

1/2 - PA

METHODOLOGY FOR ANALYTICAL, AND ~~CONTAINER~~ MA
CONTAINER, AND PRESERVATIVES USED DURING
THE GULF STATE CREOSOTE SI - PHASE II
INVESTIGATION

ANALYSIS	CONTAINER	PRESERVATIVES
Water Samples:		
Water Samples	2 - 40 ml AMBER BOTTLES	HCl - 4 DROPS TO PH < 2
- VOCs	2 - 1 LITER AMBER BOTTLE	-
- SEMI VOCs	1 - 1 LITER AMBER BOTTLE	-
- PESTICIDES/PCBS	1 - 1 LITER HIGH DENSITY POLYETHYLENE (HDP) BOTTLE	HNO ₃ - 50% HNO ₃ TO PH < 2
- METALS	1 - 1 LITER HDP BOTTLE	NaOH TO PH > 12
- CYANIDES		

SOIL/SEDIMENT SAMPLES

- VOCs	1 - 120 ml VOC BOTTLE	-
- SEMI VOC	1 - 250 ml AMBER BOTTLE	-
- PESTICIDES/PCBS	1 - 250 ml AMBER BOTTLE	-
- METALS/CYANIDE	1 - 250 ml AMBER BOTTLE	-

NOTES TAKEN BY: MICHAEL JARX / (initials) ~~JARX~~
MS DEQ
JACKSON, MS

10/15/91 - TUESDAY

- GULF STATES CREOSOTE SITE
MSD985967199
HATTIESBURG, MS
LOCATION: NEAR INTERSECTION OF HWY 49 & HWY 11
- 9:00 A.M. - CONTACTED HATTIESBURG PUBLIC WATER WORKS DEPARTMENT (601) 545-4530
- INFORMED THE OFFICE THAT THE OPC WANTED TO SAMPLE THE PUBLIC WELL LOCATED OFF OF HALL STREET APPROXIMATELY 1 1/2 - 2 MILES EAST OF THE SITE (THE OPC WAS INVESTIGATING). AN APPOINTMENT WAS SET UP WITH A MR. LEROY SCOTT TO SAMPLE THE WELL. IT WAS NOTED THAT THE WATER DEPT. WAS LOCATED ON HALL STREET IN WHICH THERE WERE FOUR (+) WATER WELLS.
- 9:15 A.M. - CONTACTED A MR. GEO VARNADO IN REGARD TO A PRIVATE WELL LISTED ON THE U.S.G.S WATER WELLS PRINTOUT IN PROXIMITY TO THE SITE (< 1 MILE) - (601) 264-6963 - VARNADO, OWNER, WELL # Dφ63. MR VARNADO SAID THAT THE WELL WAS ABANDONED MORE THAN 15 YEARS AGO
- 9:30 A.M. - TRIED TO CONTACT A REV. BARRY BELL IN REGARD TO A PRIVATE WELL LISTED ON THE U.S.G.S. WATER WELLS PRINTOUT IN PROXIMITY TO THE SITE (< 1 MILE) - 601-544-2611 WAS UNSUCCESSFUL WELL #φ36. WATER DEPT. INDICATED THAT THIS WELL WAS PROBABLY

- 2:30 P.M. - MEET WITH LEROY SCOTT OF THE WATER DEPT.
- 2:50 P.M. - SAMPLED WELL #1 (SHALLOWEST OF THE FOUR WELLS) WHICH MR. SCOTT INDICATED WAS APPROXIMATELY 400 FEET DEEP (#Dφφφ - U.S.G.S PRINTOUT) MR. SCOTT ALSO INFORMED ME THAT THE WELL WAS RUNNING THAT MORNING. I RAN THE PUMP ~~15~~ 10 MINUTES PRIOR TO SAMPLING

SAMPLE CODE #
GS-PW-φ1

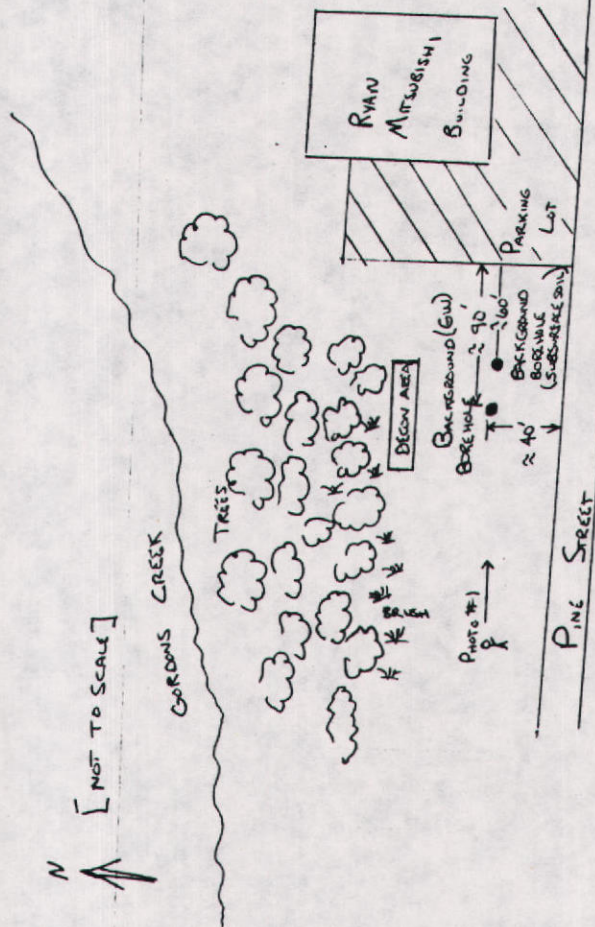
- 2 VOCs (PRES. HCl) - 40ml AMBER GLASS BOTTLES
- 2 SEMI VOCs - 1 LITER GLASS AMBER BOTTLES
- 1 PESTICIDE/PCB - 1 LITER AMBER GLASS BOTTLES
- 1 METALS (PRES. HNO₃) - 1 LITER HDP BOTTLE
- 1 CYANIDES (PRES. NaOH) - 1 LITER HDP BOTTLE

- 3:30 P.M. - MEET WITH DAVID HAM OF THE CIVIL DEFENSE OFFICE IN REGARD TO A PRIVATE WELL LISTED ON THE U.S.G.S (#D1φφ) WATER WELLS PRINTOUT IN PROXIMITY TO THE SITE (<1 MILE). MR. HAM SAID THAT THERE WAS NOTHING AT THAT LOCATION (CIVIL DEFENSE OFFICE DID NOT OPERATE OUT OF THAT AREA FOR A NUMBER OF YEARS). ~~THEY HAD~~ ^{MR} HE HAD NO INDICATION OF HOW LONG THE WELL HAD BEEN ABANDONED.

- 4:45 P.M. - TRAVELED TO THE SITE TO RECON THE AREA ~~FOR~~ ^{AND} BY VISUALLY OBSERVING ^{VERIFYING} AREAS INTENDED TO BE SAMPLED DURING THE INVESTIGATION
- 5:45 P.M. - LEFT THE SITE TO CHECK-IN AT THE HOTEL

WED. - 10/16/91

- 7:40 a.m. - ARRIVED ON SITE - CONDITIONS: SUNNY, COOL $\approx 50^{\circ}\text{F}$
- 8:00 a.m. - VERIFIED AREA FOR BACKGROUND TEMPORARY WELL - WEST SIDE OF RYAN MITSUBISHI & NORTH SIDE OF PINE STREET
- 8:15 a.m. - BEGAN MOBILIZATION AROUND BACKGROUND LOCATION (DRILL RIG/CREW, EQUIPMENT, ETC.)
- PERSONNEL PRESENT: MICHAEL SLACK (DEQ), MARK WATERS (DEQ), KEN WHITTEN (DEQ), CURTIS STOVER (GEOLOGY), ARCHIE MCKENZIE (GEOLOGY DEPT.), AND SCOTT MIXON (GEOLOGY DEPT.)



BACKGROUND BOREHOLE (GW) - SAMPLE CODE - GS-TW-01 (GROUNDWATER SAMPLE)
 BACKGROUND BOREHOLE (SUBSURFACE SOIL) - SAMPLE CODE - GS-SB-01 (SUBSURFACE SOIL SAMPLE)

- 8:30 a.m. - SPOKE WITH ANDY MOORES OF RYAN MOTORS AND INFORMED ~~MARK~~ ^{WATERS} MA. ~~THE WORK~~ MA INFORMED/CONFIRMED THAT WE WOULD BE WORKING IN THE AREA FOR THE NEXT COUPLE OF DAYS
- PHOTOGRAPHED (PHOTO #1) LOCATION OF BACKGROUND TEMPORARY WELL (LOOKING EAST, PARALLEL TO PINE STREET (NORTH SIDE), WITH RYAN MITSUBISHI IN THE BACKGROUND)
- 8:50 a.m. - BEGAN MA. COMMENCED DRILLING BACKGROUND ~~400~~ HOLE (HNU-CALIBRATED - 9.8 SPAN)
- 0-1' - SANDY MA SILTY-SAND - BROWN (LIGHT) (HNU - NU) PHOTO #2
- 1'-2 1/2' - BLACK-CLAY, SANDY-SILTY-CLAY (READING)
- 2 1/2'-3 1/2' - TANNISH/ORANGE SANDY SILT - SOME CLAY
- 3 1/2'-5' - SAME AS 2 1/2'-3 1/2'
- 5'-7' - MORE OF THE SAME
- 7'-7 1/2' - COLOR CHANGE (SAME CHARACTERISTICS) MORE TAN IN NATURE
- 7 1/2'-9' - FINE SANDY-CLAYEY-SILT (COLOR-BUFF)
- 9'-10' - FINE SANDY-CLAYEY-SILT - SOME CLAY (COLOR-BUFF/TAN)
- 10'-11' - COLOR-ORANGISH/TAN, SANDY TO SILTY CLAY
- 11'-12 1/2' - MORE OF THE SAME
- 12-12 1/2' - MORE OF THE SAME WITH SOME BLACK ORGANIC MATERIAL, POSSIBLY LIGNITE
- 12 1/2'-15 1/2' - ~~MA~~ MORE OF THE SAME, MORE OF A SILTY/CLAY, STILL SOME LIGNITE PRESENT
- 15'-16' - MORE OF THE SAME
- 16'-17 1/2' - SOFT PLIABLE, DAMP TANNISH SILTY CLAY - MORE GRAY IN COLOR
- 17 1/2'-20' - ~~NEAR CLAY~~ (ESTIMATED PERMEABILITY 10^{-5} TO 10^{-6} cm/s) ~~MA~~ MORE OF SAME
- 20'-22 1/2' - MORE OF THE SAME (PHOTO #3)
- 22 1/2'-25' - MORE OF THE SAME, HIGHER MOISTURE CONTENT
- 25'-27 1/2' - MORE OF THE SAME, SAME MOISTURE CONTENT
- 27 1/2'-29 1/2' - MORE OF THE SAME, SAME MOISTURE CONTENT
- 29 1/2'-30' - PHOTO #4, 5 - SATURATED CLAY GRAYISH/TAN/WHITE (GROUNDWATER)

11:00 AM - COMMENCED SETTING UP EQUIPMENT
TO TRY TO COLLECT ~~WATER~~ GROUNDWATER
SAMPLE
Mill & J

~ 11:00 AM - Jim Hardage - ARRIVED (MS DEQ)

~ 11:00 Mr. Fairchild w/ Industrial Park stopped
by for a few minutes. He's affiliated
w/ Mr. Snowden, who I contacted
Mon. 10/14/91 by phone. Jim Hardage

11:45 AM - DROPPED CASING INSIDE HOLLOW STEM
AUGERS

- WATER LEVEL WAS RECORDED AT 21' BLS

- BORE HOLE WAS TERMINATED AT 30' BLS

11:50 AM - SAMPLED - ~~GS-TW~~ BOREHOLE - GS-TW-01
(SEE PAGE 2 FOR TYPES OF CONTAINERS USED,
SIZE, AND QUANTITY) - ALSO SEE PAGE 1/2
GROUNDWATER SAMPLE - SAMPLE CODE GS-TW-01

12:00 PM - ~~STARTED~~ COMMENCED CLOSING OF
TEMPORARY WELL - PULLED CASING OUT OF
~~PLUGGED HOLE~~ BORE HOLE
USING BENTONITE SLURRY.

12:35 PM - BROKE FOR LUNCH

1:45 PM - ARRIVED BACK AT BACKGROUND LOCATION
~~AND~~ COMMENCED CLOSING OF

WELL. DECONED EQUIPMENT AT THE
DESIGNATED AREA ON PAGE 4 (BACKFILLED ^{BOREHOLE} WITH BENTONITE
& BENTONITE SLURRY)

3:15 PM - MOVED APPROXIMATELY 25'-30' EAST
OF GS-TW-01 TO COMMENCE BACKGROUND
SUBSURFACE SOIL BORE HOLE (SAMPLE CODE - GSSB-01)

- SEE SKETCH ON PAGE 4,

3:30 PM - COMMENCED ^{DRILLING} BOREHOLE DESIGNATED - GS-SB-01

0-1' - SILTY-SAND (LIGHT BROWN)

1'-2 1/2' - BLACK-CLAY, SANDY-SILTY-CLAY

2 1/2'-5' - TANNISH/ORANGE SANDY SILT - SOME CLAY

5'-7' - TANNISH/ORANGE SANDY SILT - A LITTLE CLAY

3:50 P.M. - HAND AUGERED APPROXIMATELY
1' - AND COLLECTED SAMPLE

GS-SB-01 (28' BLS) - SEE PAGE # 1/2

4:00 P.M. - BACKFILLED BOREHOLE (CONTINUED DECON)

4:45 P.M. - LOCATED BACKGROUND SEDIMENT LOCATION
IN GORDONS CREEK ADJACENT TO THE
TRAILER PARK & K MART (GS-SD-01)

5:00 P.M. - COLLECTED SAMPLE GS-SD-01 (SEE PAGE # 1/2)
FROM GORDONS CREEK

PHOTOS & NEW ROLL OF FILM

PHOTO #1 - LOOKING EAST/NORTHEAST

AT GORDONS CREEK AND SAMPLING POINT (ALSO
KEN SMALLE
WHITTEN)

PHOTO #2 - LOOKING WEST/SOUTHWEST
FROM SAMPLING LOCATION (LEFT: TRAILER
PARK, RIGHT: K MART, BACKGROUND:
HWY 49)

5:15 P.M. - LOCATED DOWNGRADEMENT SEDIMENT
SAMPLE LOCATION APPROXIMATELY (IN GORDONS CREEK)
60' EAST/NORTHEAST OF EASTERN MOST
DITCH FROM TRAILER PARK (I.E., ACROSS
FROM PRODUCERS MOTEL)

5:20 P.M. - COLLECTED SAMPLE GS-SD-02 -
DOWNGRADEMENT SEDIMENT SAMPLE (SEE PAGE 1/2)

PHOTO #3 - NEAR SAMPLING POINT, VISUAL
EVIDENCE OF CREOSOTE LEACHING INTO THE CREEK

PHOTO #4 - SAMPLE COLLECTION POINT
GS-SD-02 - LOOKING EAST/NORTHEAST
AT GORDONS CREEK AND SAMPLER KEN
WHITTEN

PHOTO #5 - TAKEN AFTER DISTURBANCE
OF GORDONS CREEK SEDIMENT
NEARBY. - RAINBOW SHEEN AND LEACHATE

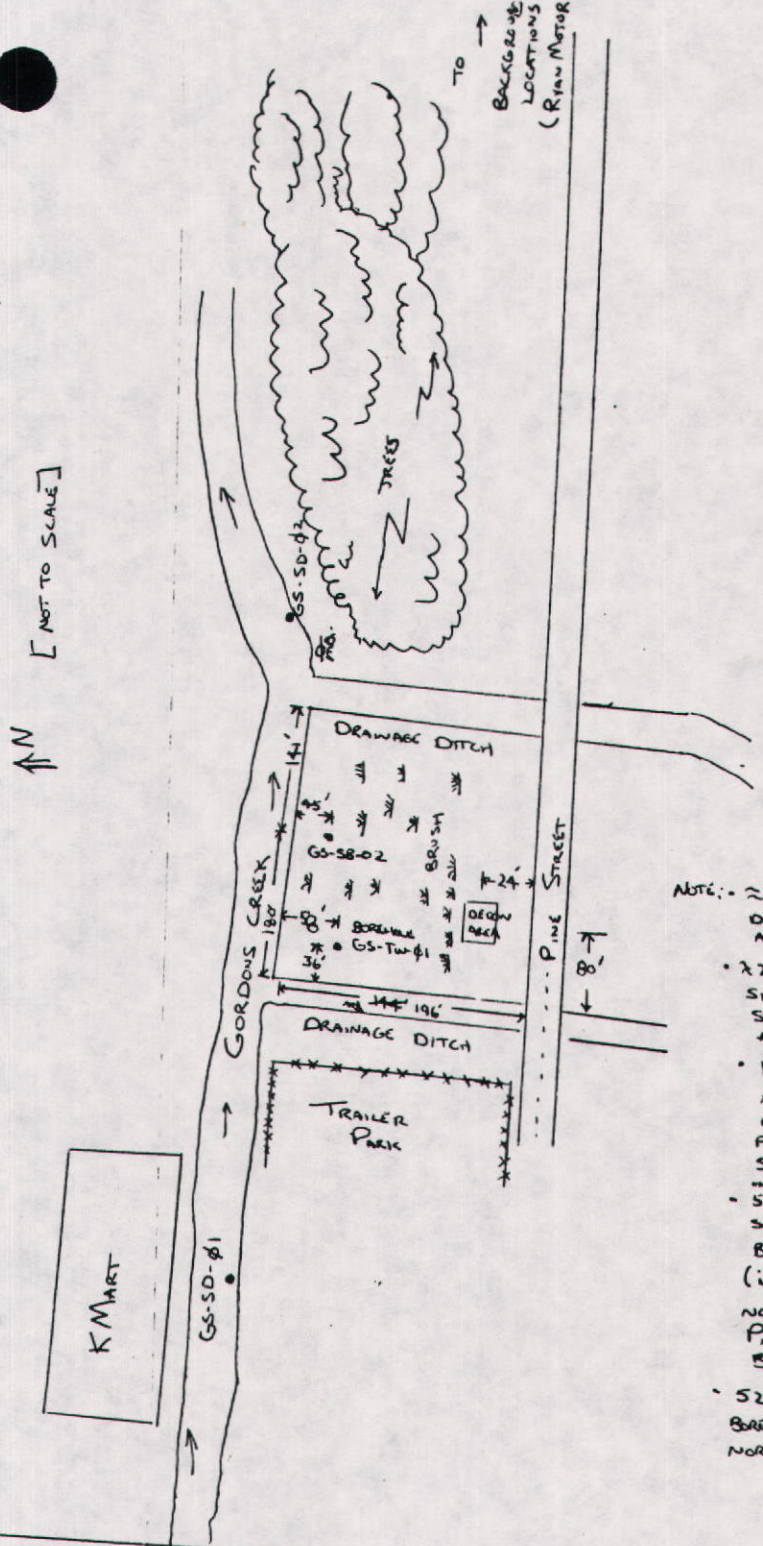
6:00 P.M. - LOADED UP EQUIPMENT AND
LEFT THE SITE

Mill & J

- 7:30 a.m. - ARRIVED ON-SITE (CONDITIONS: SUNNY, COOL, 48°F)
- LOCATED LOCATION FOR INSTALLATION OF TEMPORARY WELL GS-TW-02; BETWEEN THE TWO DITCHES ~~AND~~ THAT CONVERGE WITH GORDON'S CREEK. NEAR THE (INDUSTRIAL PARK) TRAILER PARK - SEE PAGE B.
- LOCATED DECON STATION - SEE PAGE B
- HW₀ CALIBRATED - SPAN - 9:00
- 8:45 a.m.: COMMENCED BOREHOLE DRILLING (GS-TW-02)

- 0-1 1/2' - DARK BROWN - SILTY SAND
- 1 1/2'-2 1/2' - LIGHT BROWN - SILTY SAND
- 2 1/2'-5' - MORE OF THE SAME
- 5'-7' - ~~LIGHT BROWN~~ ^{MA} - LESS SAND MORE CLAY
SLIGHTLY LIGHTER IN COLOR THAN PREVIOUS
LIGHT BROWN (MORE TANNISH)
- 7'-7 1/2' - LIGHTER TAN - CLAYEY SAND
HIGH MOISTURE CONTENT
- 7 1/2'-10' - SANDY CLAY - ORANGISH/TAN IN COLOR
HIGH MOISTURE CONTENT
- 10'-12 1/2' - ^{MA} SLIGHTLY SILTY CLAY - ~~TANNISH~~ ¹¹⁰ COLOR - GRAYISH TAN (HIGH MOISTURE CONTENT)
- 12'-12 1/2' - MORE GRAY IN COLOR - SLIGHTLY ^{MA} SILTY CLAY
PROBABLY AT THE BOTTOM OF THE CREEK ~~BEHIND~~ BED
- 12 1/2'-15' - MORE OF THE SAME, HOWEVER EXHIBITS
MORE PLASTICITY, STILL HAS HIGH MOISTURE CONTENT
- 15'-17 1/2' - MORE OF THE SAME
- 17 1/2'-20' - MORE OF THE SAME
- 20'-22 1/2' - NO CUTTINGS - AUGER WENT DOWN
WITH EASE - PROBABLY SAND
- 22 1/2'-25' - MORE OF THE SAME - NO CUTTINGS - AUGER WENT DOWN
WITH EASE - STILL PROBABLY SAND
- AT 25' - DROPPED WATER LEVEL INDICATOR DOWN
BORE HOLE - TIP WAS VERY WET
GRAYISH/TAN/WHITE (GROUNDWATER)
- DECIDED TO DRAP CASING INSIDE
THE HOLLOW STEM AUGER

PHOTO #6 ^{#6} - BOREHOLE LOCATION - LOOKING EAST/NORTHEAST
PHOTO #7 ^{#7} - LOOKING NORTH - AT CONVERGENCE OF WESTERN MOST DITCH AND GORDON'S CREEK -



NOTE: - 280' FROM DITCH TO DECON AREA (EAST SIDE OF DITCH)
 • 224' FROM NORTH SIDE OF PINE STREET DECON AREA
 • 196' FROM NORTH FENCELINE OF TRAILER PARK TO NORTH SIDE OF PINE ST.
 • 58' FROM SOUTH SIDE OF CREEK BANK TO BOREHOLE (i.e., 141' FROM NORTH SIDE OF PINE STREET TO BOREHOLE)
 • 52' FROM BOREHOLE TO NORTH FENCE LINE

- 10:05 A.M. - SAMPLED BOREHOLE GS-TW-φ2 (GROUNDWATER)
PHOTO #8 (SEE PAGE 1/2) - WATER LEVEL @ 21' (BLS)
- 10:15 A.M. - BEGAN CLOSURE OF WELL
- 11:00 A.M. - LOCATED LOCATION FOR ON-SITE
SUBSURFACE SOIL (SEE PAGE 9)
- 11:15 A.M. - COMMENCED BORING WITH LITTLE
BEAVER
0' - 1 1/2' - LIGHT-BROWN SILTY-SAND
1 1/2' - 3' - DARK-BROWN SILTY-SAND
3' - 6' - DARK-BROWN - MORE CLAY PRESENT
AT 6' - HNU READ 3 UNITS
DARK/CREOSOTE SOIL
~~SMELL~~ FAINT CREOSOTE SMELL PRESENT
- PHOTO #~~8~~⁹ - GS-SB-φ2 BOREHOLE
DARK-SOIL (CREOSOTE SMELL)
11:30 A.M. - SAMPLE COLLECTED - PHOTO #~~9~~¹⁰ - VOC SAME (GS-SB-φ2)
6 1/2' - 7' - HAND AUGURED ~~TO~~^{TO} ~~DEPTH~~^{DEPTH} SAMPLE
WAS COLLECTED (6 1/2' TO 7')
- BACKFILLED HOLE WITH SEMENTITE POWDER
AND CUTTINGS.
- 12:00 P.M. - BROKE FOR LUNCH
- 12:45 P.M. - ARRIVED ON-SITE
COMMENCED BEGINNING ~~OF~~ DECON
PHOTO #11 - STANDING BETWEEN THE TWO
DITCHES ON THE NORTH SIDE
OF PINE STREET LOOKING
EAST/NORTHEAST
- 2:45 P.M. - LEFT SITE FOR JACKSON, MS