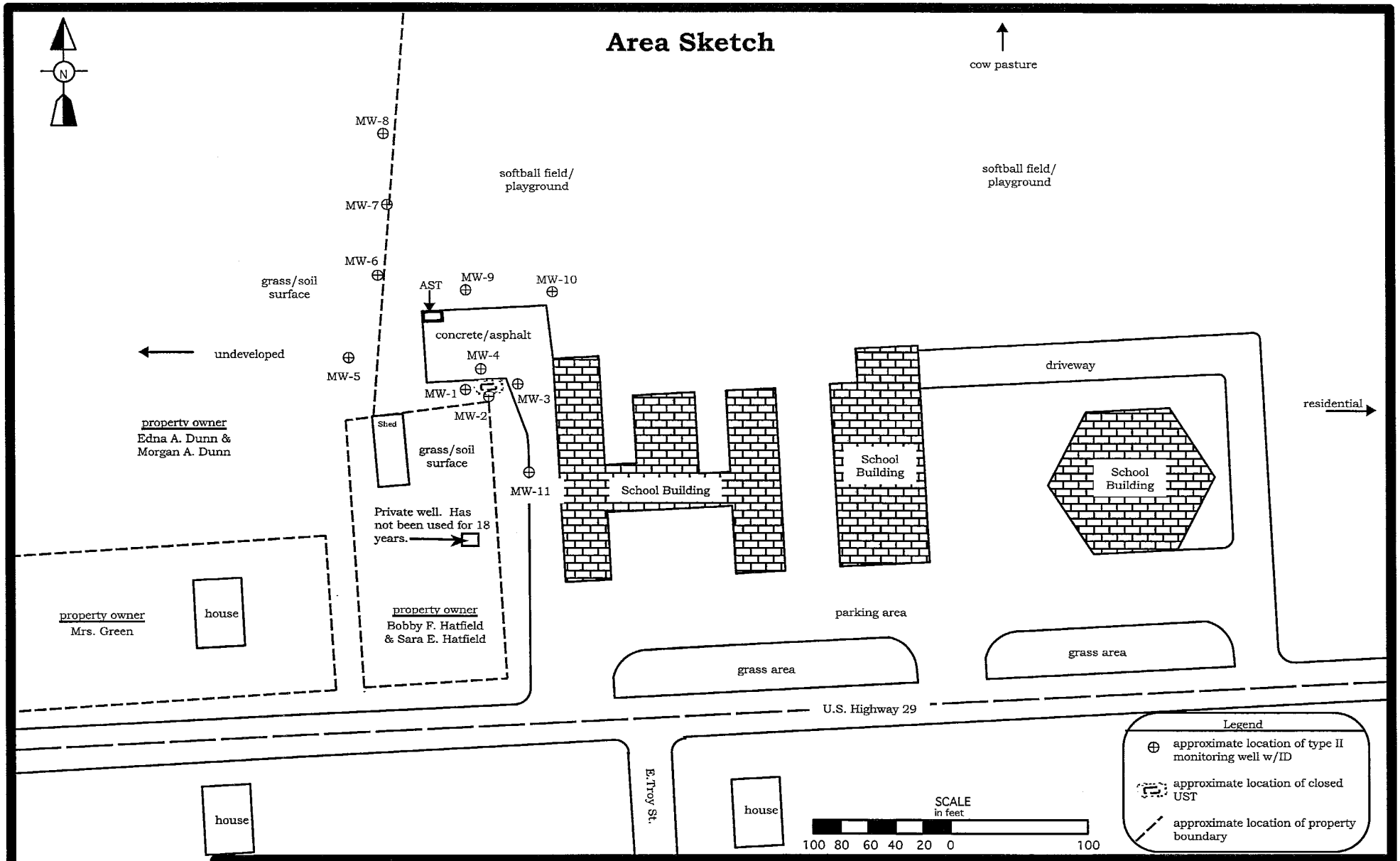
Topographic Orientation Map
From USGS 7.5 Minute Quadrangle
Banks, AL
Scale: 1:24000



Banks Middle School 9769 North U.S. Highway 29 Banks, Pike County, Alabama 36005 Facility ID# 15723-109-013688 UST 99-01-15	JOB NUMBER: MA-1215	SCALE: 1:24000
	DRAWING NO: 1215-Topo 1	DRAWN BY: SPB
	DATE: 9/14/11	CHECKED BY: WHK

EMC
ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Area Sketch



Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-103	DRAWN BY: SPB
DATE: 9/7/11	CHECKED BY: WHK

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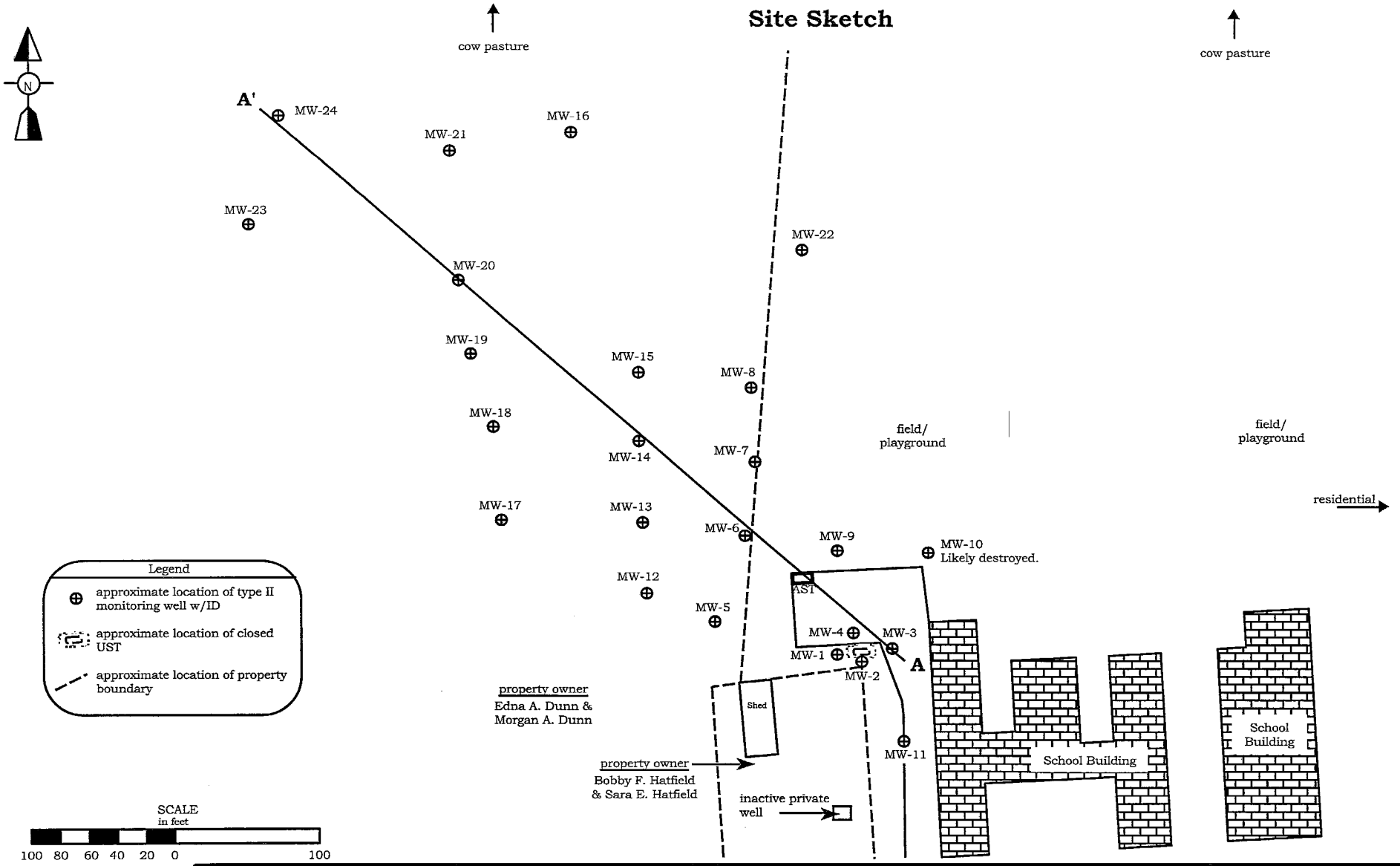
Site Sketch

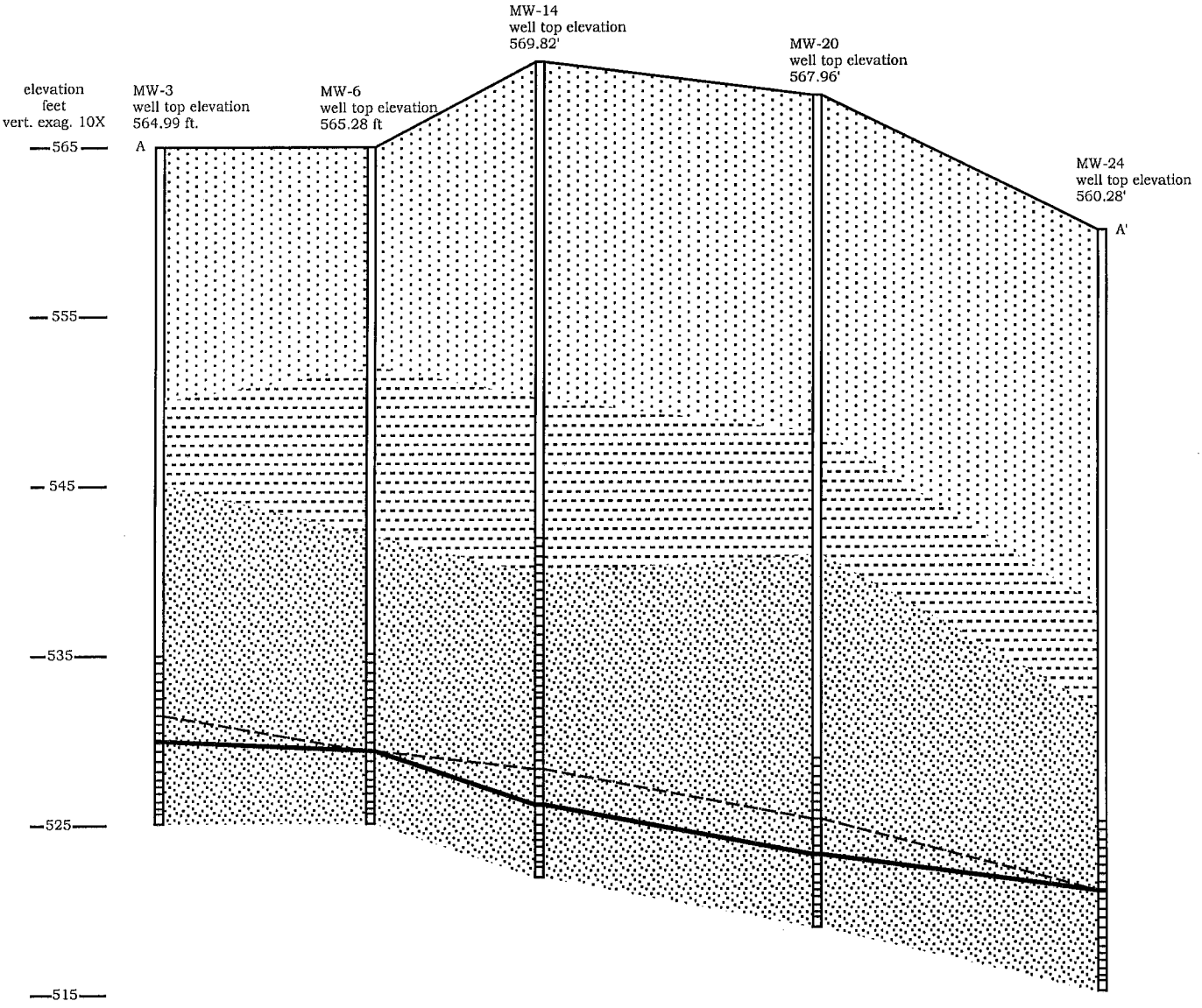


Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-142	DRAWN BY: HKS
DATE: 12/16/15	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Sectional View
(A to A')



Legand

- silty sand
- clay
- fine to medium grained sand
- approximate depth of initial groundwater
- groundwater potentiometric surface based on October 2015 depths to groundwater

note: The stratigraphic breaks and initial groundwater depths are speculative and based on the soil borings. The soil borings were installed in May 1999, April 2001, August 2011, April 2012 and July 2013. Elevations are based on a temporary benchmark which was determined by interpolating between contour lines on the topographic quadrangle.

SCALE
in feet

100 80 60 40 20 0 100

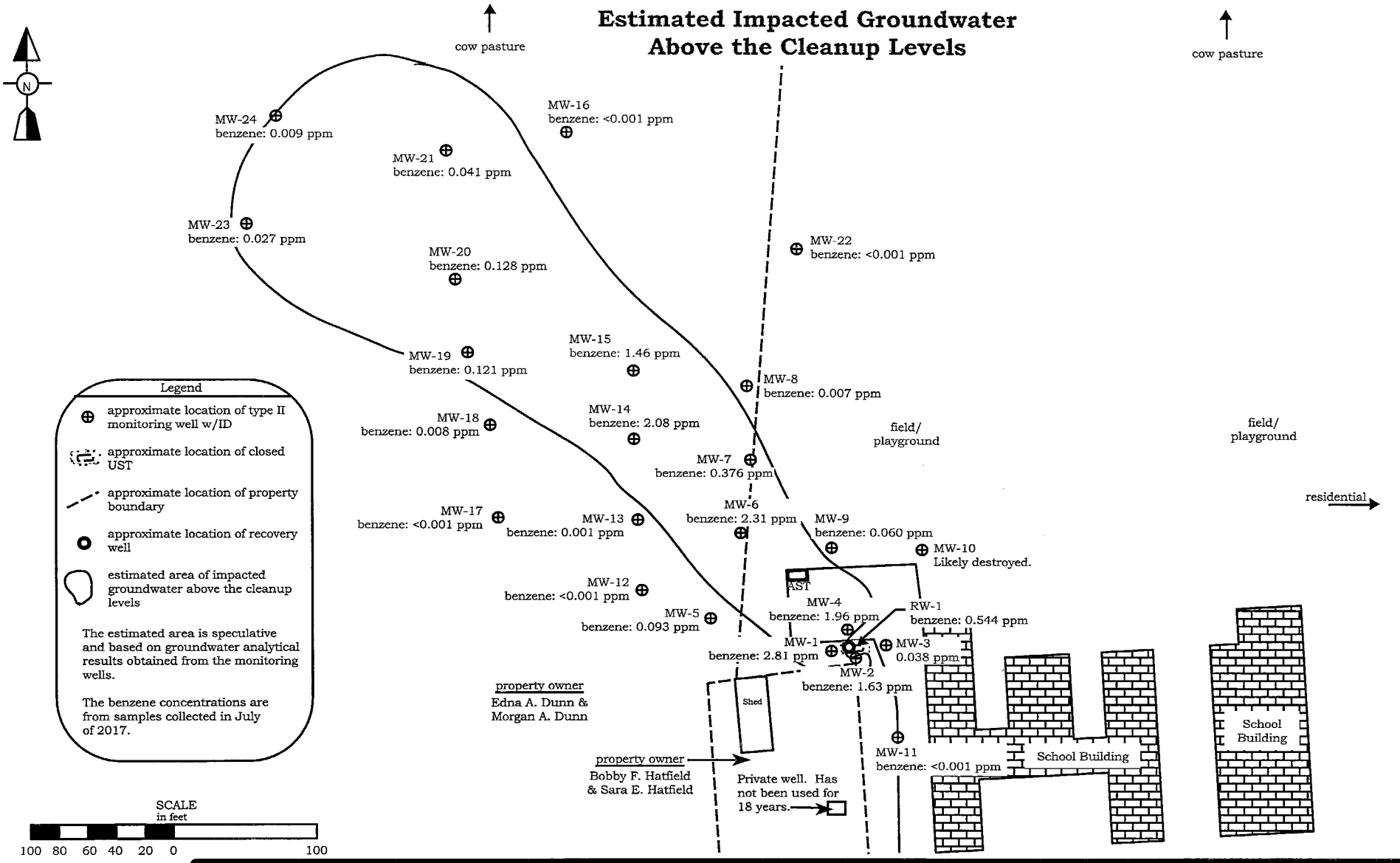
VERTICAL EXAGGERATION 10X

Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID: 15723-109-013688
UST: 99-01-15

JOB NUMBER: MA-1215	SCALE: 1"=100' vertical exaggeration = 10X
DRAWING NO: 1215-142A	DRAWN BY: HKS
DATE: 12/16/15	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Estimated Impacted Groundwater Above the Cleanup Levels

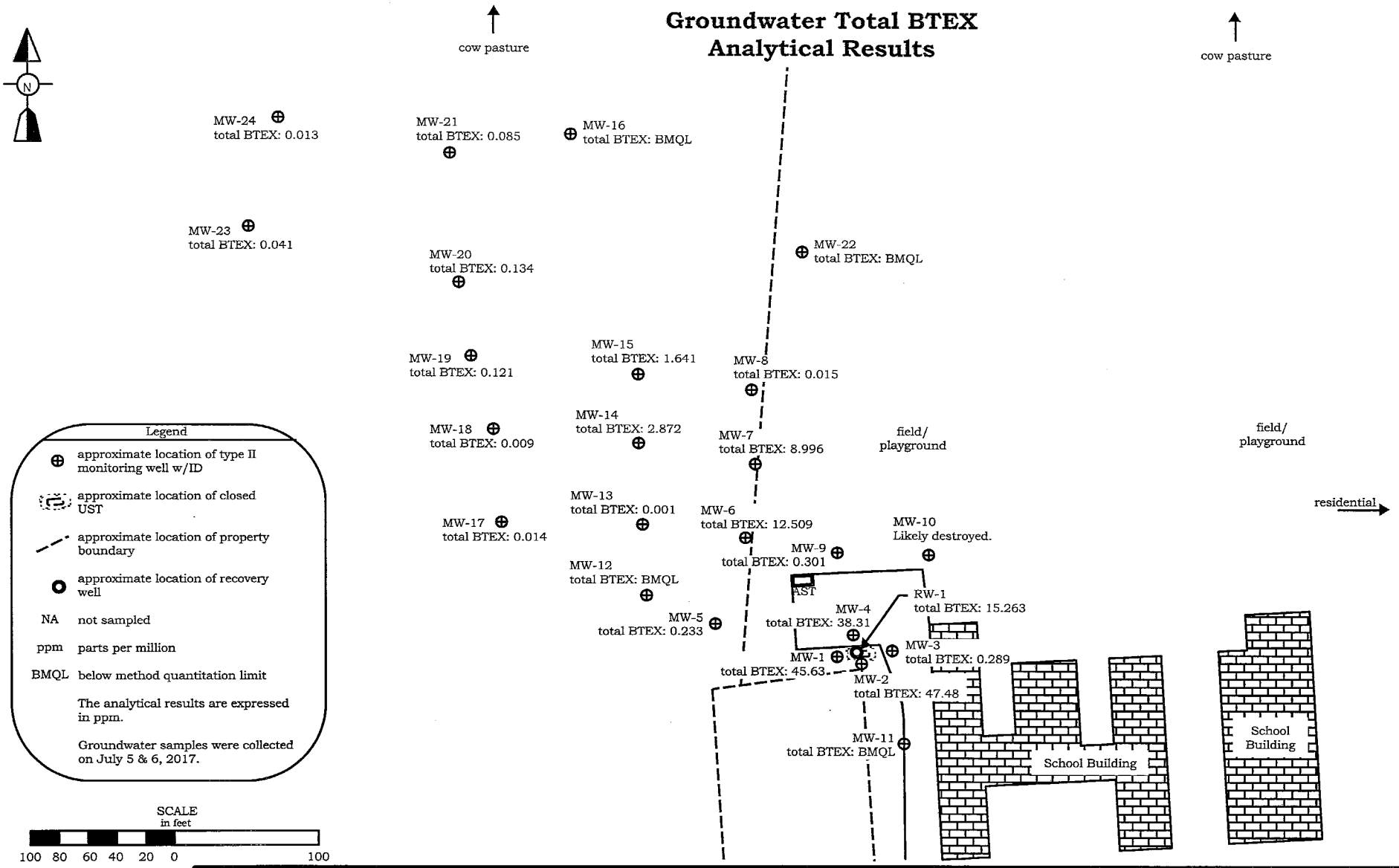


Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-169	DRAWN BY: HKS
DATE: 9/7/17	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Groundwater Total BTEX Analytical Results

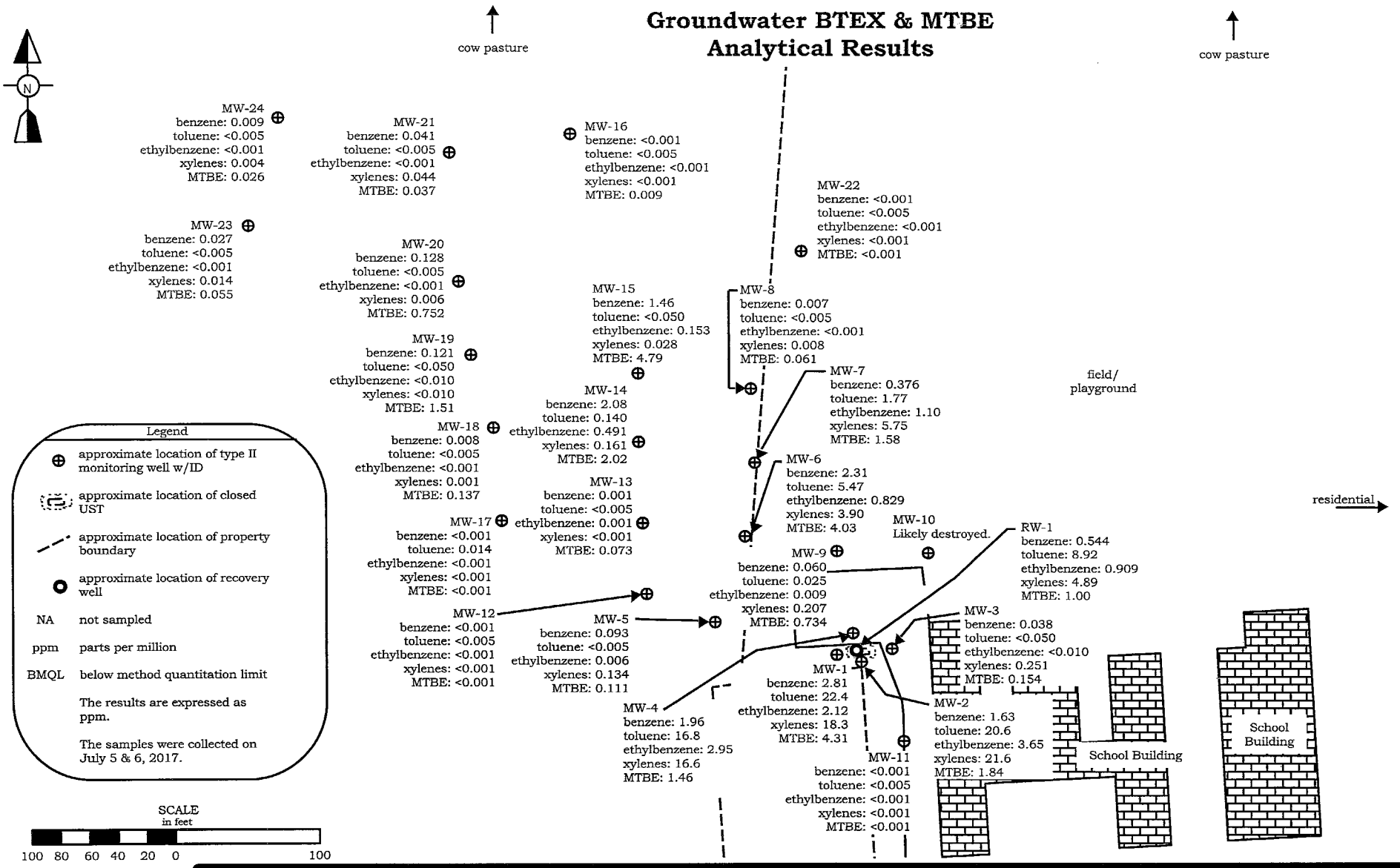


Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-160	DRAWN BY: HKS
DATE: 8/2/17	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Groundwater BTEX & MTBE Analytical Results

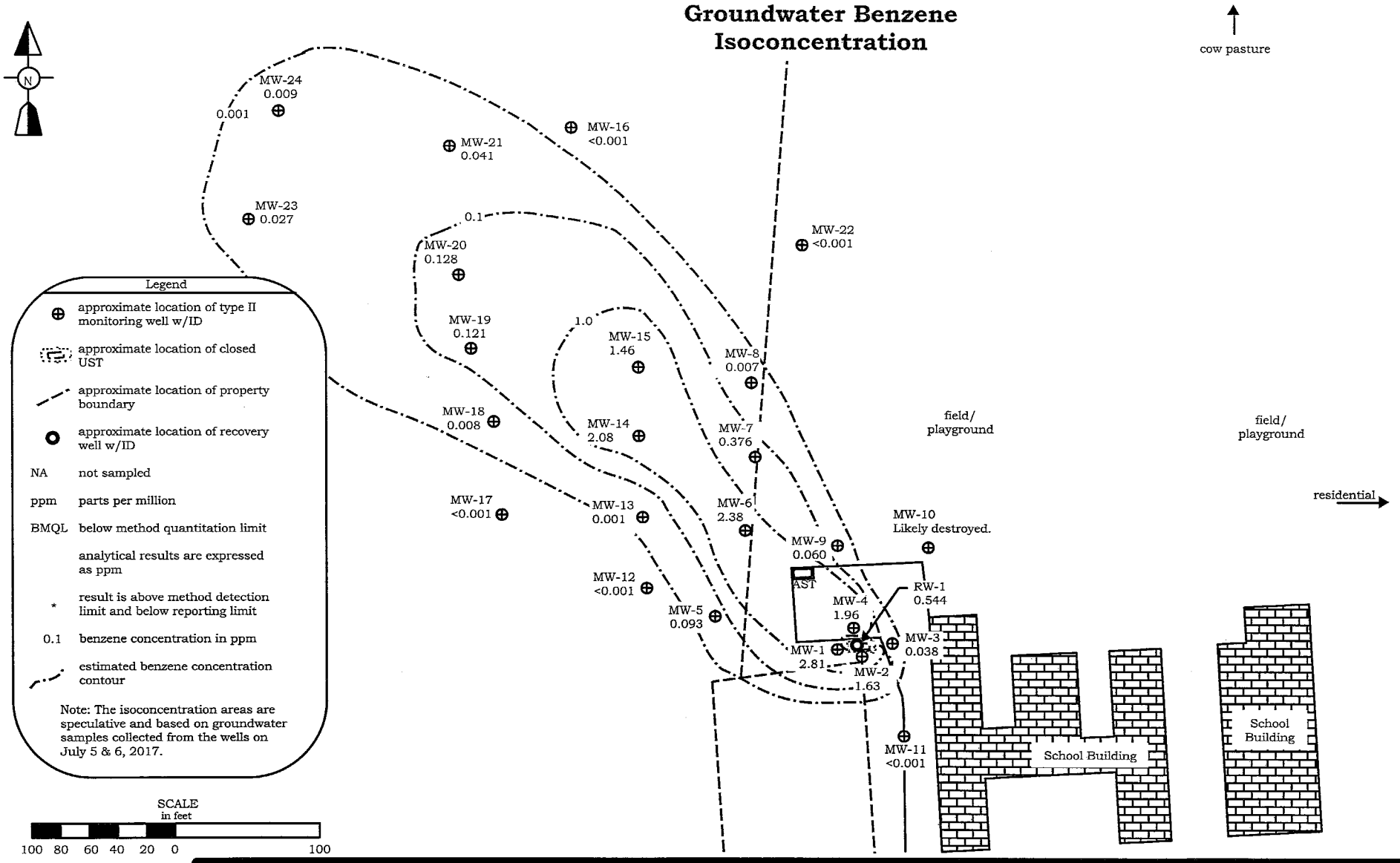


Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-161	DRAWN BY: HKS
DATE: 8/2/17	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Groundwater Benzene Isoconcentration

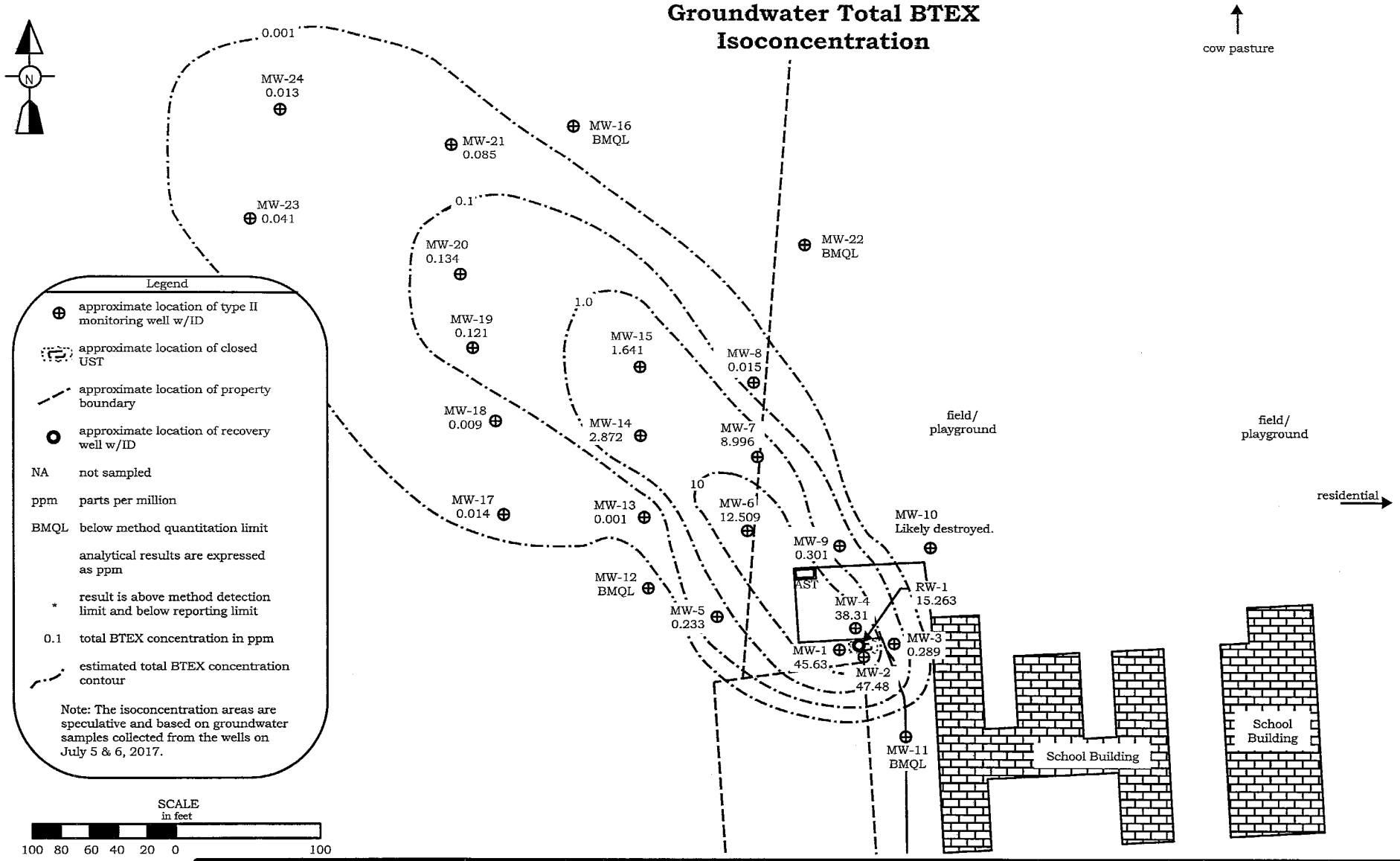


Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-166	DRAWN BY: HKS
DATE: 8/4/17	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Groundwater Total BTEX Isoconcentration



Legend

- ⊕ approximate location of type II monitoring well w/ID
- approximate location of closed UST
- approximate location of property boundary
- approximate location of recovery well w/ID
- NA not sampled
- ppm parts per million
- BMQL below method quantitation limit
- analytical results are expressed as ppm
- * result is above method detection limit and below reporting limit
- 0.1 total BTEX concentration in ppm
- estimated total BTEX concentration contour

Note: The isoconcentration areas are speculative and based on groundwater samples collected from the wells on July 5 & 6, 2017.

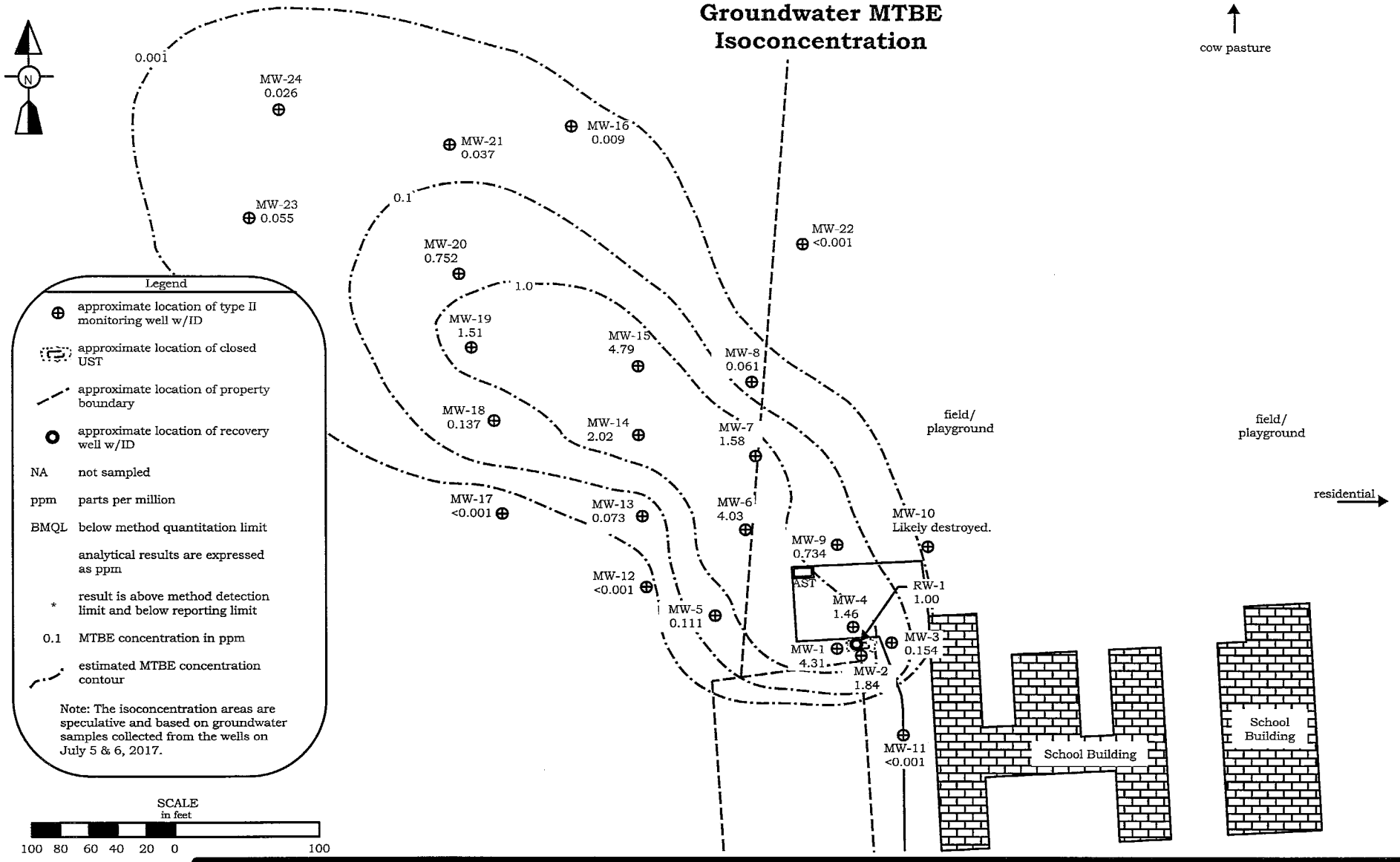
SCALE
in feet
100 80 60 40 20 0 100

Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-165	DRAWN BY: HKS
DATE: 8/4/17	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Groundwater MTBE Isoconcentration

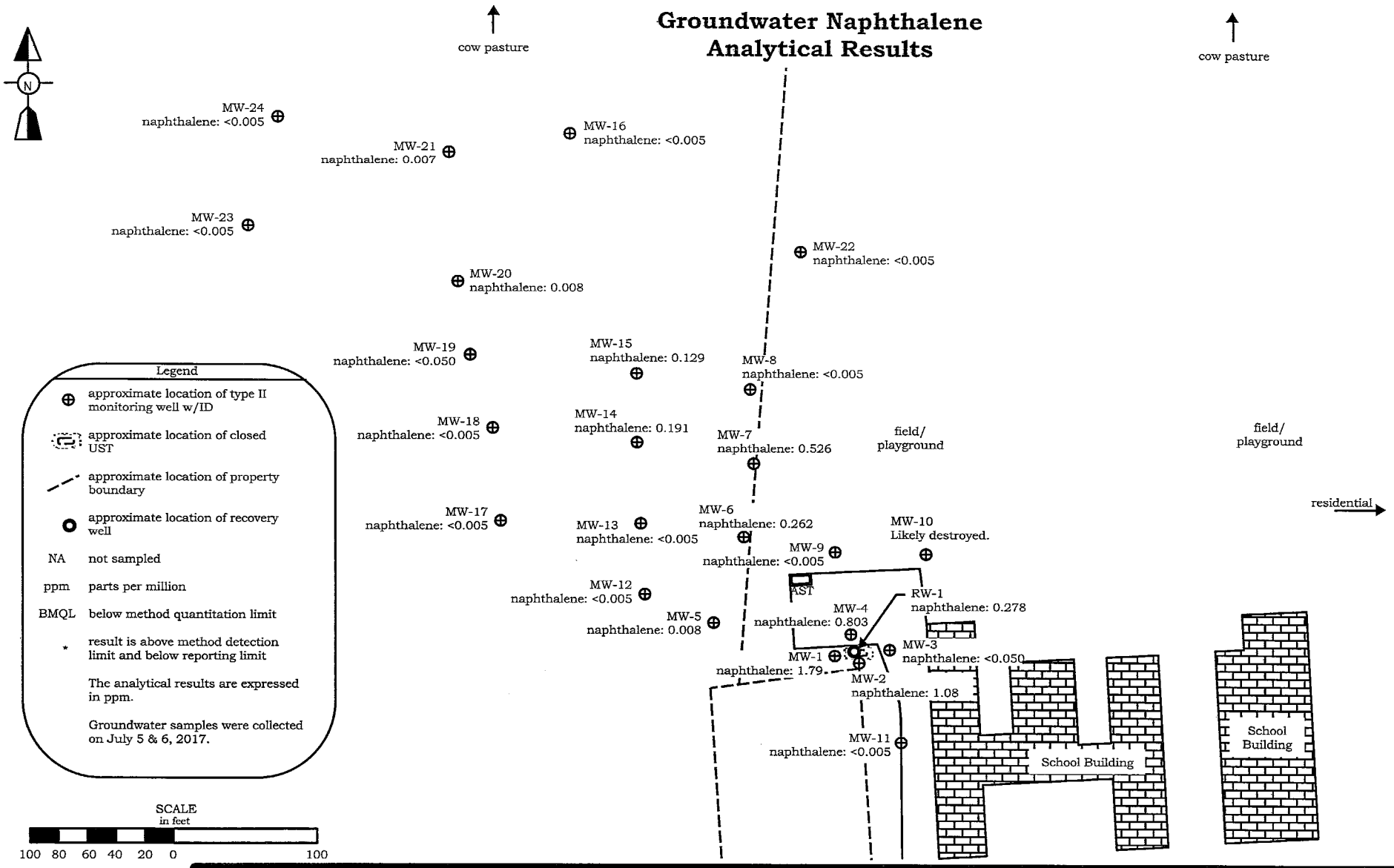


Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-167	DRAWN BY: HKS
DATE: 8/4/17	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Groundwater Naphthalene Analytical Results

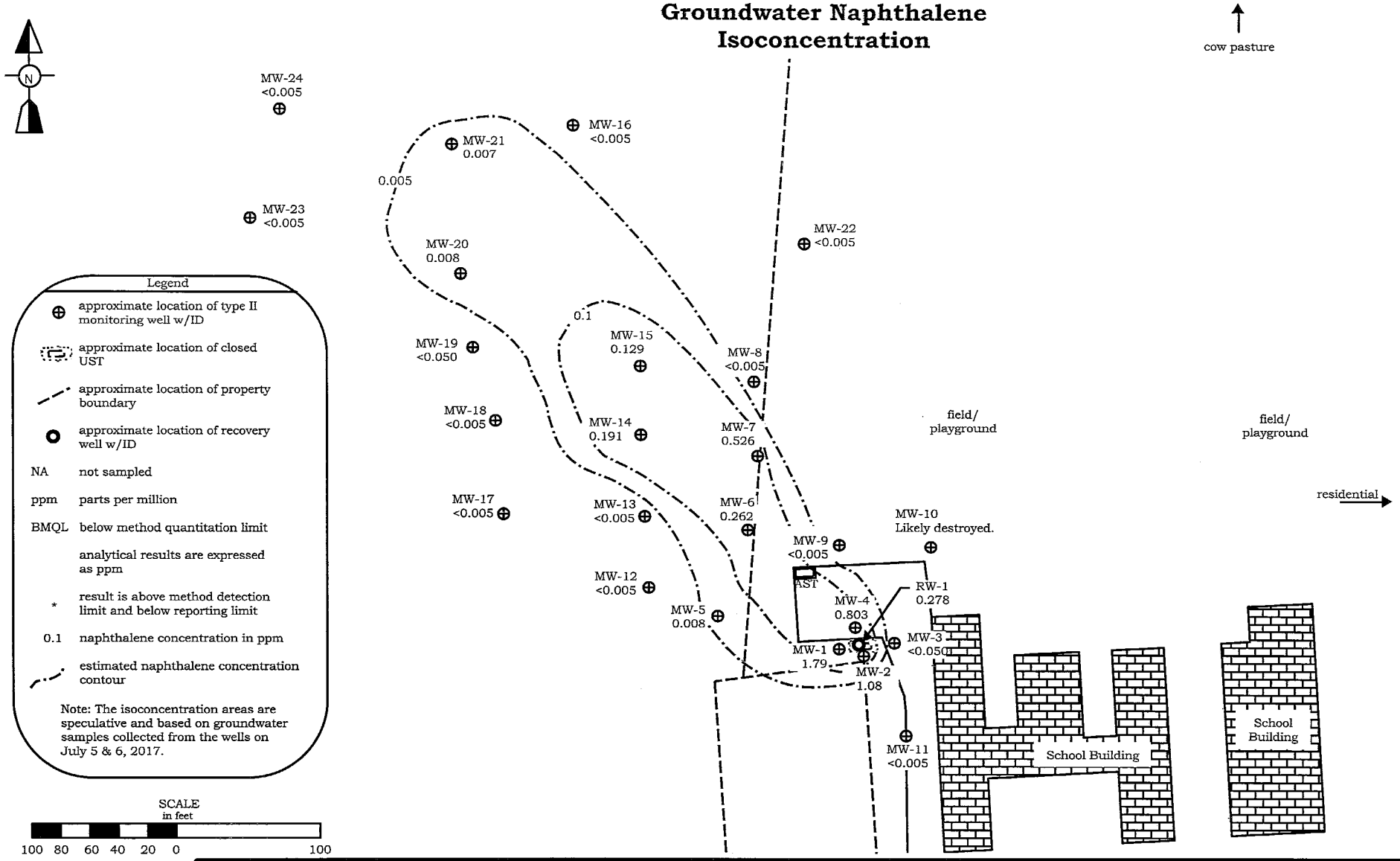


Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-162	DRAWN BY: HKS
DATE: 8/2/17	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Groundwater Naphthalene Isoconcentration



Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-168	DRAWN BY: HKS
DATE: 8/4/17	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Groundwater BTEX, MTBE & Naphthalene
Analytical Results
Banks Middle School

Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
MW-1						
5/14/99	21.900	51.100	4.800	23.800	24.100	0.690
4/27/01	0.02' Free Product (1/4")					
4/23/02	0.83' Free Product					
5/22/02	0.81' Free Product					
8/14/02	0.29' Free Product					
11/14/02	16.600	17.300	4.600	23.800	16.000	0.800
6/23/04	25.300	28.600	4.410	23.500	42.200	0.592
9/14/05	40.800	55.700	5.520	31.800	16.800	4.400
6/1/07	9.730	35.000	4.310	27.700	5.150	NA
4/20/10	14.200	45.200	4.220	26.800	52.900	1.380
8/11/10	11.200	30.400	2.020	14.400	26.300	0.848
12/16/10	11.600	42.400	4.260	29.800	6.690	2.820
9/8/11	0.44 feet free product					
5/1/12	0.53 feet free product					
11/8/12	3.720	25.200	3.400	21.200	2.960	2.120
7/18/14	6.700	56.000	2.400	30.600	13.300	** 0.776
10/13/15	4.640	37.800	3.440	28.200	3.960	1.340
8/17/16	5.000	36.200	3.260	37.000	22.200	1.910
7/5/17	2.81	22.4	2.12	18.3	4.31	1.79
10/19/17	3.050	29.600	2.900	24.100	3.960	2.360
GRP Source	0.959	192.000	134.000	175.000	3.840	3.840
MW-2						
5/14/99	19.050	46.700	3.950	18.300	5.200	0.860
4/27/01	0.01' Free Product (1/8")					
4/23/02	38.400	40.100	5.000	24.000	34.800	0.369
5/22/02	39.797	29.277	6.124	30.742	25.858	0.419
8/14/02	0.62' Free Product					
11/14/02	0.18' Free Product					
6/23/04	19.800	27.800	4.110	19.700	10.600	0.831
9/14/05	Not Found					
6/1/07	14.200	80.900	7.770	44.000	26.400	NA
4/20/10	10.600	51.900	5.730	30.300	3.850	2.530
8/11/10	8.270	39.300	2.850	19.200	3.390	0.875
12/16/10	6.780	42.200	4.560	24.800	2.000	1.630
11/8/12	0.03 feet of free product					
7/18/14	4.980	62.800	3.600	44.800	7.520	1.300
10/13/15	0.02 feet of free product					
8/17/16	3.660	29.400	4.180	35.900	18.800	1.750
7/5/17	1.63	20.6	3.65	21.6	1.84	1.08
10/19/17	1.260	25.000	5.270	29.900	4.090	3.160
GRP Source	0.959	192.000	134.000	175.000	3.840	3.840
MW-3						
5/14/99	0.650	2.550	0.750	4.400	0.100	0.148
4/30/01	0.219	0.600	0.362	0.876	0.560	0.179
4/23/02	7.500	22.100	3.300	17.300	4.000	0.175
5/22/02	6.654	15.631	3.522	19.313	3.339	0.259
8/14/02	2.300	6.363	0.852	6.137	0.850	0.100
11/14/02	1.855	2.559	0.359	3.644	0.455	0.020
6/23/04	0.906	7.130	2.670	14.500	0.050	0.250
9/14/05	0.600	1.000	2.200	10.900	0.300	14.000
6/1/07	0.770	0.460	0.030	1.860	1.410	NA

continued

Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
MW-3 Continued						
4/20/10	0.712	1.950	0.626	6.210	0.753	0.795
8/11/10	0.553	1.130	0.507	7.050	0.366	0.529
12/16/10	0.188	0.189	0.204	3.780	0.205	0.334
9/8/11	0.01 feet free product					
11/8/12	0.658	1.000	0.110	1.620	1.520	0.052
7/18/14	0.763	2.870	0.867	13.100	1.700	0.282
10/13/15	0.250	0.097	0.040	0.736	0.321	0.061
8/17/16	0.312	0.360	0.096	3.190	1.080	0.430
7/5/17	0.038	<0.050	<0.010	0.251	0.154	<0.050
10/19/17	0.078	0.063	0.006	0.249	0.271	0.046
GRP Source	0.959	192.000	134.000	175.000	3.840	3.840
MW-4						
5/14/99	35.500	39.200	3.500	15.850	25.300	0.850
4/27/01	0.005' Free Product (1/16")					
4/23/02	0.12' Free Product					
5/22/02	0.12' Free Product					
8/14/02	0.52' Free Product					
11/14/02	0.33' Free Product					
6/23/04	17.600	27.000	4.040	19.900	17.800	0.923
9/14/05	19.500	45.000	4.400	22.400	4.000	2.900
6/1/07	2.330	14.300	1.400	12.500	4.810	NA
4/20/10	10.600	48.500	5.090	29.700	10.400	11.600
8/11/10	7.930	31.900	3.210	18.300	21.800	1.070
12/16/10	8.730	44.400	5.150	28.300	3.480	1.730
9/8/11	0.05 feet free product					
11/8/12	2.640	13.000	1.800	10.300	10.900	1.530
7/18/14	5.900	64.000	5.620	43.600	12.800	1.240
10/13/15	3.700	41.800	6.180	33.200	1.360	1.470
8/17/16	1.670	11.000	1.700	15.400	9.980	1.090
7/5/17	1.96	16.8	2.95	16.6	1.46	0.803
10/19/17	1.510	20.100	4.560	26.900	3.300	2.650
GRP Source	0.959	192.000	134.000	175.000	3.840	3.840
MW-5						
4/30/01	0.214	0.054	0.045	0.105	0.276	0.010
4/23/02	2.100	0.300	0.040	1.600	1.350	0.055
5/22/02	2.730	0.597	0.125	2.460	1.356	0.064
8/14/02	2.311	0.480	0.097	2.248	1.454	0.070
11/14/02	3.060	0.500	0.130	2.650	1.330	0.030
6/23/04	1.750	0.564	0.104	1.640	0.736	< 0.005
9/14/05	2.490	0.760	0.190	2.100	2.310	0.900
6/1/07	1.410	0.017	0.014	0.575	0.795	NA
4/20/10	0.650	0.056	0.022	0.768	0.543	0.035
8/11/10	0.582	0.0197	0.0197	0.543	0.453	0.0198
12/16/10	0.879	* < 0.010	0.032	0.559	0.697	0.041
11/8/12	0.023	<0.001	0.003	0.009	0.088	<0.005
7/17/14	0.014	<0.001	0.001	0.027	0.064	<0.005
10/13/15	0.149	0.094	0.112	1.170	0.177	0.135
8/17/16	0.026	<0.001	0.002	0.021	0.046	<0.005
7/5/17	0.093	<0.005	0.006	0.134	0.111	0.008
10/19/17	0.141	<0.001	0.012	0.206	0.201	0.050
GRP POC	*0.157*	*31.400*	*21.900*	*175.000*	*0.627*	*0.627*
MW-6						
4/30/01	0.213	0.149	0.158	0.481	0.947	0.116
4/23/02	20.100	14.300	3.200	16.300	22.000	0.213
5/22/02	18.780	16.466	3.526	18.815	14.137	0.301
8/14/02	16.900	23.200	2.700	13.800	20.100	0.500

continued

Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
MW-6						
11/14/02	11.400	11.100	2.000	11.400	14.700	0.700
6/23/04	5.590	6.680	1.210	6.330	6.120	0.705
9/14/05	14.200	24.400	2.400	11.300	59.400	2.800
6/1/07	15.600	21.500	2.190	11.800	32.800	NA
4/20/10	0.940	2.420	0.389	2.180	0.870	0.239
8/11/10	5.950	11.200	1.780	8.030	5.740	0.399
12/16/10	8.120	15.000	1.840	10.500	10.400	0.780
11/8/12	1.770	3.150	0.672	3.000	2.130	0.272
7/18/14	2.250	4.430	0.770	5.270	8.050	** 0.216
10/13/15	2.600	6.590	1.280	7.130	3.130	0.618
8/17/16	1.590	3.630	0.756	3.860	5.520	**0.072
7/5/17	2.31	5.47	0.829	3.90	4.03	0.262
10/19/17	1.980	5.400	0.775	4.790	5.300	0.770
GRP POC	*0.125*	*25.000*	*17.500*	*175.000*	*0.500*	*0.500*
MW-7						
4/30/01	0.119	0.016	0.012	0.027	0.433	0.002
4/23/02	12.100	22.800	1.900	11.300	7.900	0.174
5/22/02	12.515	17.393	2.111	12.677	7.690	0.259
8/14/02	18.300	32.700	3.500	20.200	4.900	0.475
11/14/02	8.180	4.600	1.900	7.740	3.600	0.420
6/23/04	7.050	10.400	1.820	9.950	5.310	0.518
9/14/05	16.500	33.800	3.900	20.600	30.900	2.400
6/1/07	8.280	17.800	2.250	12.000	2.670	NA
4/20/10	0.566	0.206	0.492	2.540	0.320	0.192
8/11/10	3.510	9.180	2.410	11.200	3.200	1.170
12/16/10	6.440	13.200	2.230	11.700	8.150	1.040
11/8/12	0.858	2.230	1.450	7.040	1.020	1.550
7/18/14	0.350	1.360	0.830	3.040	1.920	** 0.245
10/13/15	4.440	27.600	4.880	30.100	9.140	1.780
8/17/16	0.680	1.880	0.928	4.470	2.700	0.350
7/5/17	0.376	1.77	1.10	5.75	1.58	0.526
10/19/17	0.298	0.386	0.720	3.700	1.440	0.946
GRP POC	*0.0735*	*14.700*	*10.300*	*147.000*	*0.294*	*0.294*
MW-8						
4/30/01	0.055	0.013	0.008	0.018	0.011	< 0.001
4/23/02	0.021	< 0.001	< 0.001	< 0.005	0.067	0.004
5/22/02	0.038	0.002	< 0.001	0.010	0.046	< 0.001
8/14/02	0.147	< 0.001	< 0.001	0.044	0.078	< 0.005
11/14/02	0.592	0.093	0.011	0.298	0.121	0.030
6/23/04	0.135	0.015	< 0.001	0.134	0.061	< 0.005
9/14/05	0.461	0.127	0.007	0.463	0.408	0.016
6/1/07	3.050	0.550	0.600	4.350	2.350	NA
4/20/10	< 0.001	< 0.001	< 0.001	< 0.005	0.007	< 0.005
8/11/10	0.0012	< 0.005	< 0.001	< 0.001	0.0244	< 0.005
12/16/10	0.089	0.043	0.014	0.404	0.188	0.029
11/8/12	0.090	0.002	0.003	0.073	0.115	0.007
7/18/14	<0.001	<0.001	<0.001	<0.003	0.170	<0.005
10/13/15	0.073	<0.001	0.010	0.072	0.102	0.028
7/5/17	0.007	<0.005	<0.001	0.008	0.061	<0.005
10/19/17	0.003	<0.001	<0.001	0.004	0.064	0.008
GRP Source	0.959	192.000	134.000	175.000	3.840	3.840
MW-9						
4/30/01	0.335	0.280	0.079	0.195	0.230	0.012
4/23/02	1.320	2.240	0.280	2.200	0.640	0.074
5/22/02	1.350	1.800	0.250	2.200	0.500	0.056
8/14/02	1.289	3.041	0.557	3.545	0.363	0.100

continued

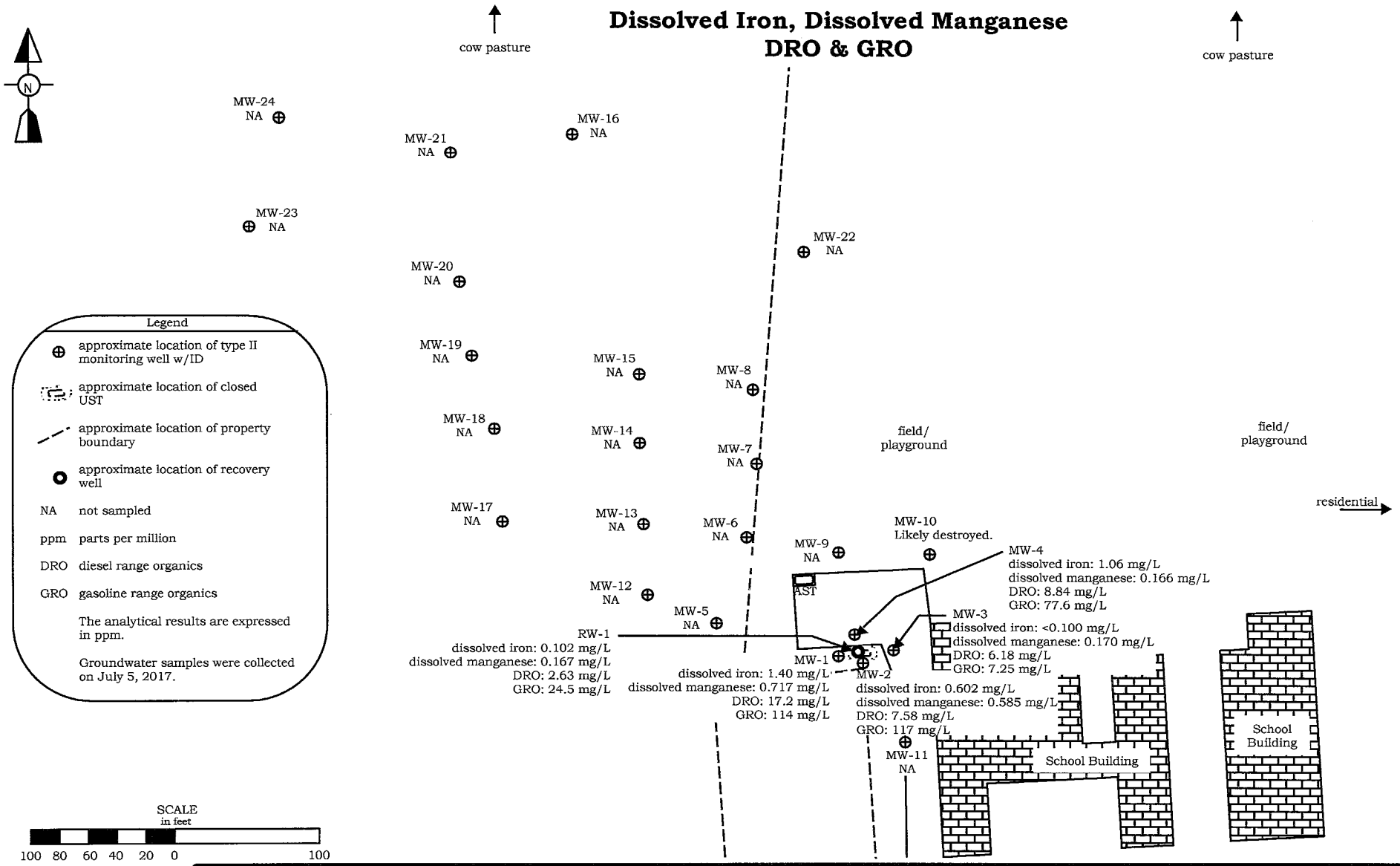
Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
MW-9						
11/14/02	1.960	1.820	0.950	3.910	0.770	0.120
6/23/04	1.550	3.890	1.110	6.290	1.210	0.040
9/14/05	3.600	9.450	1.300	7.600	2.400	2.400
6/1/07	0.218	0.171	0.027	0.309	0.098	NA
4/20/10	0.513	0.894	0.114	1.200	0.572	0.079
8/11/10	1.430	5.800	1.120	7.250	2.940	0.581
12/16/10	1.200	5.050	0.686	5.660	2.030	0.529
11/8/12	0.033	<0.001	<0.001	0.041	0.052	0.005
7/18/14	1.080	4.400	0.412	12.000	5.840	** 0.354
10/13/15	0.262	0.440	0.129	1.880	1.020	0.284
8/17/16	0.076	0.174	0.070	1.430	1.910	0.296
7/5/17	0.060	0.025	0.009	0.207	0.734	<0.005
10/19/17	0.031	0.007	0.004	0.122	0.393	<0.005
GRP Source	0.959	192.000	134.000	175.000	3.840	3.840
MW-10						
4/30/01	0.031	0.001	0.005	0.009	0.001	< 0.001
4/23/02	0.037	< 0.001	< 0.001	0.014	< 0.005	< 0.001
5/22/02	0.022	< 0.001	< 0.001	0.012	< 0.005	< 0.001
8/14/02	0.058	0.004	< 0.001	0.028	< 0.005	< 0.005
11/14/02	0.012	< 0.001	< 0.001	0.008	< 0.005	< 0.005
6/23/04	0.035	< 0.001	< 0.001	0.012	< 0.005	< 0.005
9/14/05	0.006	< 0.001	< 0.001	< 0.005	< 0.005	< 0.005
6/1/07	< 0.001	< 0.001	< 0.001	< 0.005	< 0.005	
11/8/12	Could not find. Likely destroyed.					
GRP Source	0.959	192.000	134.000	175.000	3.840	3.840
MW-11						
4/30/01	0.016	0.018	0.006	0.011	< 0.005	< 0.001
4/23/02	0.004	0.004	< 0.001	< 0.005	< 0.005	< 0.001
5/22/02	0.007	0.005	< 0.001	0.005	< 0.005	< 0.001
8/14/02	0.022	0.017	0.002	0.019	< 0.005	< 0.005
11/14/02	< 0.001	< 0.001	< 0.001	< 0.005	< 0.005	< 0.005
6/23/04	< 0.001	< 0.001	< 0.001	< 0.005	< 0.005	< 0.005
9/14/05	< 0.001	< 0.001	< 0.001	< 0.005	< 0.005	< 0.005
6/1/07	< 0.001	< 0.001	< 0.001	< 0.005	< 0.005	
11/8/12	< 0.001	< 0.001	< 0.001	< 0.005	< 0.005	< 0.005
7/18/14	0.002	<0.001	<0.001	<0.003	<0.001	<0.005
10/13/15	<0.001	<0.001	<0.001	<0.003	<0.001	<0.005
7/5/17	<0.001	<0.005	<0.001	<0.001	<0.001	<0.005
GRP Source	0.959	192.000	134.000	175.000	3.840	3.840
In. Inh. Res.	*0.829*	*47.600*	*125.000*	*40.200*	*2.56E+03*	*5.100*
MW-12						
9/8/11	0.006	< 0.001	< 0.001	<0.005	0.016	< 0.001
11/9/12	0.065	0.001	<0.001	0.040	0.195	<0.005
7/17/14	<0.001	<0.001	<0.001	<0.003	0.003	<0.005
10/14/15	<0.001	<0.001	<0.001	<0.003	<0.001	<0.005
7/5/17	<0.001	<0.005	<0.001	<0.001	<0.001	<0.005
GRP POC	0.0753	15.100	10.500	151.000	0.301	0.301
MW-13						
9/8/11	0.390	0.005	< 0.001	0.452	0.668	0.007
11/9/12	1.760	0.090	0.235	4.050	5.050	0.105
7/17/14	<0.001	<0.001	<0.001	<0.003	0.014	<0.005
10/14/15	0.036	0.001	<0.001	0.004	0.265	0.006
8/17/16	0.025	<0.001	0.001	<0.003	0.122	<0.005
7/6/17	0.001	<0.005	0.001	<0.001	0.073	<0.005
GRP POC	0.0573	11.500	8.020	115.000	0.229	0.229

Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
MW-14						
9/8/11	6.830	2.190	1.630	16.100	8.150	0.417
11/9/12	1.650	0.112	0.350	1.500	7.700	0.098
7/17/14	0.320	0.010	0.013	0.156	2.040	** 0.014
10/14/15	2.360	0.164	0.595	0.262	3.280	0.399
8/17/16	0.360	0.015	0.035	0.102	2.280	<0.005
7/6/17	2.08	0.140	0.491	0.161	2.02	0.191
GRP POC	0.0392	7.840	5.490	78.400	0.157	0.157
MW-15						
9/8/11	2.350	0.071	0.191	1.780	1.080	0.114
11/9/12	0.796	0.036	0.098	0.428	2.040	0.026
7/17/14	0.187	0.003	0.058	0.044	1.530	0.054
10/14/15	1.580	0.052	0.164	** 0.013	3.150	0.122
8/17/16	2.420	0.119	0.670	0.682	5.200	0.480
7/6/17	1.46	<0.050	0.153	0.028	4.79	0.129
GRP POC	0.0291	5.820	4.070	58.200	0.116	0.116
MW-16						
5/1/12	<0.001	<0.001	<0.001	<0.005	0.023	<0.005
11/9/12	<0.001	<0.001	<0.001	<0.005	0.036	<0.005
7/17/14	<0.001	<0.001	<0.001	<0.003	<0.001	<0.005
10/14/15	<0.001	<0.001	<0.001	<0.003	0.002	<0.005
7/6/17	<0.001	<0.005	<0.001	<0.001	0.009	<0.005
GRP POC	0.0107	2.140	1.500	21.400	0.0429	0.0429
MW-17						
5/1/12	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
11/9/12	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005
7/18/14	<0.001	<0.001	<0.001	<0.003	<0.001	<0.005
10/14/15	<0.001	<0.001	<0.001	<0.003	<0.001	<0.005
7/6/17	<0.001	0.014	<0.001	<0.001	<0.001	<0.005
GRP POC	0.0262	5.240	3.670	52.400	0.105	0.105
MW-18						
5/1/12	<0.001	<0.001	<0.001	<0.005	0.206	<0.005
11/9/12	0.021	<0.001	<0.001	0.021	0.653	<0.005
7/17/14	<0.001	<0.001	<0.001	<0.003	0.048	<0.005
10/14/15	<0.001	<0.001	<0.001	<0.003	0.092	<0.005
7/6/17	0.008	<0.005	<0.001	0.001	0.137	<0.005
GRP POC	0.0206	4.120	2.890	41.200	0.0824	0.0824
MW-19						
5/1/12	0.012	<0.001	<0.001	<0.005	0.163	<0.005
11/9/12	0.406	0.002	0.003	0.160	1.750	0.066
7/17/14	0.010	<0.001	<0.001	0.007	0.285	<0.005
10/14/15	<0.001	<0.001	<0.001	<0.003	0.048	<0.005
7/6/17	0.121	<0.050	<0.010	<0.010	1.51	<0.050
GRP POC	0.0159	3.170	2.220	31.700	0.0635	0.0635
MW-20						
5/1/12	0.031	<0.001	<0.001	0.027	0.160	<0.005
11/9/12	0.203	0.002	0.002	0.099	0.624	*<0.010
7/17/14	<0.001	<0.001	<0.001	<0.003	0.001	<0.005
10/14/15	0.047	0.002	<0.001	0.038	0.369	0.016
7/6/17	0.128	<0.005	<0.001	0.006	0.752	0.008
GRP POC	0.0128	2.560	1.790	25.600	0.0512	0.0512
MW-21						
5/1/12	0.265	0.006	0.026	0.331	0.205	0.015
11/9/12	0.058	<0.001	<0.001	0.066	0.132	0.005
7/17/14	0.023	<0.001	<0.001	0.020	0.016	<0.005
10/14/15	0.137	0.032	0.048	0.345	0.069	0.031
8/17/16	0.049	<0.001	<0.001	0.115	0.024	0.007
7/6/17	0.041	<0.005	<0.001	0.044	0.037	0.007
GRP POC	0.00916	1.830	1.280	18.300	0.0366	0.0366

Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	MTBE (mg/L)	Naphthalene (mg/L)
MW-22						
5/1/12	<0.001	<0.001	<0.001	<0 .005	<0.005	<0.005
11/8/12	<0.001	<0.001	<0.001	<0 .005	<0.005	<0.005
7/18/14	<0.001	<0.001	<0.001	<0.003	<0.001	<0.005
10/14/15	<0.001	<0.001	<0.001	<0.003	<0.001	<0.005
7/5/17	<0.001	<0.005	<0.001	<0.001	<0.001	<0.005
GRP POC	0.0223	4.460	3.120	44.600	0.0892	0.0892
MW-23						
7/30/13	0.079	<0.001	<0.001	0.049	0.217	0.010
7/17/14	0.006	<0.001	<0.001	0.004	0.015	<0.005
10/14/15	0.008	<0.001	<0.001	0.004	0.030	<0.005
7/6/17	0.027	<0.005	<0.001	0.014	0.055	<0.005
MW-21's GRP	0.00916	1.830	1.280	18.300	0.0366	0.0366
MW-24						
7/30/13	0.139	<0.001	<0.001	0.088	0.186	<0.001
7/17/14	<0.001	<0.001	<0.001	<0.003	0.002	<0.005
10/14/15	0.010	<0.001	<0.001	0.005	0.016	<0.005
7/6/17	0.009	<0.005	<0.001	0.004	0.026	<0.005
MW-21's GRP	0.00916	1.830	1.280	18.300	0.0366	0.0366
RW-1						
8/17/16	1.660	15.400	2.160	12.900	8.800	0.724
9/9/16	8 hr. High Vacuum Extraction Event: RW-1, MW-1, MW-2					
7/5/17	0.544	8.92	0.909	4.89	1.00	0.278
10/19/17	0.535	9.640	1.230	8.120	2.320	**0.345

* = practical quantitation limit elevated due to matrix
** = result is above method detection limit and below reporting limit
MW = monitoring well SSTL: site specific target level
GRP Source = Groundwater Resource Protection Source Area SSTLs
GRP POC = Groundwater Resource Protection Point-of-Compliance SSTLs
Out. Inh. = Outdoor Inhalation SSTL In. Inh = Indoor Inhalation

Dissolved Iron, Dissolved Manganese DRO & GRO



Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-159	DRAWN BY: HKS
DATE: 8/2/17	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Soil BTEX and MTBE Concentrations Table

Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

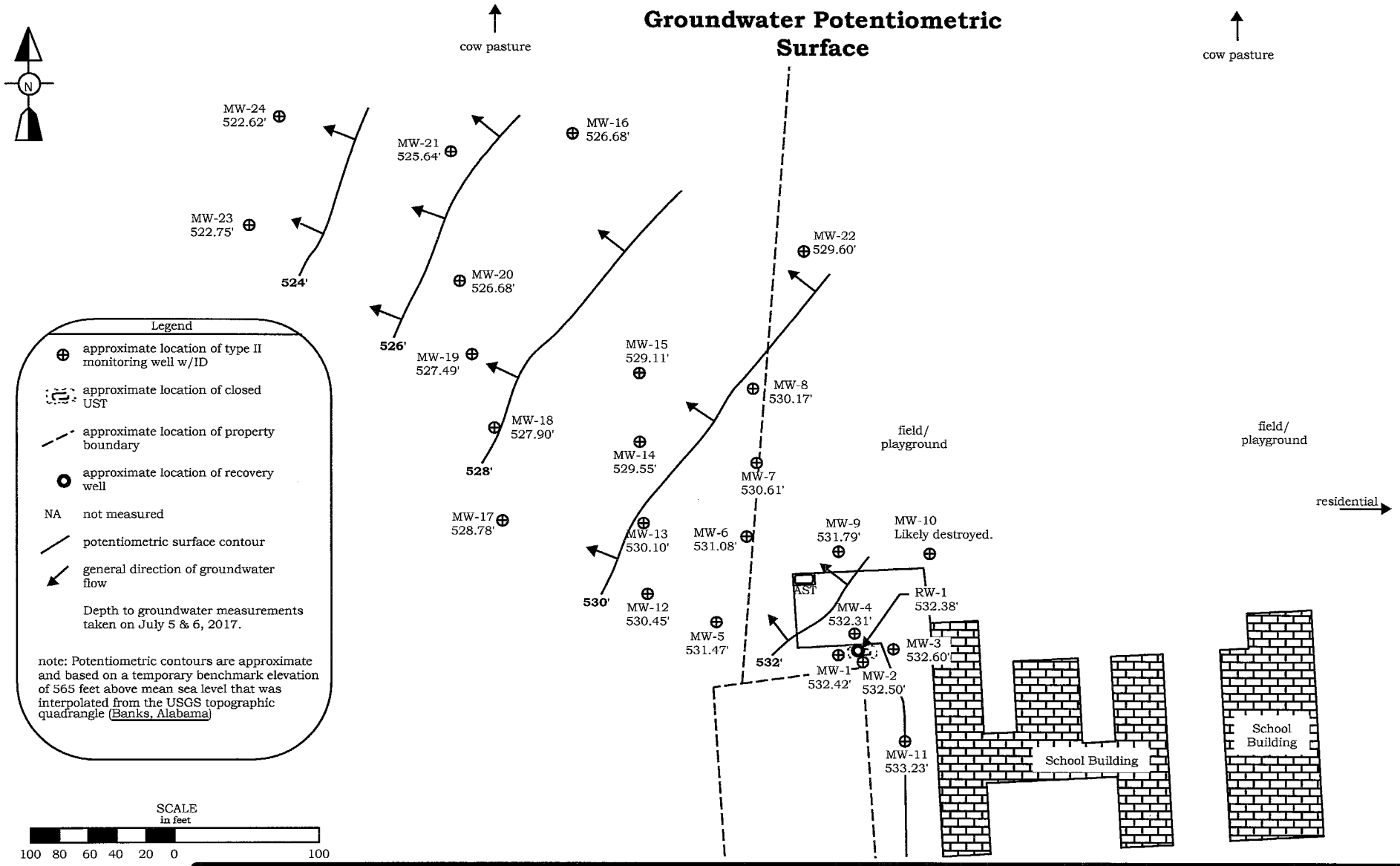
Sample Date	Sample ID	Sample Depth (feet)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	Total BTEX (ppb)	MTBE (ppb)
MW-1								
4/29/99	MW1/S-2	8-10	BDL	BDL	BDL	BDL	BDL	15
4/29/99	MW1/S-3	13-15	49	4,000	2,400	13,200	19,649	2,450
4/29/99	MW1/S-8	38-40	12	48	10	60	130	28
MW-2								
4/29/99	MW2/S-2	8-10	8	4,550	5,450	28,250	38,258	30
4/29/99	MW2/S-6	28-30	11	1,050	1,500	9,050	11,611	4,000
4/29/99	MW2/S-7	33-35	4,500	95,700	35,700	129,000	264,900	800
MW-3								
4/29/99	MW3/S-3	13-15	BDL	85	68	502	655	766
4/29/99	MW3/S-4	18-20	50	615	245	1,065	1,975	1,684
4/29/99	MW3/S-7	33-35	50	644	384	1,488	2,566	207
MW-4								
4/30/99	MW4/S-5	23-25	165	3,350	2,350	12,700	18,565	5,000
4/30/99	MW4/S-6	28-30	250	14,200	8,750	39,550	62,750	4,800
4/30/99	MW4/S-8	38-40	350	2,400	450	2,350	5,550	550
MW-5								
4/19/01	MW5/S-6	30-32	160	80	60	60	360	BDL
4/19/01	MW5/S-7	35-37	160	190	150	160	660	80
4/19/01	MW5/S-8	40-42	BDL	BDL	BDL	BDL	BDL	BDL
MW-6								
4/20/01	MW6/S-6	30-32	BDL	BDL	BDL	BDL	BDL	80
4/20/01	MW6/S-7	35-37	BDL	BDL	BDL	BDL	BDL	620
4/20/01	MW6/S-8	40-42	BDL	BDL	BDL	BDL	BDL	20
MW-7								
4/20/01	MW7/S-6	30-32	BDL	BDL	BDL	BDL	BDL	BDL
4/20/01	MW7/S-7	35-37	BDL	BDL	BDL	BDL	BDL	60
4/20/01	MW7/S-8	40-42	BDL	BDL	BDL	BDL	BDL	BDL
MW-8								
4/23/01	MW8/S-6	30-32	BDL	BDL	BDL	BDL	BDL	19
4/23/01	MW8/S-7	35-37	11	15	BDL	BDL	26	31
4/23/01	MW8/S-8	40-42	BDL	BDL	BDL	BDL	BDL	BDL
MW-9								
4/23/01	MW9/S-5	25-27	BDL	BDL	BDL	BDL	BDL	BDL
4/23/01	MW9/S-6	30-32	BDL	BDL	BDL	BDL	BDL	226
4/23/01	MW9/S-7	35-37	120	203	6	50	376	318
MW-10								
4/23/01	MW10/S-6	30-32	BDL	BDL	BDL	BDL	BDL	BDL
4/24/01	MW10/S-7	35-37	BDL	BDL	BDL	BDL	BDL	BDL
4/24/01	MW10/S-8	40-42	BDL	BDL	BDL	BDL	BDL	BDL
MW-11								
4/24/01	MW11/S-5	25-27	BDL	BDL	BDL	BDL	BDL	BDL
4/24/01	MW11/S-6	30-32	BDL	BDL	BDL	BDL	BDL	BDL
4/24/01	MW11/S-7	35-37	BDL	BDL	BDL	BDL	BDL	BDL
MW-12								
8/31/11	MW12/28'30'	28-30	< 5	< 5	< 5	< 5	BDL	< 5
8/31/11	MW12/33'35'	33-35	< 5	< 5	< 5	< 5	BDL	< 5

Continued...

Sample Date	Sample ID	Sample Depth (feet)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	Total BTEX (ppb)	MTBE (ppb)
MW-13								
8/30/11	MW13/28'30'	28-30	< 5	< 5	< 5	< 5	BDL	< 5
8/30/11	MW13/33'35'	33-35	< 5	< 5	< 5	< 5	BDL	< 5
MW-14								
8/30/11	MW14/28'30'	28-30	< 5	< 5	< 5	< 5	BDL	< 5
8/30/11	MW14/33'35'	33-35	< 5	< 5	< 5	< 5	BDL	< 5
MW-15								
8/29/11	MW15/28'30'	28-30	< 5	< 5	< 5	< 5	BDL	< 5
8/29/11	MW15/33'35'	33-35	< 5	< 5	< 5	< 5	BDL	< 5
MW-16								
4/19/12	MW16/28'30'	28-30	< 5	< 5	< 5	< 5	BDL	< 5
4/19/12	MW16/33'35'	33-35	< 5	< 5	< 5	< 5	BDL	< 5
MW-17								
4/17/12	MW17/23'25'	23-25	< 5	< 5	< 5	< 5	BDL	< 5
4/17/12	MW17/28'30'	28-30	< 5	< 5	< 5	< 5	BDL	< 5
MW-18								
4/18/12	MW18/28'30'	28-30	< 5	< 5	< 5	< 5	BDL	< 5
4/18/12	MW18/33'35'	33-35	< 5	< 5	< 5	< 5	BDL	< 5
MW-19								
4/18/12	MW19/33'35'	33-35	< 5	< 5	< 5	< 5	BDL	< 5
4/18/12	MW19/38'40'	38-40	< 5	< 5	< 5	< 5	BDL	< 5
MW-20								
4/18/12	MW20/33'35'	33-35	< 5	< 5	< 5	< 5	BDL	< 5
4/18/12	MW20/38'40'	38-40	< 5	< 5	< 5	< 5	BDL	< 5
MW-21								
4/19/12	MW21/33'35'	33-35	< 5	< 5	< 5	< 5	BDL	< 5
4/19/12	MW21/38'40'	38-40	< 5	< 5	< 5	< 5	BDL	< 5
MW-22								
4/19/12	MW22/28'30'	28-30	< 5	< 5	< 5	< 5	BDL	< 5
4/19/12	MW22/33'35'	33-35	< 5	< 5	< 5	< 5	BDL	< 5
MW-23								
7/19/13	MW23/28'30'	28-30	< 5	< 5	< 5	< 15	BDL	< 5
7/19/13	MW23/33'35'	33-35	< 5	< 5	< 5	< 15	BDL	< 5
MW-24								
7/19/13	MW24/13'15'	13-15	< 5	< 5	< 5	< 15	BDL	< 5
7/19/13	MW24/33'35'	33-35	< 5	< 5	< 5	< 15	BDL	< 5
DW-1								
4/19/01	DW1/S-5	25-27	BDL	20	100	910	1,030	1,360
4/19/01	DW1/S-6	30-32	BDL	15	130	1390	1535	950
4/19/01	DW1/S-10	50-52	BDL	BDL	BDL	BDL	BDL	BDL
RW-1								
7/22/16	RW1/S-4	19-21	1,310	6,970	2,720	12,800	23,800	10,100
7/22/16	RW1/S-6	29-31	< 5	< 5	< 5	49	49	388

MW - monitoring well RW - recovery well
DW - deep well, was grouted to surface because no confining layer encountered.
ppb - parts per billion
BDL - below detection limits

Groundwater Potentiometric Surface



Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-163	DRAWN BY: HKS
DATE: 8/2/17	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Groundwater Elevations Table

Banks Middle School

Date	Ground Surface Elevation	Top of PVC Elevation	Depth to Groundwater	Groundwater Elevation
MW-1 (2-inch diameter, 40 feet depth, 10 feet screen)				
5/14/99	565.36	565.01	33.71	531.30
4/27/01	565.36	565.01	0.02' Free Product (1/4")	
4/23/02	565.36	565.01	*34.82	*530.19
5/22/02	565.36	565.01	*34.79	*530.22
8/14/02	565.36	565.01	*35.41	*529.60
11/14/02	565.36	565.01	36.25	528.76
6/23/04	565.36	565.01	31.68	533.33
9/14/05	565.36	565.01	32.02	532.99
5/9/06	565.36	565.01	34.29	530.72
6/1/07	565.36	565.01	36.44	528.57
4/20/10	565.36	565.01	27.23	537.78
8/11/10	565.36	565.01	29.40	535.61
12/16/10	565.36	565.01	32.02	532.99
9/8/11	565.36	565.01	35.35	* 529.98
5/1/12	565.36	565.01	35.52	* 529.88
11/8/12	565.36	565.01	35.93	529.08
7/18/14	565.36	565.01	29.80	535.21
10/13/15	565.36	565.01	34.26	530.75
8/17/16	565.36	565.01	30.96	534.05
7/5/17	565.36	565.01	32.59	532.42
10/19/17	565.36	565.01	32.21	532.80
MW-2 (2-inch diameter, 40 feet depth, 10 feet screen)				
5/14/99	565.34	564.94	33.55	531.39
4/27/01	565.34	564.94	0.01' Free Product (1/8")	
4/23/02	565.34	564.94	34.66	530.28
5/22/02	565.34	564.94	34.62	530.32
8/14/02	565.34	564.94	*35.28	*529.66
11/14/02	565.34	564.94	*36.12	*528.82
6/23/04	565.34	564.94	31.56	533.38
9/14/05	565.34	564.94	Not Found	
5/9/06	565.34	564.94	34.15	530.79
6/1/07	565.34	564.94	36.28	528.66
4/20/10	565.34	564.94	27.12	537.82
8/11/10	565.34	564.94	29.26	535.68
12/16/10	565.34	564.94	31.85	533.09
9/8/11	565.34	564.94	34.88	530.06
5/1/12	565.34	564.94	34.99	529.95
11/8/12	565.34	564.94	35.84	* 529.14
7/18/14	565.34	564.94	29.66	535.28
10/13/15	565.34	564.94	34.16	* 530.79
8/17/16	565.34	564.94	30.83	534.11
7/5/17	565.34	564.94	32.44	532.50
10/19/17	565.34	564.94	32.04	532.90
MW-3 (2-inch diameter, 40 feet depth, 10 feet screen)				
5/14/99	564.99	564.48	32.98	531.50
4/27/01	564.99	564.48	33.53	530.95

continued

Date	Ground Surface Elevation	Top of PVC Elevation	Depth to Groundwater	Groundwater Elevation
MW-3 (2-inch diameter, 40 feet depth, 10 feet screen)				
4/23/02	564.99	564.48	34.07	530.41
5/22/02	564.99	564.48	34.07	530.41
8/14/02	564.99	564.48	34.72	529.76
11/14/02	564.99	564.48	35.55	528.93
6/23/04	564.99	564.48	31.06	533.42
9/14/05	564.99	564.48	31.39	533.09
5/9/06	564.99	564.48	33.61	530.87
6/1/07	564.99	564.48	35.72	528.76
4/20/10	564.99	564.48	26.66	537.82
8/11/10	564.99	564.48	28.79	535.69
12/16/10	564.99	564.48	31.34	533.14
9/8/11	564.99	564.48	34.35	* 530.14
5/1/12	564.99	564.48	34.43	530.05
11/8/12	564.99	564.48	35.26	529.22
7/18/14	564.99	564.48	29.22	535.26
10/13/15	564.99	564.48	33.61	530.87
8/17/16	564.99	564.48	30.33	534.15
7/5/17	564.99	564.48	31.88	532.60
10/19/17	564.99	564.48	31.46	533.02
MW-4 (2-inch diameter, 40 feet depth, 10 feet screen)				
5/14/99	564.97	564.75	33.51	531.24
4/27/01	564.97	564.75	0.005' Free Product (1/16")	
4/23/02	564.97	564.75	*34.58	*530.17
5/22/02	564.97	564.75	*34.58	*530.17
8/14/02	564.97	564.75	*35.09	*529.52
11/14/02	564.97	564.75	*36.08	*528.67
6/23/04	564.97	564.75	31.53	533.22
9/14/05	564.97	564.75	31.83	532.92
5/9/06	564.97	564.75	34.09	530.66
6/1/07	564.97	564.75	36.24	528.51
4/20/10	564.97	564.75	27.11	537.64
8/11/10	564.97	564.75	29.26	535.49
12/16/10	564.97	564.75	31.87	532.88
9/8/11	564.97	564.75	34.90	* 529.86
5/1/12	564.97	564.75	34.98	529.77
11/8/12	564.97	564.75	35.81	528.94
7/18/14	564.97	564.75	29.68	535.07
10/13/15	564.97	564.75	34.11	530.64
8/17/16	564.97	564.75	30.82	533.93
7/5/17	564.97	564.75	32.44	532.31
10/19/17	564.97	564.75	32.05	532.70
MW-5 (2-inch diameter, 40 feet depth, 10 feet screen)				
4/27/01	566.71	566.32	36.92	529.40
4/23/02	566.71	566.32	37.12	529.20
5/22/02	566.71	566.32	36.98	529.34
8/14/02	566.71	566.32	37.53	528.79
11/14/02	566.71	566.32	38.41	527.91
6/23/04	566.71	566.32	33.71	532.61
9/14/05	566.71	566.32	34.27	532.05
5/9/06	566.71	566.32	36.43	529.89

continued

Date	Ground Surface Elevation	Top of PVC Elevation	Depth to Groundwater	Groundwater Elevation
MW-5 (2-inch diameter, 40 feet depth, 10 feet screen)				
6/1/07	566.71	566.32	38.66	527.66
4/20/10	566.71	566.32	29.21	537.11
8/11/10	566.71	566.32	31.47	534.85
12/16/10	566.71	566.32	34.24	532.08
11/8/12	566.71	566.32	38.22	528.10
7/17/14	566.71	566.32	31.75	534.57
10/13/15	566.71	566.32	36.48	529.84
8/17/16	566.71	566.32	33.09	533.23
7/5/17	566.71	566.32	34.85	531.47
10/19/17	566.71	566.32	34.58	531.74
MW-6 (2-inch diameter, 40 feet depth, 10 feet screen)				
4/27/01	565.81	565.28	36.14	529.14
4/23/02	565.81	565.28	36.40	528.88
5/22/02	565.81	565.28	36.31	528.97
8/14/02	565.81	565.28	36.89	528.39
11/14/02	565.81	565.28	37.78	527.50
6/23/04	565.81	565.28	33.19	532.09
9/14/05	565.81	565.28	33.63	531.65
5/9/06	565.81	565.28	35.85	529.43
6/1/07	565.81	565.28	37.96	527.32
4/20/10	565.81	565.28	28.71	536.57
8/11/10	565.81	565.28	31.00	534.28
12/16/10	565.81	565.28	33.66	531.62
11/8/12	565.81	565.28	37.50	527.78
7/18/14	565.81	565.28	31.31	533.97
10/13/15	565.81	565.28	35.85	529.43
8/17/16	565.81	565.28	32.54	532.74
7/5/17	565.81	565.28	34.20	531.08
10/19/17	565.81	565.28	33.90	531.38
MW-7 (2-inch diameter, 40 feet depth, 10 feet screen)				
4/27/01	564.64	564.29	35.28	529.01
4/23/02	564.64	564.29	35.86	528.43
5/22/02	564.64	564.29	35.79	528.50
8/14/02	564.64	564.29	36.46	527.83
11/14/02	564.64	564.29	37.40	526.89
6/23/04	564.64	564.29	32.72	531.57
9/14/05	564.64	564.29	33.15	531.14
5/9/06	564.64	564.29	35.40	528.89
6/1/07	564.64	564.29	37.47	526.82
4/20/10	564.64	564.29	28.27	536.02
8/11/10	564.64	564.29	30.67	533.62
12/16/10	564.64	564.29	33.31	530.98
11/8/12	564.64	564.29	37.09	527.20
7/18/14	564.64	564.29	30.92	533.37
10/13/15	564.64	564.29	35.44	528.85
8/17/16	564.64	564.29	32.15	532.14
7/5/17	564.64	564.29	33.68	530.61
10/19/17	564.64	564.29	33.34	530.95
MW-8 (2-inch diameter, 40 feet depth, 10 feet screen)				
4/27/01	563.50	563.33	34.41	528.92

continued

Date	Ground Surface Elevation	Top of PVC Elevation	Depth to Groundwater	Groundwater Elevation
MW-8 (2-inch diameter, 40 feet depth, 10 feet screen)				
4/23/02	563.50	563.33	35.25	528.08
5/22/02	563.50	563.33	35.27	528.06
8/14/02	563.50	563.33	36.04	527.29
11/14/02	563.50	563.33	36.98	526.35
6/23/04	563.50	563.33	32.34	530.99
9/14/05	563.50	563.33	32.70	530.63
5/9/06	563.50	563.33	35.00	528.33
6/1/07	563.50	563.33	36.93	526.40
4/20/10	563.50	563.33	27.76	535.57
8/11/10	563.50	563.33	30.38	532.95
12/16/10	563.50	563.33	33.04	530.29
11/8/12	563.50	563.33	36.63	526.70
7/18/14	563.50	563.33	30.52	532.81
10/13/15	563.50	563.33	35.00	528.33
8/17/16	563.50	563.33	31.80	531.53
7/5/17	563.50	563.33	33.16	530.17
10/19/17	563.50	563.33	32.76	530.57
MW-9 (2-inch diameter, 40 feet depth, 10 feet screen)				
4/27/01	564.18	563.67	33.54	530.13
4/23/02	564.18	563.67	34.04	529.63
5/22/02	564.18	563.67	34.03	529.64
8/14/02	564.18	563.67	34.69	528.98
11/14/02	564.18	563.67	35.53	528.14
6/23/04	564.18	563.67	31.05	532.62
9/14/05	564.18	563.67	31.39	532.28
5/9/06	564.18	563.67	33.60	530.07
6/1/07	564.18	563.67	35.67	528.00
4/20/10	564.18	563.67	26.66	537.01
8/11/10	564.18	563.67	28.83	534.84
12/16/10	564.18	563.67	31.43	532.24
11/8/12	564.18	563.67	35.24	528.43
7/18/14	564.18	563.67	29.25	534.42
10/13/15	564.18	563.67	33.62	530.05
8/17/16	564.18	563.67	30.40	533.27
7/5/17	564.18	563.67	31.88	531.79
10/19/17	564.18	563.67	31.51	532.16
MW-10 (2-inch diameter, 40 feet depth, 10 feet screen)				
4/27/01	562.84	562.23	31.34	530.89
4/23/02	562.84	562.23	32.08	530.15
5/22/02	562.84	562.23	32.12	530.11
8/14/02	562.84	562.23	32.92	529.31
11/14/02	562.84	562.23	33.67	528.56
6/23/04	562.84	562.23	29.38	532.85
9/14/05	562.84	562.23	29.58	532.65
6/1/07	562.84	562.23	33.81	528.42
11/8/12	Could not find. Likely destroyed.			
MW-11 (2-inch diameter, 35 feet depth, 10 feet screen)				
4/27/01	563.89	563.37	31.61	531.76
4/23/02	563.89	563.37	32.36	531.01
5/22/02	563.89	563.37	32.34	531.03

continued

Date	Ground Surface Elevation	Top of PVC Elevation	Depth to Groundwater	Groundwater Elevation
MW-11 (2-inch diameter, 35 feet depth, 10 feet screen)				
8/14/02	563.89	563.37	33.01	530.36
11/14/02	563.89	563.37	33.85	529.52
6/23/04	563.89	563.37	29.31	534.06
9/14/05	563.89	563.37	29.67	533.70
6/1/07	563.89	563.37	34.04	529.33
11/8/12	563.89	563.37	33.60	529.77
7/18/14	563.89	563.37	27.40	535.97
10/13/15	563.89	563.37	31.91	531.46
8/17/16	563.89	563.37	28.54	534.83
7/5/17	563.89	563.37	30.14	533.23
MW-12 (4-inch diameter, 48 feet depth, 20 feet screen)				
9/8/11	568.67	567.95	40.10	527.85
11/9/12	568.67	567.95	40.92	527.03
7/17/14	568.67	567.95	31.10	536.85
10/14/15	568.67	567.95	39.14	528.81
8/17/16	568.67	567.95	35.60	532.35
7/6/17	568.67	567.95	37.50	530.45
MW-13 (4-inch diameter, 48 feet depth, 20 feet screen)				
9/8/11	570.11	569.33	40.91	528.42
11/9/12	570.11	569.33	42.69	526.64
7/17/14	570.11	569.33	37.16	532.17
10/14/15	570.11	569.33	40.93	528.40
8/17/16	570.11	569.33	37.35	531.98
7/6/17	570.11	569.33	39.23	530.10
MW-14 (4-inch diameter, 48 feet depth, 20 feet screen)				
9/8/11	570.55	569.82	42.97	526.85
11/9/12	570.55	569.82	43.66	526.16
7/17/14	570.55	569.82	37.00	532.82
10/14/15	570.55	569.82	41.95	527.87
8/17/16	570.55	569.82	38.40	531.42
7/6/17	570.55	569.82	40.27	529.55
MW-15 (4-inch diameter, 48 feet depth, 20 feet screen)				
9/8/11	569.95	569.79	43.38	526.41
11/9/12	569.95	569.79	44.05	525.74
7/17/14	569.95	569.79	37.40	532.39
10/14/15	569.95	569.79	42.37	527.42
8/17/16	569.95	569.79	38.83	530.96
7/6/17	569.95	569.79	40.68	529.11
MW-16 (2-inch diameter, 43 feet depth, 10 feet screen)				
5/1/12	560.04	559.61	34.58	525.03
11/9/12	560.04	559.61	30.37	529.24
7/17/14	560.04	559.61	29.61	530.00
10/14/15	560.04	559.61	34.74	524.87
8/17/16	560.04	559.61	31.15	528.46
7/6/17	560.04	559.61	32.93	526.68
MW-17 (2-inch diameter, 48 feet depth, 10 feet screen)				
5/1/12	570.18	569.91	44.12	525.79
11/9/12	570.18	569.91	44.45	525.46
7/18/14	570.18	569.91	37.54	532.37
10/14/15	570.18	569.91	42.72	527.19

continued

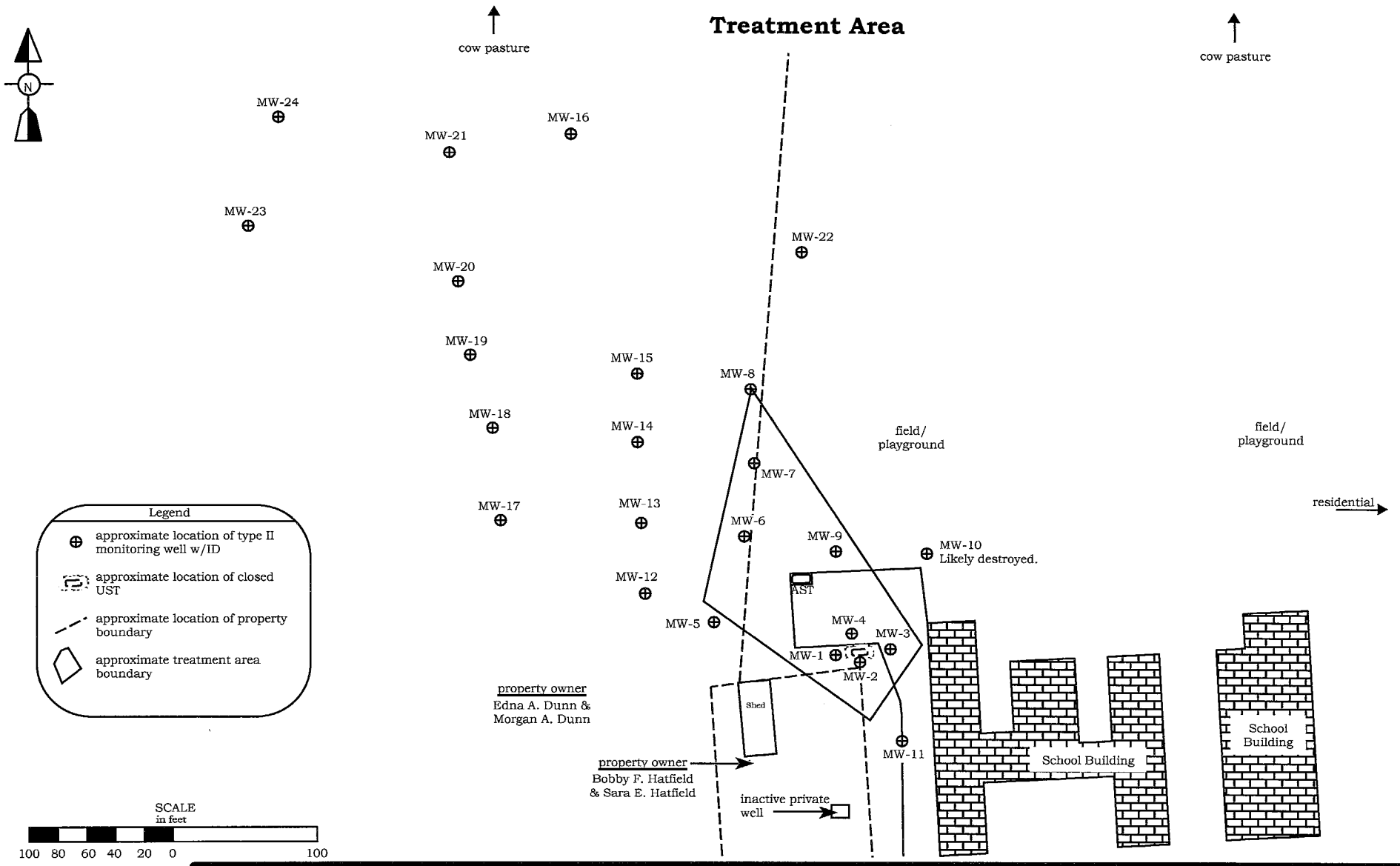
Date	Ground Surface Elevation	Top of PVC Elevation	Depth to Groundwater	Groundwater Elevation
MW-17 (2-inch diameter, 48 feet depth, 10 feet screen)				
8/17/16	570.18	569.91	38.97	530.94
7/6/17	570.18	569.91	41.13	528.78
MW-18 (2-inch diameter, 48 feet depth, 10 feet screen)				
5/1/12	570.22	569.53	44.61	524.92
11/9/12	570.22	569.53	45.01	524.52
7/17/14	570.22	569.53	38.02	531.51
10/14/15	570.22	569.53	43.22	526.31
8/17/16	570.22	569.53	39.48	530.05
7/6/17	570.22	569.53	41.63	527.90
MW-19 (2-inch diameter, 49 feet depth, 10 feet screen)				
5/1/12	570.28	570.01	45.36	524.65
11/9/12	570.28	570.01	45.91	524.10
7/17/14	570.28	570.01	38.96	531.05
10/14/15	570.28	570.01	44.16	525.85
8/17/16	570.28	570.01	40.45	529.56
7/6/17	570.28	570.01	42.52	527.49
MW-20 (2-inch diameter, 49 feet depth, 10 feet screen)				
5/1/12	568.69	567.96	43.77	524.19
11/9/12	568.69	567.96	44.02	523.94
7/17/14	568.69	567.96	37.69	530.27
10/14/15	568.69	567.96	42.92	525.04
8/17/16	568.69	567.96	39.20	528.76
7/6/17	568.69	567.96	41.28	526.68
MW-21 (2-inch diameter, 45 feet depth, 10 feet screen)				
5/1/12	560.79	560.47	36.57	523.90
11/9/12	560.79	560.47	38.20	522.27
7/17/14	560.79	560.47	31.37	529.10
10/14/15	560.79	560.47	36.50	523.97
8/17/16	560.79	560.47	33.03	527.44
7/6/17	560.79	560.47	34.83	525.64
Date	Ground Surface Elevation	Top of PVC Elevation	Depth to Groundwater	Groundwater Elevation
MW-22 (2-inch diameter, 43 feet depth, 10 feet screen)				
5/1/12	560.42	560.15	32.76	527.39
11/8/12	560.42	560.15	34.23	525.92
7/18/14	560.42	560.15	28.36	531.79
10/14/15	560.42	560.15	32.82	527.33
8/17/16	560.42	560.15	29.71	530.44
7/5/17	560.42	560.15	30.55	529.60
MW-23 (2-inch diameter, 50 feet depth, 10 feet screen)				
7/30/13	566.09	565.27	41.77	523.50
7/17/14	566.09	565.27	38.87	526.40
10/14/15	566.09	565.27	44.30	520.97
8/17/16	566.09	565.27	40.40	524.87
7/6/17	566.09	565.27	42.52	522.75
MW-24 (2-inch diameter, 45 feet depth, 10 feet screen)				
7/30/13	560.90	560.28	36.36	523.92
7/17/14	560.90	560.28	34.16	526.12
10/14/15	560.90	560.28	39.21	521.07
8/17/16	560.90	560.28	35.70	524.58
7/6/17	560.90	560.28	37.66	522.62

Date	Ground Surface Elevation	Top of PVC Elevation	Depth to Groundwater	Groundwater Elevation
RW-1 (4-inch diameter, 40 feet depth, 30 feet screen)				
8/17/16	565.14	564.83	30.83	534.00
7/5/17	565.14	564.83	32.45	532.38
10/19/17	565.14	564.83	32.04	532.79

MW - monitoring well **RW** - recovery well

* Groundwater elevation corrected due to the presence of free product

All measurements and elevations are in feet above mean sea level and based on a temporary benchmark elevation of 565.00 feet that interpolated from the Banks, AL USGS 7.5 minute topographic quadrangle.

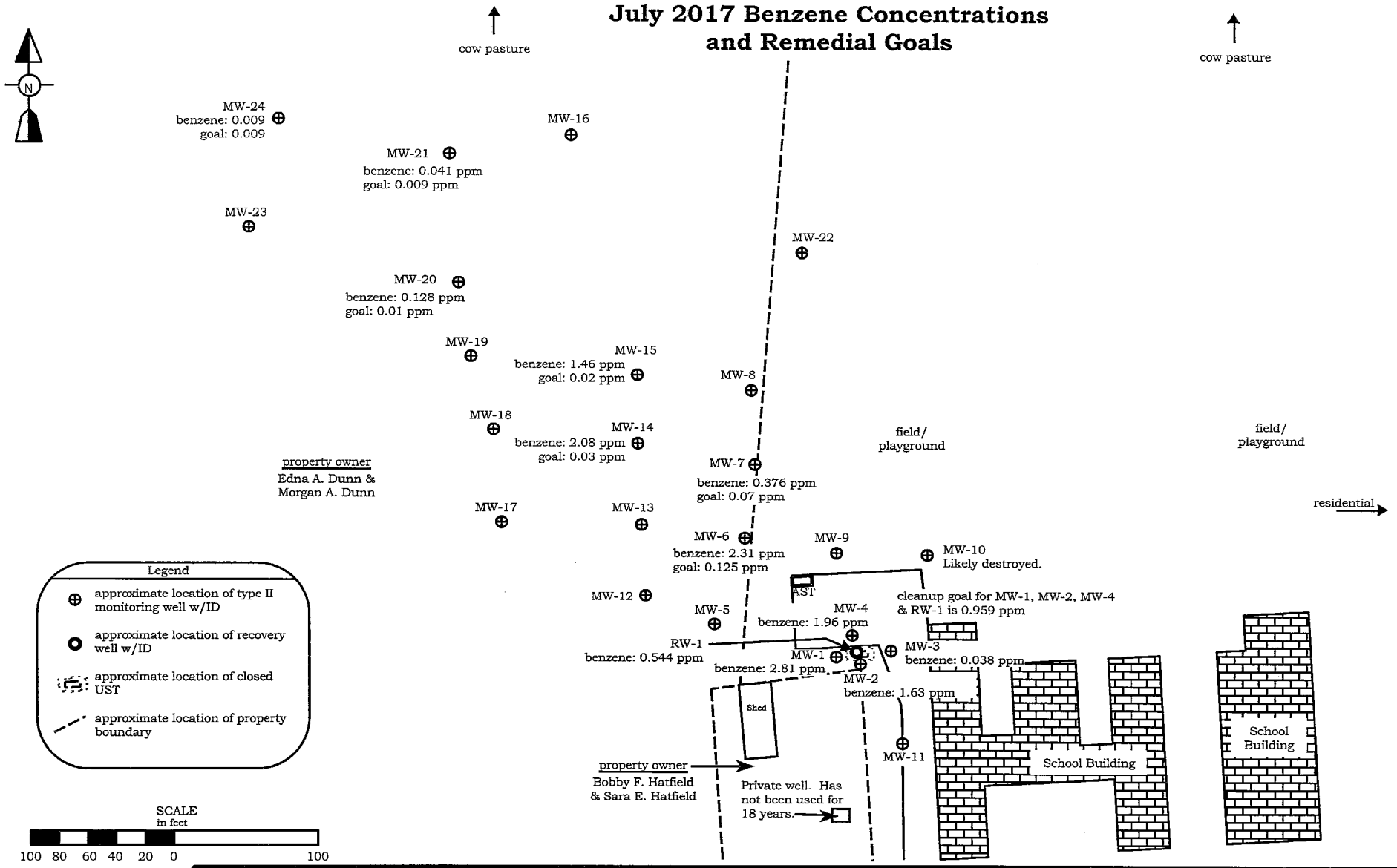


Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-146	DRAWN BY: HKS
DATE: 3/2/16	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

July 2017 Benzene Concentrations and Remedial Goals

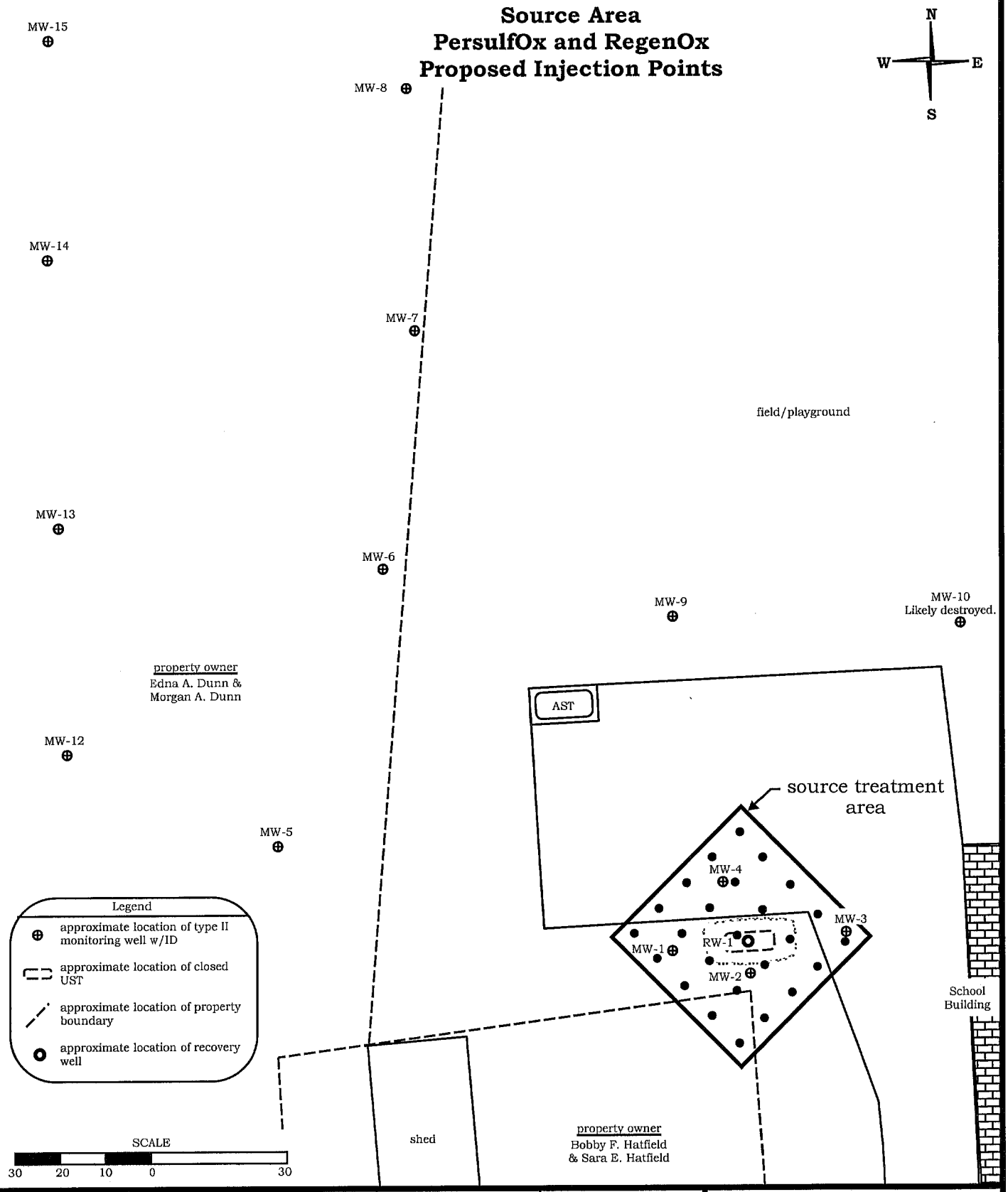


Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-180	DRAWN BY: HKS
DATE: 8/16/18	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Source Area
PersulfOx and RegenOx
Proposed Injection Points



Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID: 15723-109-013688
UST 99-01-15

JOB NUMBER:	SCALE:
MA-1215	1"=30'
DRAWING NO:	DRAWN BY:
1215-178	HKS
DATE:	CHECKED BY:
8/7/18	HKS

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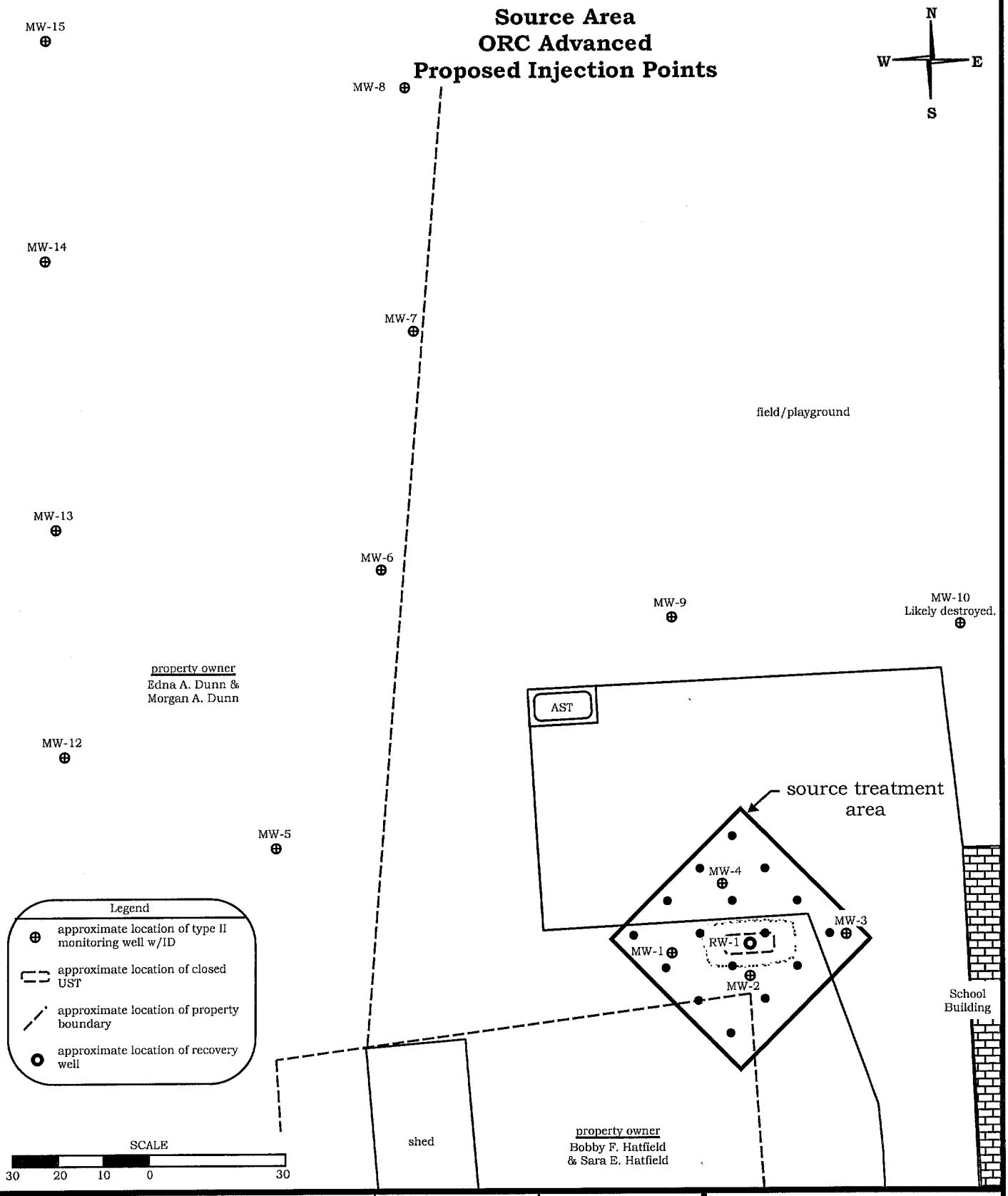
Source Area
ORC Advanced
Proposed Injection Points



Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID: 15723-109-013688
UST 99-01-15

JOB NUMBER:	SCALE:
MA-1215	1"=30'
DRAWING NO:	DRAWN BY:
1215-179	HKS
DATE:	CHECKED BY:
8/7/18	HKS

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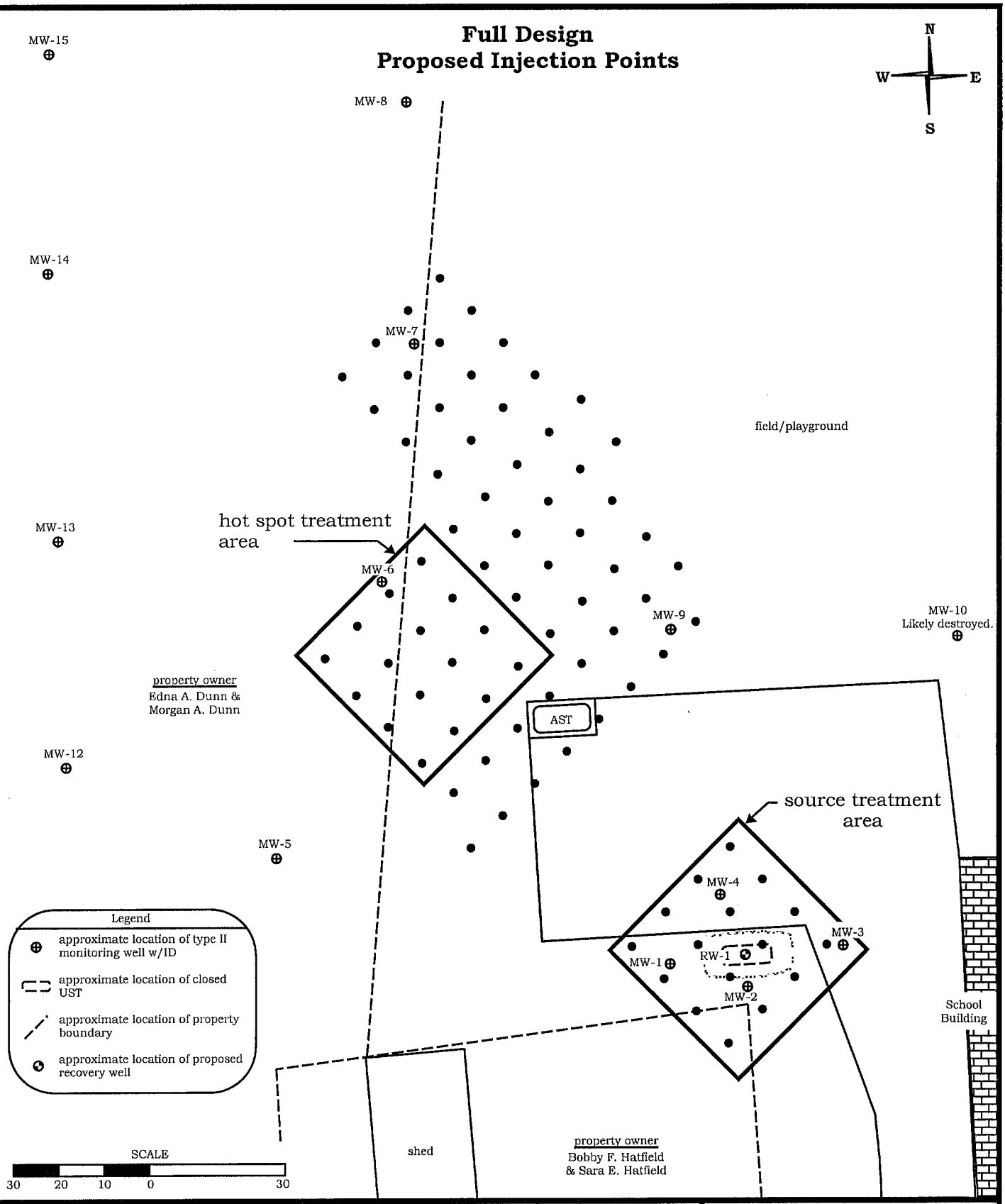
Full Design
Proposed Injection Points



Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID: 15723-109-013688
UST 99-01-15

JOB NUMBER:	SCALE:
MA-1215	1"=30'
DRAWING NO:	DRAWN BY:
1215-181	HKS
DATE:	CHECKED BY:
8/16/18	HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Remedial Cost Proposal

To: EMC **Date:** August 3, 2018

From: Owen Miller - Design Specialist
omiller@regenesis.com 630-277-0855

Subject: ***Preliminary Design and Cost Estimate***

Site: *Banks Middle School - Hot Spot Area*
Banks, Alabama 36005

Location: Dissolved Plume

Applicable Products	Links to View/Download Product Information
RegenOx®	RegenOx
PersulfOx®	PersulfOx
ORC Advanced®	ORC Advanced

REGENESIS is pleased to present you with this design and cost estimate for the proposed treatment at your site utilizing the remediation technologies referenced above. Included within this document you will find the following attachments supporting the proposed approach:

- Map Depicting Treatment Area
- Remedial Design and Cost Estimate
- Product Technical Sheets
- Suggested Performance Monitoring Parameters

Project Summary

This remedial design and cost estimate is for a coupled ISCO and aerobic bioremediation approach. Here we are recommending four (4) applications of PersulfOx and RegenOx. During the last application, ORC-A will be supplied to facilitate aerobic bioremediation to provide a low level polish.

Assumptions

In generating this design proposal REGENESIS relied upon professional judgment and site specific information provided by EMC. Using this information as input, we performed calculations based upon known chemical and geologic relationships to generate an estimate of the mass of product and subsurface placement required to affect remediation of the site. The attached design summary tables specify the assumptions used in preparation of this technical design. We request that these modeling input assumptions be verified by your firm.

REGENESIS developed this Scope of Work in reliance upon the data and professional judgments provided by those whom completed the earlier environmental site assessment(s). The fees and charges associated with the Scope of Work were generated through REGENESIS' proprietary formulas and thus may not conform to billing guidelines, constraints or other limits on fees. REGENESIS does not seek reimbursement directly from any government agency or any governmental reimbursement fund (the "Government"). In any circumstance where REGENESIS may serve as a supplier or subcontractor to an entity which seeks reimbursement from the Government for all or part of the services performed or products provided by REGENESIS, it is the sole responsibility of the entity seeking reimbursement to ensure the Scope of Work and associated charges are in compliance with and acceptable to the Government prior to submission. When serving as a supplier or subcontractor to an entity which seeks reimbursement from the Government, REGENESIS does not knowingly present or cause to be presented any claim for payment to the Government.

Closing

Please feel free to contact me if you need additional information or have any questions regarding our evaluation and/or this correspondence (contact info listed above). Thank you for considering REGENESIS as part or your remedial solution for this project.

REGENESIS

Project Information

Banks Middle School - Hot Spot Area
Banks, Alabama 36005
Dissolved Plume
Prepared For:
EMC

Target Treatment Zone (TTZ) Info	Unit	Value
Treatment Area	ft^2	1,600
Top Treat Depth	ft	29.0
Bot Treat Depth	ft	39.0
Vertical Treatment Interval	ft	10.0
Treatment Zone Volume	ft^3	16,000
Treatment Zone Volume	cy	593
Soil Type	---	sand
Porosity	cm^3/cm^3	0.33
Effective Porosity	cm^3/cm^3	0.20
Treatment Zone Pore Volume	gals	39,497
Treatment Zone Effective Pore Volume	gals	23,938
Fraction Organic Carbon (foc)	g/g	0.002
Soil Density	g/cm^3	1.7
Soil Density	lb/ft^3	108
Soil Weight	lbs	1.7E+06
Hydraulic Conductivity	ft/day	25.0
Hydraulic Conductivity	cm/sec	8.82E-03
Hydraulic Gradient	ft/ft	0.003
GW Velocity	ft/day	0.38
GW Velocity	ft/yr	137

Sources of Oxidant Demand	Unit	Value
Sorbed Phase Contaminant Mass	lbs	181
Dissolved Phase Contaminant Mass	lbs	46.6
Total Contaminant Mass	lbs	227
Stoichiometric PersulfOx Demand	lbs	7,678
Stoichiometric PersulfOx Required	lbs	15,355
Additional Soil Oxidant Demand	g/kg	1.0
SOD PersulfOx Required	lbs	1,920
Total PersulfOx Required	**lbs**	**17,275**

Application Dosing

PersulfOx Required	**lbs**	**17,301**
RegenOx Required	**lbs**	**5,560**

PersulfOx® Application Design Summary

Dissolved Plume	
Application Method	**Direct Push**
Spacing Within Rows (ft)	8
Spacing Between Rows (ft)	8
Injection Points (per app.)	**25**
Number of Applications	**4**
Areal Extent (square ft)	1,600
Top Application Depth (ft bgs)	29
Bottom Application Depth (ft bgs)	39
PersulfOx to be Applied (lbs)	**17,301**
RegenOx to be Applied (lbs)	**5,560**
PersulfOx Solution %	10%
Volume Water (gals)	**18,659**
Total Volume (gals)	**19,802**
Per Application Totals	
PersulfOx per app. (lbs)	*4,325*
Volume Water per app. (gals)	*4,665*
Total Volume per app. (gals)	*4,951*

Field App. Instructions

Field Mixing Ratios
Water per Pt per app (gals)
187
PersulfOx per Pt per app (lbs)
173
Total Volume per Pt per app (gals)
198

Volume per vertical ft (gals)
20

Technical Notes/Discussion

Co-mix and apply PersulfOx and RegenOx.

Assumptions/Qualifications

In generating this preliminary estimate, Regenesis relied upon professional judgment and site specific information provided by others. Using this information as input, we performed calculations based upon known chemical and geologic relationships to generate an estimate of the mass of product and subsurface placement required to affect remediation of the site.

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Prepared By: Owen Miller - Design Specialist
Date: 8/3/2018

REGENESIS

Purchasing Information		
Banks Middle School - Hot Spot Area	**--**	**Dissolved Plume**
PersulfOx Required	**lbs**	**17,301**
RegenOx Required	**lbs**	**5,560**
ORC-A Required	**lbs**	**960**
PersulfOx Cost	**$**	**$40,658**
RegenOx Cost	**$**	**$14,512**
ORC-A Cost	**$**	**$8,592**
Estimated Tax and Freight %	%	15%
Estimated Tax and Freight Cost*	$	$6,099
Estimated Total Product Cost	**$**	**$46,757**

***Note that the combined tax and freight costs are preliminary estimates only. Please contact your local sales manager or Customer Service at 949-366-8000 to obtain a shipping quote. You will be asked to provide a ship-to address and estimated time of delivery.**

Currently Available Packaging Options		
PersulfOx Package Type* **	**# of packages**	**lbs required**
55.1 lb poly-lined bag	314	542,429
2,204 lb supersacks	8	17,632

****Total Project cost is only an estimate; actual project cost may change as the final scope and/or RRS proposal are developed.**

*****Available Package Types are subject to change.**

REGENESIS

Project Info

Banks Middle School - Hot Spot Area
Banks, Alabama 36005
Dissolved Plume
Prepared For:
EMC

Target Treatment Zone (TTZ) Info	Unit	Value
Treatment Area	ft^2	1,600
Top Treat Depth	ft	29.0
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Porosity	cm^3/cm^3	0.33
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Treatment Zone Pore Volume	gals	39,497
Treatment Zone Effective Pore Volume	gals	23,938
Fraction Organic Carbon (foc)	g/g	0.002
Soil Density	g/cm^3	1.7
Soil Density	lb/ft^3	108
Soil Weight	lbs	1.7E+06
Hydraulic Conductivity	ft/day	25.0
Hydraulic Conductivity	cm/sec	8.82E-03
Hydraulic Gradient	ft/ft	0.003
GW Velocity	ft/day	0.38
GW Velocity	ft/yr	137

Sources of Oxygen Demand	Unit	Value

Stoichiometric Demand	Unit	Value

Application Dosing	Unit	Value
ORC Advanced to be Applied	lbs	960

ORC Advanced® Application Design Summary

Dissolved Plume	
Application Method	Direct Push
Spacing Within Rows (ft)	**10.0**
Spacing Between Rows (ft)	**10.0**
Application Points	16
Areal Extent (square ft)	1,600
Top Application Depth (ft bgs)	29
Bottom Application Depth (ft bgs)	39
ORC Advanced to be Applied (lbs)	960
ORC Advanced per point (lbs)	60
Percent Slurry	**30%**
Volume Water (gals)	268
Volume ORC Advanced (gals)	43
Total Application Volume (gals)	312
Injection Volume per Point (gals)	19

Field App Instructions

Field Mixing Ratios

Water per Pt (gals)
17
ORC Advanced per Pt (lbs)
60
Total Volume per Pt (gals)
19

Technical Notes/Discussion

Apply in separate direct push points during the 4th application.

Assumptions/Qualifications

In generating this preliminary estimate, Regenesis relied upon professional judgment and site specific information provided by others. Using this information as input, we performed calculations based upon known chemical and geologic relationships to generate an estimate of the mass of product and subsurface placement required to affect remediation of the site.

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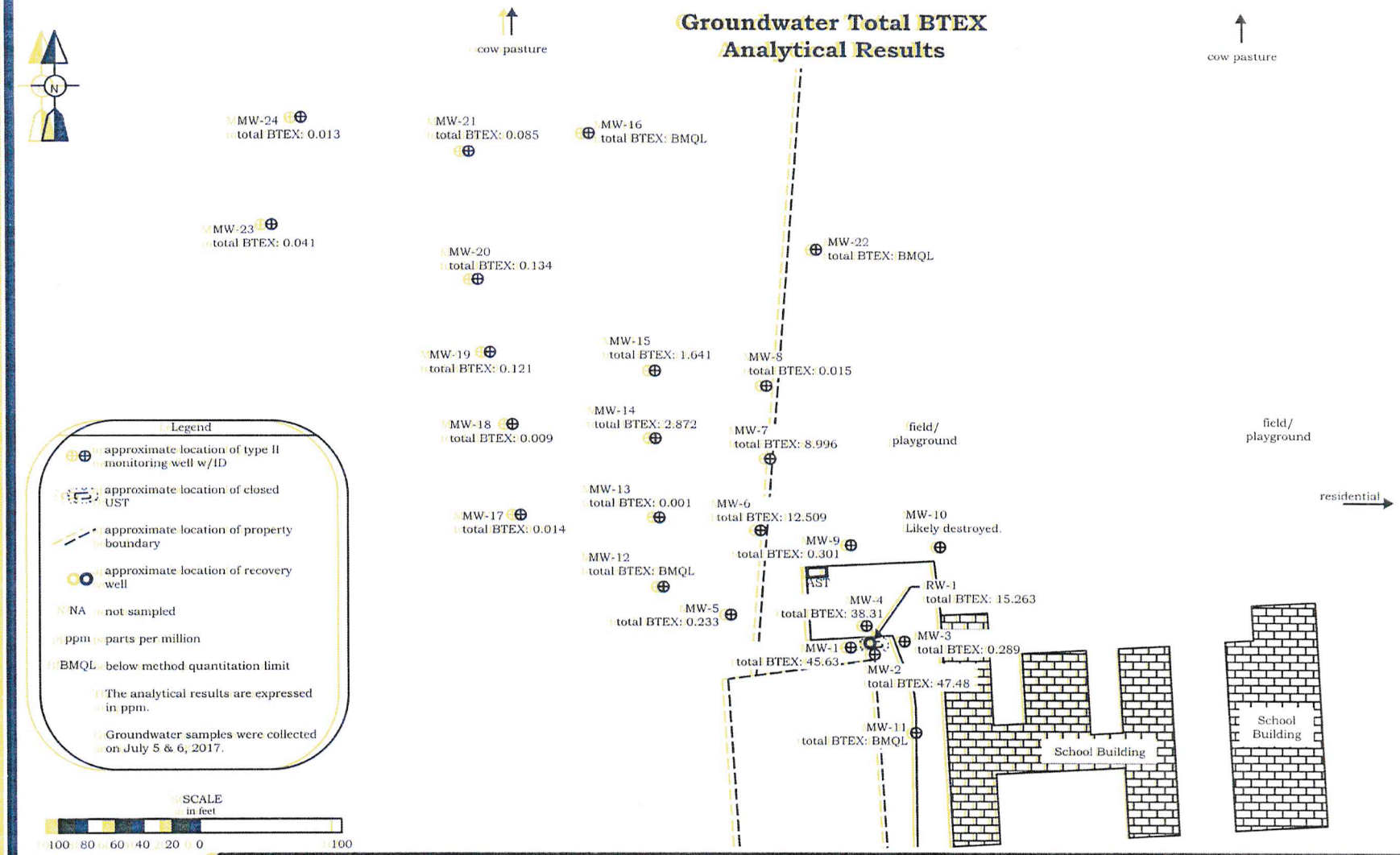
Prepared By: Owen Miller - Design Specialist
Date: 8/3/2018

Groundwater Total BTEX Analytical Results



Banks Middle School
9769 North U.S. Highway 29
Banks, Pike County, Alabama
Facility ID# 15723-109-013688
UST 99-01-15

JOB NUMBER: MA-1215	SCALE: 1" = 100'
DRAWING NO: 1215-160	DRAWN BY: HKS
DATE: 8/2/17	CHECKED BY: HKS

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

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In-Situ Aerobic Bioremediation Performance Monitoring Parameters

Analytical Parameter	Method
Contaminants of Concern (COC's)	Varies
pH	Meter reading taken in flow-through cell (DO can also be measured with a Hach kit)
Dissolved Oxygen (DO)	
Oxidation Reduction Potential (ORP)	
Total Fe	Colorimetric Hach Method or EPA 6000 series with filtered and unfiltered samples
Total Mn	
Dissolved Fe	
Dissolved Mn	
Sulfate	EPA 375.3 or EPA 9056
Nitrate	EPA 353.1 or EPA 9056
Total Organic Carbon (TOC)	EPA 415.1 or EPA 9060
Chemical Oxygen Demand (COD)	EPA 410.1-.2
Biological Oxygen Demand (BOD)	EPA 5210B
Alkalinity	EPA 310.2
Methane, CO2	ASTM D1945

OXYGEN RELEASE COMPOUND

ORC Advanced® Technical Description

ORC Advanced® is an engineered, oxygen release compound designed specifically for enhanced, *in situ* aerobic bioremediation of petroleum hydrocarbons in groundwater and saturated soils. Upon contact with groundwater, this calcium oxyhydroxide-based material becomes hydrated producing a controlled release of molecular oxygen (17% by weight) for periods of up to 12 months on a single application.

Example of ORC Advanced

ORC Advanced decreases time to site closure and accelerates degradation rates up to 100 times faster than natural degradation rates. A single ORC Advanced application can support aerobic biodegradation for up to 12 months with minimal site disturbance, no permanent or emplaced above ground equipment, piping, tanks, power sources, etc are needed. There is no operation or maintenance required. ORC Advanced provides lower costs, greater efficiency and reliability compared to engineered mechanical systems, oxygen emitters and bubblers.

ORC Advanced provides remediation practitioners with a significantly faster and highly effective means of treating petroleum contaminated sites. Petroleum hydrocarbon contamination is often associated with retail petroleum service stations resulting from leaking underground storage tanks, piping and dispensers. As a result, ORC Advanced technology and applications have been tailored around the remediation needs of the retail petroleum industry and include: tank pit excavations, amending and mixing with backfill, direct-injection, bore-hole backfill, ORC Advanced Pellets for waterless and dustless application, combined ISCO and bioremediation applications, etc.

For a list of treatable contaminants with the use of ORC Advanced, view the Range of Treatable Contaminants Guide

Chemical Composition

- Calcium hydroxide oxide
- Calcium hydroxide
- Monopotassium phosphate
- Dipotassium phosphate

Properties

- Physical state: Solid
- Form: Powder
- Odor: Odorless
- Color: White to pale yellow
- pH: 12.5 (3% suspension/water)

OXYGEN RELEASE COMPOUND

ORC Advanced® Technical Description

Storage and Handling Guidelines

Storage

Store in a cool, dry place out of direct sunlight

Store in original tightly closed container

Store in a well-ventilated place

Do not store near combustible materials

Store away from incompatible materials

Provide appropriate exhaust ventilation in places where dust is formed

Handling

Minimize dust generation and accumulation

Keep away from heat

Routine housekeeping should be instituted to ensure that dust does not accumulate on surfaces

Observe good industrial hygiene practices

Take precaution to avoid mixing with combustibles

Keep away from clothing and other combustible materials

Avoid contact with water and moisture

Avoid contact with eyes, skin, and clothing

Avoid prolonged exposure

Wear appropriate personal protective equipment

Applications

- Slurry mixture direct-push injection through hollow rods or direct-placement into boreholes
- *In situ* or *ex situ* slurry mixture into contaminated backfill or contaminated soils in general
- Slurry mixture injections in conjunction with chemical oxidants like RegenOx or PersulfOx
- Filter sock applications in groundwater for highly localized treatment
- *Ex situ* biopiles

Health and Safety

Wash thoroughly after handling. Wear protective gloves, eye protection, and face protection. Please review the ORC Advanced Safety Data Sheet for additional storage, usage, and handling requirements.

REGENESIS®

www.regenesis.com
1011 Calle Sombra, San Clemente CA 92673
949.366.8000

PersulfOx® Technical Description

PersulfOx is an *In Situ* Chemical Oxidation (ISCO) reagent that destroys organic contaminants found in groundwater and soil through powerful, yet controlled, chemical reactions. A sodium persulfate-based technology (figure 1), PersulfOx employs a patented catalyst to enhance the oxidative destruction of both hydrocarbons and chlorinated contaminants in the subsurface.

Example of PersulfOx

Typically, sodium persulfate is activated with the addition of heat, chelated metals, hydrogen peroxide, or base in order to generate sulfate radicals. These activation processes are inherently complex, costly and can pose additional health and safety risks. In comparison, PersulfOx is a relatively safe and easy-to-use ISCO agent with a built-in catalyst which activates the persulfate component, generating contaminant-destroying free radicals without the need for the addition of a separate activator. The equation below shows the net complete oxidation of toluene, a constituent of gasoline, by PersulfOx:

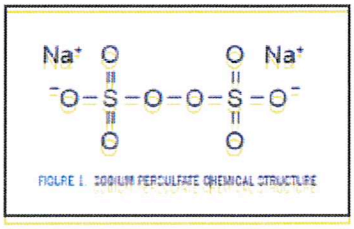

FIGURE 1: SODIUM PERSULFATE CHEMICAL STRUCTURE

For a list of treatable contaminants with the use of PersulfOx, view the Range of Treatable Contaminants Guide

Chemical Composition

- Sodium Persulfate - CAS #7775-27-1
- Sodium Silicate - CAS #1344-09-8

Properties

- pH - 7 to 11.5 at 25°C
- Appearance – White, free-flowing powder, clear to cloudy when mixed with water
- Odor – Not detectable
- Vapor Pressure – None
- Chemical Hazard Classification - Class 5.1 Oxidizer

Storage and Handling Guidelines

Storage

Store locked up

Keep away from heat

Store in a cool, dry place out of direct sunlight

Handling

Minimize dust generation and accumulation

Routine housekeeping should be instituted to ensure that dust does not accumulate on surfaces

PersulfOx® Technical Description

Storage (continued)

Store in original tightly closed container

Store in a well-ventilated place

Do not store near combustible materials

Store away from incompatible materials

Recommended to store at less than 40°C

Provide appropriate exhaust ventilation in places where dust is formed

Handling (continued)

Avoid mixing with combustibles

Avoid contamination

Keep away from clothing and other combustible materials

Wear appropriate personal protective equipment

Avoid breathing dust

Avoid contact with eyes, skin, and clothing

Avoid prolonged exposure

Do not taste or swallow

When using, do not eat, drink or smoke

Wear appropriate personal protective equipment

Wash hands thoroughly after handling

Observe good industrial hygiene practices

Applications

- PersulfOx is mixed with water at a rate of 5% to 20% prior to application.
- For most applications, REGENESIS suggests a 10-15% solution. The resulting mixture has viscosity similar to water.
- Injects into formation through direct push injection points, injection wells or other injection delivery systems.

Application instructions for this product are contained here PersulfOx Application Instructions.

Health and Safety

Material is relatively safe to handle; however, avoid contact with eyes, skin and clothing. OSHA Level D personal protection equipment including: vinyl or rubber gloves, eye protection, and dust mask are recommended when handling this product. Please review the Material Safety Data Sheet for additional storage, usage, and handling requirements here: PersulfOx SDS.

RegenOx® Technical Description

RegenOx is an advanced chemical oxidation technology that destroys contaminants through powerful, yet controlled chemical reactions. This product maximizes *in situ* chemical oxidation (ISCO) performance through use of a two-part product system; a sodium percarbonate oxidizer complex activated by a patented surface catalyst system. The technology degrades pollutants through direct oxidation, as well as through the generation of a suite of free radical compounds which in turn oxidize recalcitrant contaminants. RegenOX rapidly and effectively destroys a range of target contaminants including petroleum hydrocarbons and chlorinated compounds.

Close up of RegenOx

RegenOx is especially effective in destroying target contaminants present in high concentration source areas within the saturated and vadose zones. For petroleum hydrocarbon treatment, RegenOx produces oxygen as a result of its reactions, providing seamless transition from ISCO to enhanced aerobic bioremediation. RegenOx produces minimal heat when applied, and continues to destroy contaminants for up to 30 days on a single application. RegenOx is safe for use in direct contact with underground utilities, since it is non-corrosive to concrete and most metals.

$$C_2Cl_4 + 4/3\ Na_2CO_3 \bullet 2H_2O_2 + 4NaOH \rightarrow 2CO_2 + 4NaCl + 4H_2O + 4/3\ Na_2CO_3$$

- Free Radical Oxidation via production of:
  - Perhydroxyl Radical ($HO_2\bullet$)
  - Hydroxyl Radical ($OH\bullet$)
  - Superoxide Radical ($O_2^-\bullet$)

For a list of treatable contaminants with the use of RegenOx, view the Range of Treatable Contaminants Guide

Chemical Composition – Part A Oxidant

- Sodium Percarbonate – CAS #15630-89-4
- Sodium Carbonate Monohydrate - CAS #5968-11-6
- Silicic Acid – CAS #7699-11-6
- Silica Gel – CAS #63231

Chemical Composition – Part B Activator Complex

- Silicic Acid, Sodium Salt, Sodium Silicate - CAS#1344-09-08
- Silica Gel – CAS #63231
- Ferrous Sulfate – CAS #7720-78-7
- Water – CAS#7732-18-5

Properties

- Bulk Density – Part A 0.9-1.2 g/cm3; Part B – 1.39 g/cm3
- pH - 10-11 per recommended mixing ratios (3-5% oxidant in solution)
- Solubility – Oxidant - 14.5 g/100 g water; Activator – miscible in water
- Appearance – Brown to orange-brown when mixed with water
- Odor – Not detectable
- Vapor Pressure – None
- Non-hazardous

RegenOx® Technical Description

Storage and Handling Guidelines

Storage

Store in a cool, dry place out of heat/direct sunlight

Store at temperatures not to exceed 40°C/104°F

Store in original tightly closed container

Store in a well-ventilated place

Do not store near combustible materials

Store away from incompatible materials

Protect from contamination

Provide appropriate exhaust ventilation in places where dust is formed

Handling

Minimize dust generation and accumulation

Observe good industrial hygiene practices

Keep away from clothing and combustible materials

Take any precaution to avoid mixing with combustibles

Avoid contact with eyes

Do not taste or swallow

Do not eat, drink or smoke nearby

Wear appropriate personal protective equipment

Wash hands thoroughly after handling

Avoid release to the environment

Applications

RegenOx is applied using direct-injection techniques or wells. The application process enables the two- part product to be combined, then pressure-injected into the zone of contamination and moved out into the aquifer media. Application instructions for this product are contained in the RegenOx Application Instructions Guide.

Health and Safety

Material is relatively safe to handle; however, we recommend avoiding contact with eyes, skin and clothing. OSHA Level D personal protection equipment including vinyl or rubber gloves, eye protection and dust mask are recommended when handling this product. Please review the Material Safety Data Sheet for additional storage, packaging, usage, and handling requirements here: RegenOx Part A SDS and RegenOx Part B SDS.

REGENESIS

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1011 Calle Sombra, San Clemente CA 92673
949.366.8000

REGENESIS

Remedial Design Assumptions and Qualifications

Cost Estimate Disclaimer: The cost listed assumes conditions set forth within the proposed scope of work and assumptions and qualifications. Changes to either could impact the final cost of the project. This may include final shipping arrangements, sales tax or application related tasks such as product storage and handling, access to water, etc. If items listed need to be modified, please contact Regenesis for further evaluation.

Shipping Estimates: Shipping estimates are valid for 30 days. All shipping charges are estimates and actual freight charges are calculated at the time of invoice. Additional freight charges may be assessed for any accessorial requested at the time of delivery. The estimate included within assumes standard shipping.

Standard delivery is between 8am -5pm Monday –Friday. *accessorial – can include, but not limited to lift gate and pallet jack at delivery, inside delivery, time definite deliveries, and delivery appointments.

Please communicate any requirements for delivery with the customer service department at the time the order is placed.

Return Policy: To initiate a return please contact your local sales manager for an RMA. A 15% re-stocking fee will be charged for all returned goods. Return freight must be prepaid. All requests to return product must be in original condition and no product will be accepted for return after 90 days from date of delivery.

Professional Judgement: In generating this estimate, REGENESIS relied upon professional judgment and site specific information provided by others. Using this information as input, we performed calculations based upon known chemical and geologic relationships to generate an estimate of the mass of product and subsurface placement required to affect remediation of the site.

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REGENESIS
1011 Calle Sombra
San Clemente, CA 92673-6244
Tel: 949.366.8000 • Fax: 949.366.8090

Terms and Conditions
Products and Services

1. PAYMENT TERMS. Net 30 Days. Accounts outstanding after 30 days will be assessed 1.5% monthly interest. Volume discount pricing will be rescinded on all accounts outstanding over 90 days. An early payment discount of 1.5% Net 10 is available for cash or check payments only. We accept Master Card, Visa and American Express.

2. RETURN POLICY. A 15% re-stocking fee will be charged for all returned goods. All requests to return product must be pre-approved by seller. Returned product must be in original condition and no product will be accepted for return after a period of 90 days.

3 FORCE MAJEURE. Seller shall not be liable for delays in delivery or services or failure to manufacture or deliver due to causes beyond its reasonable control, including but not limited to acts of God, acts of buyer, acts of military or civil authorities, fires, strikes, flood, epidemic, war, riot, delays in transportation or car shortages, or inability to obtain necessary labor, materials, components or services through seller's usual and regular sources at usual and regular prices. In any such event Seller may, without notice to buyer, at any time and from time to time, postpone the delivery or service dates under this contract or make partial delivery or performance or cancel all or any portion of this and any other contract with buyer without further liability to buyer. Cancellation of any part of this order shall not affect Seller's right to payment for any product delivered or service performed hereunder.

4. LIMITED WARRANTY. Seller warrants the product(s) sold and services provided as specified on face of invoice, solely to buyer. Seller makes no other warranty of any kind respecting the product and services, and expressly DISCLAIMS ALL OTHER WARRANTIES OF WHATEVER KIND RESPECTING THE PRODUCT AND SERVICES, INCLUDING ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND NON-INFRINGEMENT.

5. DISCLAIMER. Where warranties to a person other than buyer may not be disclaimed under law, seller extends to such a person the same warranty seller makes to buyer as set forth herein, subject to all disclaimers, exclusions and limitations of warranties, all limitations of liability and all other provisions set forth in the Terms and Conditions herein. Buyer agrees to transmit a copy of the Terms and Conditions set forth herein to any and all persons to whom buyer sells, or otherwise furnishes the products and/or services provided buyer by seller and buyer agrees to indemnify seller for any liability, loss, costs and attorneys' fees which seller may incur by reason, in whole or in part, of failure by buyer to transmit the Terms and Conditions as provided herein.

6. LIMITATION OF SELLER'S LIABILITY AND LIMITATION OF BUYER'S REMEDY. Seller's liability on any claim of any kind, including negligence, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair or use of any goods or performance of any services covered by or furnished hereunder, shall in no case exceed the lesser of (1) the cost of repairing or replacing goods and repeating the services failing to conform to the forgoing warranty or the price of the goods and/or services or part thereof which gives rise to the claim. IN NO EVENT SHALL SELLER BE LIABLE FOR SPECIAL INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, OR FOR DAMAGES IN THE NATURE OF PENALTIES.

7. INDEMNIFICATION. Buyer agrees to defend and indemnify seller of and from any and all claims or liabilities asserted against seller in connection with the manufacture, sale, delivery, resale or repair or use of any goods, and performance of any services, covered by or furnished hereunder arising in whole or in part out of or by reason of the failure of buyer, its agents, servants, employees or customers to follow instructions, warnings or recommendations furnished by seller in connection with such goods and services, by reason of the failure of buyer, its agents, servants, employees or customers to comply with all federal, state and local laws applicable to such goods and services, or the use thereof, including the Occupational Safety and Health Act of 1970, or by reason of the negligence or misconduct of buyer, its agents, servants, employees or customers.

8. EXPENSES OF ENFORCEMENT. In the event seller undertakes any action to collect amounts due from buyer, or otherwise enforce its rights hereunder, Buyer agrees to pay and reimburse Seller for all such expenses, including, without limitation, all attorneys and collection fees.

9. TAXES. Liability for all taxes and import or export duties, imposed by any city, state, federal or other governmental authority, shall be assumed and paid by buyer. Buyer further agrees to defend and indemnify seller against any and all liabilities for such taxes or duties and legal fees or costs incurred by seller in connection therewith.

10. ASSISTANCE AND ADVICE. Upon request, seller in its discretion will furnish as an accommodation to buyer such technical advice or assistance as is available in reference to the goods and services. Seller assumes no obligation or liability for the advice or assistance given or results obtained, all such advice or assistance being given and accepted at buyer's risk.

11. SITE SAFETY. Buyer shall provide a safe working environment at the site of services and shall comply with all applicable provisions of federal, state, provincial and municipal safety laws, building codes, and safety regulations to prevent accidents or injuries to persons on, about or adjacent to the site.

12. INDEPENDENT CONTRACTOR. Seller and Buyer are independent contractors and nothing shall be construed to place them in the relationship of partners, principal and agent, employer/employee or joint ventures. Neither party will have the power or right to bind or obligate the other party except as may be expressly agreed and delegated by other party, nor will it hold itself out as having such authority.

13. REIMBURSEMENT. Seller shall provide the products and services in reliance upon the data and professional judgments provided by or on behalf of buyer. The fees and charges associated with the products and services thus may not conform to billing guidelines, constraints or other limits on fees. Seller does not seek reimbursement directly from any government agency or any governmental reimbursement fund (the "Government"). In any circumstance where seller may serve as a supplier or subcontractor to an entity which seeks reimbursement from the Government for all or part of the services performed or products provided by seller, it is the sole responsibility of the buyer or other entity seeking reimbursement to ensure the products and services and associated charges are in compliance with and acceptable to the Government prior to submission. When serving as a supplier or subcontractor to an entity which seeks reimbursement from the Government, seller does not knowingly present or cause to be presented any claim for payment to the Government.

14. APPLICABLE LAW/JURISDICTION AND VENUE. The rights and duties of the parties shall be governed by, construed, and enforced in accordance with the laws of the State of California (excluding its conflict of laws rules which would refer to and apply the substantive laws of another jurisdiction). Any suit or proceeding hereunder shall be brought exclusively in state or federal courts located in Orange County, California. Each party consents to the personal jurisdiction of said state and federal courts and waives any objection that such courts are an inconvenient forum.

15. ENTIRE AGREEMENT. This agreement constitutes the entire contract between buyer and seller relating to the goods or services identified herein. No modifications hereof shall be binding upon the seller unless in writing and signed by seller's duly authorized representative, and no modification shall be effected by seller's acknowledgment or acceptance of buyer's purchase order forms containing different provisions. Trade usage shall neither be applicable nor relevant to this agreement, nor be used in any manner whatsoever to explain, qualify or supplement any of the provisions hereof. No waiver by either party of default shall be deemed a waiver of any subsequent default.

REGENESIS

Project Information

Banks Middle School - MW-7 Hot Spot
Banks, Alabama 36005
Dissolved Plume
Prepared For:
EMC

Target Treatment Zone (TTZ) Info	Unit	Value
Treatment Area	ft^2	1,600
Top Treat Depth	ft	27.0
Bot Treat Depth	ft	38.0
Vertical Treatment Interval	ft	11.0
Treatment Zone Volume	ft^3	17,600
Treatment Zone Volume	cy	652
Soil Type	---	sand
Porosity	cm^3/cm^3	0.47
Effective Porosity	cm^3/cm^3	0.32
Treatment Zone Pore Volume	gals	61,879
Treatment Zone Effective Pore Volume	gals	42,130
Fraction Organic Carbon (foc)	g/g	0.013
Soil Density	g/cm^3	1.5
Soil Density	lb/ft^3	91
Soil Weight	lbs	1.6E+06
Hydraulic Conductivity	ft/day	0.9
Hydraulic Conductivity	cm/sec	3.17E-04
Hydraulic Gradient	ft/ft	0.012
GW Velocity	ft/day	0.03
GW Velocity	ft/yr	12
Sources of Oxidant Demand	**Unit**	**Value**
Sorbed Phase Contaminant Mass	lbs	434
Dissolved Phase Contaminant Mass	lbs	40.3
Total Contaminant Mass	lbs	474
Stoichiometric PersulfOx Demand	lbs	16,544
Engineering/Safety Factor	---	**1.0**
Stoichiometric PersulfOx Required	lbs	8,272
Additional Soil Oxidant Demand	g/kg	1.5
SOD PersulfOx Required	lbs	1,327
Total PersulfOx Required	**lbs**	**9,599**

Application Dosing

PersulfOx Required	**lbs**	**9,643**

PersulfOx® Application Design Summary

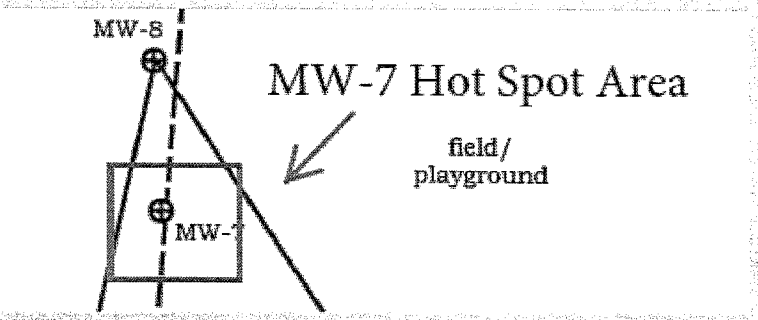
Dissolved Plume	
Application Method	**Direct Push**
Spacing Within Rows (ft)	10
Spacing Between Rows (ft)	10
Injection Points (per app.)	**16**
Number of Applications	**3**
Areal Extent (square ft)	1,600
Top Application Depth (ft bgs)	27
Bottom Application Depth (ft bgs)	38
PersulfOx to be Applied (lbs)	**9,643**
PersulfOx Solution %	10%
Volume Water (gals)	**10,399**
Total Volume (gals)	**10,881**

Field App. Instructions

Field Mixing Ratios

Water per Pt (gals)	217
PersulfOx per Pt (lbs)	201
Total Volume per Pt (gals)	227
Volume per vertical ft (gals)	21

Technical Notes/Discussion



Prepared By: Corinne Ketcham - East Region Technical Manager

Assumptions/Qualifications

In generating this preliminary estimate, Regenesis relied upon professional judgment and site specific information provided by others. Using this information as input, we performed calculations based upon known chemical and geologic relationships to generate an estimate of the mass of product and subsurface placement required to affect remediation of the site.

REGENESIS

Purchasing Information

Banks Middle School - MW-7 Hot Spot -- Dissolved Plume

PersulfOx Required	**lbs**	**9,643**
PersulfOx Cost	**$**	**$24,106**
Estimated Tax and Freight %	%	15%
Estimated Tax and Freight Cost	$	$3,616
Estimated Total Product Cost	**$**	**$27,722**

***Note that the combined tax and freight costs are preliminary estimates only. Please contact your local sales manager or Customer Service at 949-366-8000 to obtain a shipping quote. You will be asked to provide a ship-to address and estimated time of delivery.**

Currently Available Packaging Options

PersulfOx Package Type**	# of packages	lbs required
55.1 lb poly-lined bag	175	9,643
2,204 lb supersacks	5	11,020

****Available Package Types are subject to change.**

REGENESIS

Project Info

Banks Middle School - Treatment Area 1
Banks, Alabama 36005
Dissolved Plume
Prepared For:
EMC

Target Treatment Zone (TTZ) Info	Unit	Value
Barrier Length	ft	100
Top Treat Depth	ft	30.0
Bot Treat Depth	ft	38.0
Vertical Treatment Interval	ft	8.0
Treatment Zone Volume	ft^3	12,000
Treatment Zone Volume	cy	444
Soil Type	—	sand
Porosity	cm^3/cm^3	0.33
Effective Porosity	cm^3/cm^3	0.20
Treatment Zone Pore Volume	gals	29,623
Treatment Zone Effective Pore Volume	gals	17,953
Fraction Organic Carbon (foc)	g/g	0.002
Soil Density	g/cm^3	1.7
Soil Density	lb/ft^3	108
Soil Weight	lbs	1.3E+06
Hydraulic Conductivity	ft/day	25.0
Hydraulic Conductivity	cm/sec	8.82E-03
Hydraulic Gradient	ft/ft	0.003
GW Velocity	ft/day	0.38
GW Velocity	ft/yr	137
Sources of Oxygen Demand	**Unit**	**Value**
Dissolved Phase Contaminant Mass	lbs	1
Sorbed Phase Contaminant Mass	lbs	4
Reduced Metals (Fe2+ and Mn2+) Mass	lbs	7
BOD mass equivalent	lbs	5
COD mass equivalent	lbs	5
Total Mass Contributing to O_2 Demand	**lbs**	**22**
Stoichiometric Demand	**Unit**	**Value**
Stoichiometric O_2 Demand	lbs	26
Stoichiometric ORC Advanced Demand	**lbs**	**151**
Application Dosing	**Unit**	**Value**
ORC Advanced to be Applied	**lbs**	**2,400.0**

ORC Advanced® Application Design Summary

Dissolved Plume	
Barrier Length (ft)	100
Spacing Within Barrier	10.0
Number of Lines	1
Application Points	50
Application Method	Direct Push
Top Application Depth (ft bgs)	30
Bottom Application Depth (ft bgs)	38
ORC Advanced to be Applied (lbs)	2,400
ORC Advanced per point (lbs)	48
Percent Slurry	30%
Volume Water (gals)	671
Volume ORC Advanced (gals)	108
Total Application Volume (gals)	779
Injection Volume per Point (gals)	16

Field App Instructions

Input special application instructions here as needed.

Field Mixing Ratios

Water per Pt (gals)
13
ORC Advanced per Pt (lbs)
48
Total Volume per Pt (gals)
16

Technical Notes/Discussion

Prepared By: ***Corinne Ketcham - East Region Technical Manager***

Assumptions/Qualifications

In generating this preliminary estimate, Regenesis relied upon professional judgment and site specific information provided by others. Using this information as input, we performed calculations based upon known chemical and geologic relationships to generate an estimate of the mass of product and subsurface placement required to affect remediation of the site.

REGENESIS

Purchasing Information

Banks Middle School - Treatment Area 1	--	Dissolved Plume
ORC Advanced Required	**lbs**	**2,400.0**
ORC Advanced Cost*	**$**	**$21,000**
Estimated Tax and Freight %	%	15%
Estimated Tax and Freight Cost	$	$3,150
Estimated Total Product Cost	**$**	**$24,150**

***Note that the combined tax and freight costs are preliminary estimates only. Please contact your local sales manager or Customer Service at 949-366-8000 to obtain a shipping quote. You will be asked to provide a ship-to address and estimated time of delivery.**

Currently Available Packaging Options

Package Type**	# of packages	lbs required
40 lb poly lined bags	60	2,400
250 lb cardboard drums	10	2,500

****Available Package Types are subject to change.**

BORING LOG(S)

SHEET 1 OF 1 SHEETS

1. PROJECT	Banks Middle School	10. SIZE AND TYPE OF BIT	4 1/4" ID & 6 1/4" ID HSA
2. LOCATION	Banks, Alabama	11. DATUM FOR ELEVATION SHOWN	TBM elev. of 565'
3. DRILLING AGENCY	Technical Drilling Services, Inc.	12. MANUFACTUR'S DESIGN OF DRILL	CME 75
4. HOLE NO.	RW-1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN (DISTURBED / UNDISTURBED)	5 (disturbed)
5. NAME OF DRILLER	Curtis	14. TOTAL NO. CORE BOXES	N/A
6. DIRECTION OF HOLE	Vertical	15. ELEVATION GROUNDWATER	534.00' (8/17/16)
7. THICKNESS OF OVERBURDEN	N/A	16. DATE HOLE	7/22/16
8. DEPTH DRILLED INTO ROCK	N/A	17. ELEVATION TOP OF HOLE	564.83'
9. TOTAL DEPTH OF HOLE	40 feet (sampled to 41')	18. TOTAL CORE RECOVERY FOR BORING	N/A
		19. SIGNATURE OF INSPECTOR	

W/C	DEPTH (FEET)	SYM	CLASSIFICATION OF MATERIALS (DESCRIPTION)
			red silty clay
dry			2.5YR 6/6 red micaceous silty sand
dry	10		2.5YR 5/6 red micaceous silty sand (petroleum odor)
moist			
moist	20		10YR 5/6 yellowish brown clay
moist			10YR 5/6 yellowish brown silty sand
moist	30		7.5YR 6/6 reddish yellow micaceous silty sand
saturated			7.5YR 7/6 reddish yellow micaceous fine to medium sand (petroleum odor 34'-36')
saturated	40		boring terminated at 40' (tooling to 41')
	50		
	60		
	70		

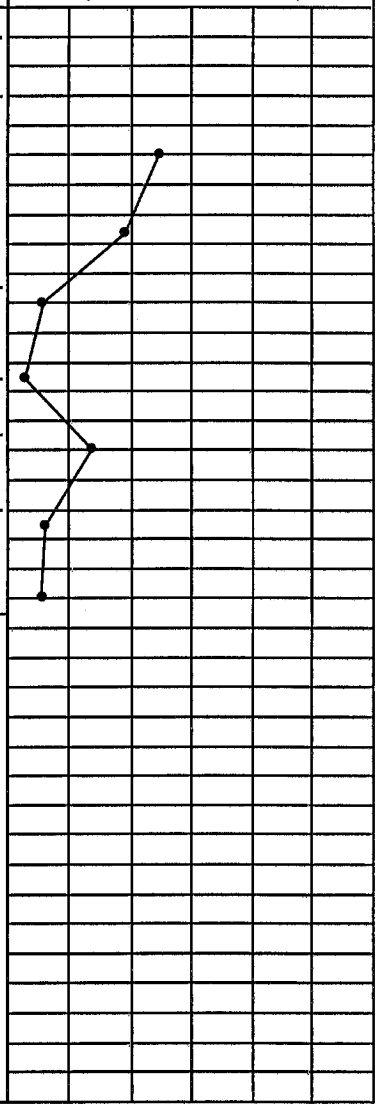
note: the dotted lines for stratigraphic breaks are approximate

Sample Interval	PID (ppm)	BTEX (ppm)	MTBE (ppm)	naphthalene (ppm)
4'-6'	3	NA	NA	NA
9'-11'	16	NA	NA	NA
14'-16'	40	NA	NA	NA
19'-21'	60	23.800	10.100	*0.301
24'-26'	50	NA	NA	NA
29'-31'	60	0.049	0.388	0.026
34'-36'	70	NA	NA	NA
39'-41'	4	NA	NA	NA

* result is above practical detection limit and below reporting limit

A four-inch diameter type II recovery well was set at approximately forty feet below ground surface. The well was constructed with thirty feet of PVC well screen and approximately ten feet of PVC riser.

STANDARD-PENETRATION (BLOWS PER FOOT)



ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Elevations are in feet and based on a temporary benchmark elevation of 565.00 feet above mean sea level which was determined by interpolating between contour lines on a USGS 7.5 minute topographic quadrangle (Banks, Alabama).

RW-1

BORING LOG(S)

SHEET 1 OF 1 SHEETS

1. PROJECT Banks Middle School	10. SIZE AND TYPE OF BIT 4.25" ID/6.0" OD HSA
2. LOCATION Banks, Alabama	11. DATUM FOR ELEVATION SHOWN TBM Elev. of 565 ft. AMSL
3. DRILLING AGENCY CTL/CCI	12. MANUFACTUR'S DESIGN OF DRILL CME 75
4. HOLE NO. MW-1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN (DISTURBED / UNDISTURBED) 8 disturbed
5. NAME OF DRILLER Jason Christian	14. TOTAL NO. CORE BOXES N/A
6. DIRECTION OF HOLE Vertical	15. ELEVATION GROUNDWATER 531.30 feet AMSL
7. THICKNESS OF OVERBURDEN Unknown	16. DATE HOLE 4/29/99
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE 565.36 feet AMSL
9. TOTAL DEPTH OF HOLE 40 feet	18. TOTAL CORE RECOVERY FOR BORING N/A
	19. SIGNATURE OF INSPECTOR

W/C	DEPTH (FEET)	SYM	CLASSIFICATION OF MATERIALS (DESCRIPTION)
	5		red (2.5YR 4/6), micaceous, fine to medium grained silty sand
	10		
	15		yellowish-brown (10YR 5/8), micaceous, sandy clay
	20		
	25		yellowish-brown (10YR 5/8), micaceous, fine to medium grained silty sand
	30		
moist ▽	35		yellow (10YR 7/6), micaceous, fine to medium grained silty sand
satu-rated			reddish-brown (2.5YR 5/4), micaceous, fine to medium grained sand
	40		Boring terminated at 40'

STANDARD-PENETRATION (BLOWS PER FOOT)

0 5 10 15 20 25 30

2 inch diameter type II monitoring well set at approximately 40 feet BGS

Sample Interval	PID Reading	Sample Interval	PID Reading
3 - 5'	0 ppm	23 - 25'	2.5 ppm
8 - 10'	11 ppm	28 - 30'	6 ppm
13 - 15'	10 ppm	33 - 35'	4 ppm
18 -20'	4 ppm	38 - 40'	6 ppm

Sample Interval	Total BTEX	MTBE	Total PAH
8 - 10'	BDL	15 ppb	BDL
13 - 15'	19,649 ppb	2,450 ppb	157 ppb
38 - 40'	130 ppb	28 ppb	BDL

EMC ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Elevations are in feet and based on a temporary benchmark elevation of 565 feet above mean sea level which was determined by interpolating between contour lines on a USGS 7.5 minute topographic quadrangle (Banks, Alabama).

MW-1

BORING LOG(S) SHEET 1 OF 1 SHEETS	10. SIZE AND TYPE OF BIT 4.25" ID/6.0" OD HSA
1. PROJECT Banks Middle School	11. DATUM FOR ELEVATION SHOWN TBM Elev. of 565 ft. AMSL
2. LOCATION Banks, Alabama	12. MANUFACTUR'S DESIGN OF DRILL CME 75
3. DRILLING AGENCY CTL/CCI	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN (DISTURBED / UNDISTURBED) 8 disturbed
4. HOLE NO. MW-2	14. TOTAL NO. CORE BOXES N/A
5. NAME OF DRILLER Jason Christian	15. ELEVATION GROUNDWATER 531.39 feet AMSL
6. DIRECTION OF HOLE Vertical	16. DATE HOLE 4/29/99
7. THICKNESS OF OVERBURDEN Unknown	17. ELEVATION TOP OF HOLE 565.34 feet AMSL
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING N/A
9. TOTAL DEPTH OF HOLE 40 feet	19. SIGNATURE OF INSPECTOR

W/C	DEPTH (FEET)	SYM	CLASSIFICATION OF MATERIALS (DESCRIPTION)
	5		red (2.5YR 4/6), micaceous, fine to medium grained silty sand
	10		
	15		yellowish-brown (10YR 5/8), micaceous, sandy clay
	20		
	25		yellowish-brown (10YR 5/8), micaceous, fine to medium grained silty sand
	30		
moist ▽	35		yellow (10YR 7/6), micaceous, fine to medium grained silty sand
satu-rated			reddish-brown (2.5YR 5/4), micaceous, fine to medium grained sand
	40		Boring terminated at 40'

STANDARD-PENETRATION (BLOWS PER FOOT)

0 5 10 15 20 25 3

2 inch diameter type II monitoring well set at approximately 40 feet BGS

Sample Interval	PID Reading	Sample Interval	PID Reading
3 - 5'	0 ppm	23 - 25'	1 ppm
8 - 10'	2 ppm	28 - 30'	3 ppm
13 - 15'	1 ppm	33 - 35'	2 ppm
18 -20'	0 ppm	38 - 40'	0 ppm

Sample Interval	Total BTEX	MTBE	Total PAH
8 - 10'	38,258 ppb	30 ppb	7,300 ppb
28 - 30'	11,611 ppb	4,000 ppb	4,000 ppb
33 - 35'	264,900 ppb	800 ppb	14,900 ppb

EMC ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

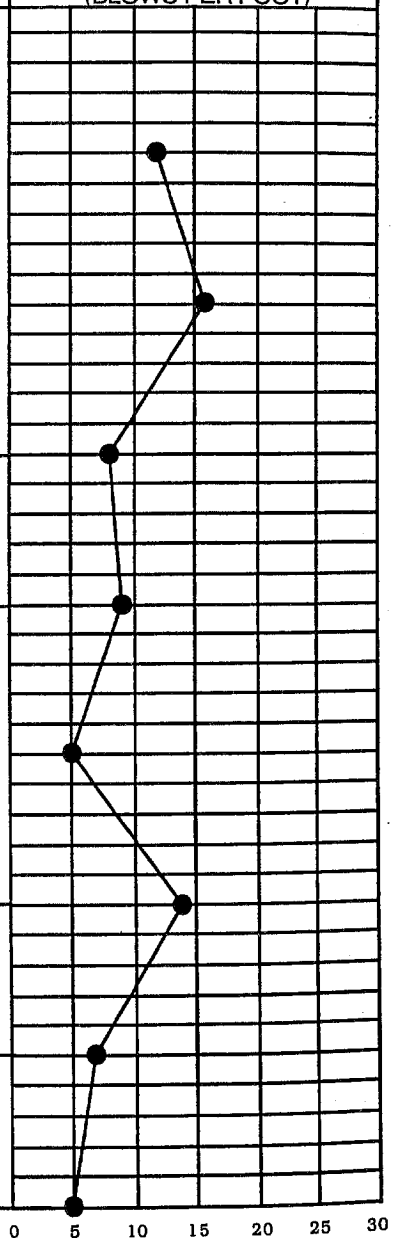
Elevations are in feet and based on a temporary benchmark elevation of 565 feet above mean sea level which was determined by interpolating between contour lines on a USGS 7.5 minute topographic quadrangle (Banks, Alabama).

MW-2

BORING LOG(S) SHEET 1 OF 1 SHEETS	10. SIZE AND TYPE OF BIT 4.25" ID/6.0" OD HSA
1. PROJECT Banks Middle School	11. DATUM FOR ELEVATION SHOWN TBM Elev. of 565 ft. AMSL
2. LOCATION Banks, Alabama	12. MANUFACTUR'S DESIGN OF DRILL CME 75
3. DRILLING AGENCY CTL/CCI	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN (DISTURBED / UNDISTURBED) 8 disturbed
4. HOLE NO. MW-3	14. TOTAL NO. CORE BOXES N/A
5. NAME OF DRILLER Jason Christian	15. ELEVATION GROUNDWATER 531.50 feet AMSL
6. DIRECTION OF HOLE Vertical	16. DATE HOLE 4/29/99
7. THICKNESS OF OVERBURDEN Unknown	17. ELEVATION TOP OF HOLE 564.99 feet AMSL
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING N/A
9. TOTAL DEPTH OF HOLE 40 feet	19. SIGNATURE OF INSPECTOR

W/C	DEPTH (FEET)	SYM	CLASSIFICATION OF MATERIALS (DESCRIPTION)
	5		red (2.5YR 4/6), micaceous, fine to medium grained silty sand
	10		
	15		yellowish-brown (10YR 5/8), micaceous, sandy clay
	20		
	25		yellowish-brown (10YR 5/8), micaceous, fine to medium grained silty sand
	30		yellow (10YR 7/6), micaceous, fine to medium grained silty sand
moist ▽	35		
satu-rated			reddish-brown (2.5YR 5/4), micaceous, fine to medium grained sand
	40		Boring terminated at 40'

2 inch diameter type II monitoring well set at approximately 40 feet BGS



Sample Interval	PID Reading	Sample Interval	PID Reading
3 - 5'	0 ppm	23 - 25'	3 ppm
8 - 10'	2 ppm	28 - 30'	6 ppm
13 - 15'	11 ppm	33 - 35'	9 ppm
18 -20'	11 ppm	38 - 40'	3 ppm

Sample Interval	Total BTEX	MTBE	Total PAH
13 - 15'	655 ppb	766 ppb	1,400 ppb
18 - 20'	1,975 ppb	1,684 ppb	450 ppb
33 - 35'	2,566 ppb	207 ppb	1,600 ppb

ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Elevations are in feet and based on a temporary benchmark elevation of 565 feet above mean sea level which was determined by interpolating between contour lines on a USGS 7.5 minute topographic quadrangle (Banks, Alabama).

MW-3

BORING LOG(S)

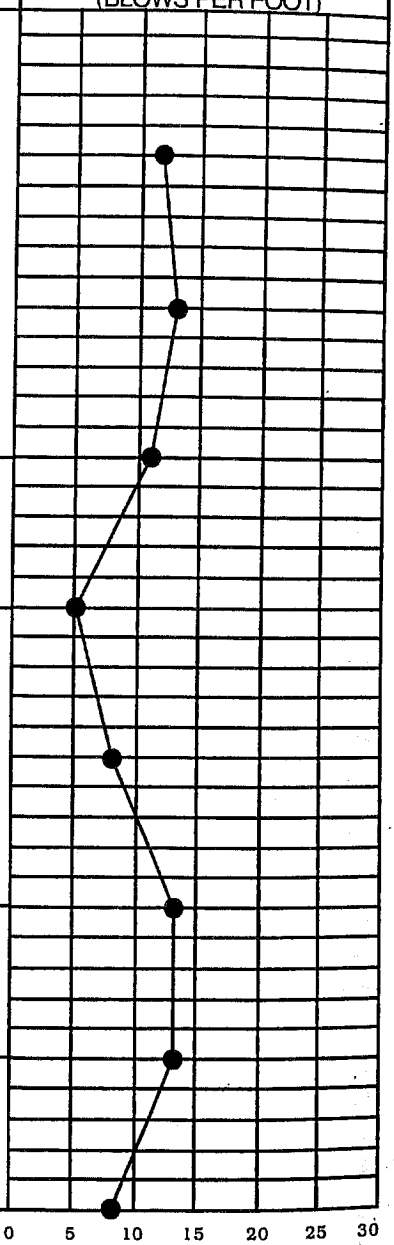
SHEET 1 OF 1 SHEETS

1. PROJECT Banks Middle School	10. SIZE AND TYPE OF BIT 4.25" ID/6.0" OD HSA
2. LOCATION Banks, Alabama	11. DATUM FOR ELEVATION SHOWN TBM Elev. of 565 ft. AMSL
3. DRILLING AGENCY CTL/CCI	12. MANUFACTUR'S DESIGN OF DRILL CME 75
4. HOLE NO. MW-4	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN (DISTURBED / UNDISTURBED) 8 disturbed
5. NAME OF DRILLER Jason Christian	14. TOTAL NO. CORE BOXES N/A
6. DIRECTION OF HOLE Vertical	15. ELEVATION GROUNDWATER 531.24 feet AMSL
7. THICKNESS OF OVERBURDEN Unknown	16. DATE HOLE 4/30/99
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE 564.97 feet AMSL
9. TOTAL DEPTH OF HOLE 40 feet	18. TOTAL CORE RECOVERY FOR BORING N/A
	19. SIGNATURE OF INSPECTOR

W/C	DEPTH (FEET)	SYM	CLASSIFICATION OF MATERIALS (DESCRIPTION)
	0		
	5		red (2.5YR 4/6), micaceous, fine to medium grained silty sand
	10		
	15		yellowish-brown (10YR 5/8), micaceous, sandy clay
	20		
	25		yellowish-brown (10YR 5/8), micaceous, fine to medium grained silty sand
	30		
moist			yellow (10YR 7/6), micaceous, fine to medium grained silty sand
▽	35		
satu-rated			reddish-brown (2.5YR 5/4), micaceous, fine to medium grained sand
	40		Boring terminated at 40'

2 inch diameter type II monitoring well set at approximately 40 feet BGS

STANDARD-PENETRATION (BLOWS PER FOOT)



Sample Interval	PID Reading	Sample Interval	PID Reading
3 - 5'	0 ppm	23 - 25'	13 ppm
8 - 10'	10 ppm	28 - 30'	15 ppm
13 - 15'	8 ppm	33 - 35'	0 ppm
18 -20'	4 ppm	38 - 40'	30 ppm

Sample Interval	Total BTEX	MTBE	Total PAH
23 - 25'	18,565 ppb	5,000 ppb	5,600 ppb
28 - 30'	62,750 ppb	4,800 ppb	8,850 ppb
38 - 40'	5,550 ppb	550 ppb	1,650 ppb

EMC ENVIRONMENTAL-MATERIALS CONSULTANTS, INC.

Elevations are in feet and based on a temporary benchmark elevation of 565 feet above mean sea level which was determined by interpolating between contour lines on a USGS 7.5 minute topographic quadrangle (Banks, Alabama).

MW-4

Quality Assurance / Quality Control Plan

Banks Middle School
Facility ID: 15723-109-013688
UST 99-01-15

Environmental-Materials Consultants, Inc. (EMC) has developed the following standard operating procedures for sampling, preservation, shipment and analytical testing of soil and groundwater samples collected at underground storage tank (UST) sites. All field personnel are expected to follow these procedures to provide uniformity within our organization.

FORMS

UST DAILY REPORTS

A *UST Daily Report* must be completed by EMC's representative(s) when field work is conducted. All samples collected are to be recorded according to our in-house sample numbering system. A narrative of daily activities is to be included on this form. At a minimum this form must include the following information:

1) job name and number,
2) field representative(s) name,
3) date,
4) sample identification number (job #/date/location/identification),
5) sampling time,
6) depth of sample,
7) type of sample container,
8) method of sample preservation,
9) field screening data,
10) narrative of daily events,
11) sketch indicating sample locations with sufficient information to construct a site drawing to scale,
12) weather conditions, and
13) other data pertinent to the investigation and/or corrective action.

CHAIN OF CUSTODY FORMS

When submitting samples to analytical laboratories for analysis, a *Chain of Custody Form* must be completed and submitted along with the samples. At a minimum this form must include the following information:

1) name of person submitting sample(s) including date and time submitted,

2) person receiving sample(s) including date and time received,
3) project name and number,
4) EMC contact personnel and telephone number,
5) name and title of person collecting samples,
6) type of analysis to be performed,
7) type of sample container and method of preservation,
8) total number of samples listed and sample date,
9) list of samples by identification number, including time of sampling,
10) sample matrix (i.e. soil or groundwater),
11) requested turn-around time,
12) name of person returning and receiving samples from laboratory if samples are returned, and
13) other special instructions.

SAMPLE LABELS

Sample Labels are to be filled out and placed on each sample container. At a minimum, these labels must include the following information:

1) sample identification number,
2) sample location,
3) date,
4) time,
5) depth,
6) EMC job number,
7) person(s) collecting samples,
8) sample matrix (i.e. soil or groundwater), and
9) type of analysis to be performed.

SUPPLIES

The following supplies, if necessary, are to be used for soil and/or groundwater sampling:

1) UST daily report forms,
2) chain of custody forms,
3) sample labels,
4) cooler with packing material and frozen ice packs,
5) appropriate sample containers (jars with Teflon lined lids, VOC vials, plastic bottles),
6) appropriate sample collectors (hand auger or polyethylene bailers),
7) decontamination equipment,
8) photoionization detector,
9) electronic water level indicator,
10) fiberglass measuring tape,
11) latex gloves

SAMPLING PROCEDURES

The following procedures will be followed when collecting soil samples:

1) determine sample location,
2) completely fill sample jar with soil,
3) place lid on jar and close tightly assuring a tight seal,
4) complete the sample label and adhere it to the jar,
5) place sample in a cooler with a frozen ice pack,
6) isolate samples inside the cooler with packing material to prevent container breakage,
7) complete daily report with information pertaining to the sample,
8) decontaminate sampling device(s) between sample locations, and
9) make an in-depth sketch of the site and mark the sample locations on the sketch. All measurements are needed to draw the site to scale.

The following procedures will be followed when collecting groundwater samples:

1) determine sample location by boring or existing monitoring well,
2) determine depth to groundwater,
3) lower polyethylene bailer into boring or monitoring well, insuring that it collects the surface water as petroleum floats on or near the surface of the water when present,
4) fill the sample jar completely,
5) place lid on jar and close tightly assuring a tight seal,
6) complete the sample label and adhere it to the sample jar,
7) place sample in a cooler with a frozen ice pack,
8) isolate samples inside the cooler with packing material to prevent container breakage,
9) complete daily report with information pertaining to the sample,
10) decontaminate sampling device(s) between sample locations, and
11) make a sketch of the site and indicate locations of wells or borings.

SHIPPING PROCEDURES

The following procedures will be followed when shipping soil and/or groundwater samples:

1) insure that all lids are tight and labels are securely attached,
2) isolate each sample in a cooler by the use of packing materials,
3) place a frozen ice pack in the cooler with samples for preservation, and
4) complete chain of custody form for all samples being shipped and enclose it in the cooler.

LABORATORY ANALYTICAL PROCEDURES

The following analytical methods will be followed when analyzing soil samples:

BTEX and MTBE:	SW 846 Method 8260/8021B
PAH	SW 846 Method 8270
TPH	418.1
Total Lead	EPA 239.2 Modified for Soils

The following analytical methods will be followed when analyzing groundwater samples:

Total Lead:	EPA Method 239.2
BTEX and MTBE:	SW 846 Method 8260/8021B GC/MS Method SW-8260B
PAH:	SW 846 Method 8270
Naphthalene:	SW 846 Method 8260/8021B

Water samples collected from water supply wells will be analyzed using EPA short form method 524.2.

SITE HEALTH AND SAFETY PLAN

Policy Statement

It is the policy of Environmental-Materials Consultants, Inc. (EMC) that its employees will work in a safe environment.

Contractors

In various phases of corrective action implementation, there may be contractors on site. On AUST Trust Fund jobs the contractors usually work for EMC. The contractors are responsible for the health and safety of their employees. If an EMC employee should observe an eminently dangerous situation, he will immediately take actions to prevent or reduce human injury or property damage. If an EMC employee should observe a potentially dangerous situation caused by contractor personnel he will advise the contractor's supervisor and note the situation in his daily report. If the potentially dangerous situation is not corrected within a reasonable amount of time, the EMC employee will notify and take direction from his supervisor.

Workplan

When dealing with an AUST Trust Fund job, EMC provides the following services which could require an EMC employee to work in a hazardous environment.

1.) Collection of samples of soil, water, and vapors that are suspected to be contaminated with petroleum products.
2.) Analysis of samples to determine total petroleum hydrocarbon content.
3.) Observation of excavation and drilling operations.
4.) Installation and operation of remediation systems.

Exclusion Zone

An exclusion zone will be determined around any work that is conducted. For drilling and excavation operations, the exclusion zone will have a radius of no less than 25 feet. The exclusion zone should be defined with some sort of barrier to warn or exclude the public. The radius of the exclusion zone will be reduced for well and system sampling. There will be no eating or tobacco within the exclusion zone. Sources of sparks are not permitted in the exclusion zone.

Petroleum Products

There are many health and safety hazards associated with petroleum products. The most immediate dangers are explosion and fire. Petroleum vapors are heavier than air and will collect in excavations and other low areas displacing the air and creating an oxygen deficient atmosphere. Entering an oxygen deficient atmosphere can cause death.

Fire and Explosion

In order to prevent situations related to fire and explosion, each worker will make sure that no spark sources (i.e. lighters, matches, unapproved flashlights, etc.) are brought into the exclusion zone. Wiring and motors utilized by the recovery and treatment systems will be inspected and will adhere to the requirements for fire prevention. All electrical equipment will be intrinsically safe and all vehicles used on site will be equipped with spark arrestors. No unauthorized personnel will be allowed on site.

There will be a fire extinguisher and first aid kit readily available to on site personnel.

Exposure

Petroleum products contain benzene, toluene, ethylbenzene, xylenes, and methyl tertiary butyl ether. In years past they also contained lead. These chemicals are toxic to humans when they are inhaled, ingested, or absorbed through the skin. Exposure to the petroleum hydrocarbons present in gasoline and diesel fuel could result in lung injury, eye and skin irritation, CNS depression, kidney, liver, and blood disorders.

Before entering an area where petroleum vapors might accumulate EMC personnel will test to determine the petroleum vapor concentration as a percent of the lower explosive limit (LEL) and the oxygen concentration. EMC personnel will not enter an area where the petroleum vapor concentration is above 50% of the LEL or where the oxygen concentration is below 20%.

When collecting or handling samples of materials that may contain petroleum products EMC personnel will wear disposable latex gloves and appropriate clothing and eye protection to prevent accidental contact with eyes or skin.

Benzene has the lowest permissible exposure limit (PEL) of the petroleum constituents. OSHA has established a PEL of 1 ppm for benzene and a short-term exposure limit (STEL) of 5 ppm. EMC employees will wear proper respiratory protection when entering an area where there is reason to suspect that exposure to benzene may exceed these limits.

Utilities

Utility lines, both above and below land surface, pose another physical hazard for on site personnel during drilling and excavation operations. The drill crew chief will maintain a safe distance between the drill rig or mast and any overhead utility lines at all times. OSHA requires a clearance of no less than 10 feet for lines of 50 Kv or less. Higher voltage lines require a greater clearance. Drillers and equipment operators should maintain as great a distance as practicable between equipment and utility lines. Utility lines will be located before startup and possibly affected utilities will be contacted no less than 48 hours before excavation or drilling operations commence. No drilling or excavation will begin before all utilities have been located.

Drilling and Excavation

While drilling or excavating, all personnel within the exclusion zone will maintain eye contact with the equipment operator. All personnel will be required to wear hard hats, safety glasses, and protective shoes or boots. All personnel must be familiar with and aware of the equipment around them and any hazards posed by utility lines. All personnel must be familiar with unsafe weather conditions and with precautions to take should threatening weather conditions (i.e. lightning) present a hazard. All personnel working on site will be authorized to do so, no unauthorized personnel will be allowed on site.

Groundwater Sampling

Sampling personnel will be permitted to wear normal field clothes and care will be taken to avoid contact with any possibly contaminated substance. Again, no eating, tobacco, or sources of sparks will be allowed in the exclusion zone.

Personal Hygiene

All on site personnel will be prohibited from drinking alcohol during the workday and no tobacco will be allowed in the exclusion area. All personnel are encouraged to wash hands thoroughly before eating, and eating is to be done away from the work site.

Training

EMC personnel that work with petroleum products will as a minimum receive training covering the following topics.

Definition and uses of petroleum products
Hazards and health effects of exposure to petroleum products
Safety procedures and personal protective equipment
Respiratory protection
Excavation Safety
State and Federal regulations
General job site procedures

Injury

In case of injury, the following procedure will be followed. All on site personnel are to be familiar with this procedure.

-Stop work immediately

-Get medical attention to the victim immediately

-Depending on the severity of the injury, contact the victim's personal physician

-Notify victim's office and EMC

All witnesses will provide written accounts of all circumstances surrounding the injury such as, but not limited to, weather conditions, what victim was doing when injury occurred, and what other personnel were doing when injury occurred.

Emergency Contacts

The following is a list of emergency numbers that will be readily available to any on site personnel:

Police:	911
Fire:	911
Ambulance:	911
Nearest Hospital:	Troy Regional Medical Center (334) 670-5000
Poison Control:	1 (800) 462-2100 or 1 (800) 292-6678

Water:	Water Works Board	Pike County Water Authority (334) 566-1933
Gas:	Alabama Gas Company	1 (334) 263-2341
Electric:	Alabama Power Comp.	1 (334) 265-5611
Alabama One-Call Line Locator Center		1 (800) 292-8525

Regulatory Standards

EMC maintains a copy of OSHA's Construction Industry Standards and various US EPA standards. These standards are available to employees and the company encourages employees to review and become familiar with them.