N61165.AR.005023
CNC CHARLESTON
5090.3a

INVESTIGATION OF UNDERGROUND CONTAMINATION AT CHARLESTON NAVAL SHIPYARD BUILDING 1279 CNC CHARLESTON SC

08/01/1992

LANDREC INC

Investigation of Underground Contamination

Charleston Naval Shipyard -- Building 1279

North Charleston, South Carolina

For

Landmark Construction Company

August 1992

LandRec, Inc.

Post Office Box 50528 - Columbia, S.C. 29250-0528
Office (803) 254-1545 Fax 779-8538

LandRec, Inc.

Real Estate Reclamation

P.O. Box 50528
Columbia, S.C. 29250-0528
(803) 254-1545
FAX (803) 779-8538

August 26, 1992

Mr. Rick Mixson
Landmark Construction
3275 Associate Drive
North Charleston, SC 29418

Subject: Tank Removal
Charleston Naval Shipyard
Building 1279

Dear Mr. Mixson:

On August 18 and 19 LandRec was on site at the Naval Shipyard to identify and stockpile soils contaminated by leaking underground storage tanks. The concrete and crushed rock overburden was removed from the tank area and disposed of at an approved landfill. When the tanks were removed, it was discovered that the size of the tanks varied from what had been anticipated. Instead of two 2,500 gallon and one 3,000 gallon steel tanks, we found one 2,500 gallon, one 3,000 gallon and one 3,500 gallon tanks. All three tanks had contained gasoline. All soils over the tank area were screened with a Foxboro 128 hydrogen flame OVA and found to be extremely contaminated. See Attachment A for the OVA logs. The soils were stockpiled between buildings 1199 and 1279 on a 6 mil waterproof membrane. Soils between the tanks were also highly contaminated and were stockpiled. All three tanks were excavated on Tuesday. Two hundred fifty (250) gallons of gasoline contaminated water were pumped from the tank system and disposed of by AAA Petroleum Tank Service of Mt. Pleasant. This company also disposed of the three steel tanks. A copy of the disposal manifest for the tank contents is enclosed as Attachment B and the tank disposal certificate is included as Attachment C. Under each tank was a 12" concrete ballast which was removed and disposed of at the landfill.

The excavation was divided into quadrants as shown on the site layout plan in Attachment D. Soils were screened with the OVA in quadrant 1 until the meter reading dropped to an insignificant level at 10.5 feet. A clearance sample was taken by General Engineering Company and the quadrant was backfilled with clean material to prevent groundwater infiltration. Screening, excavation, stockpiling, sampling and backfilling then proceeded to quadrants 2, 3 and 4 in sequence. The excavation measured approximately 43' x 43' x 10.5'.

When the excavation was finished, composite samples were taken from the stockpile and sent to a laboratory for analysis (SCDHEC Lab ID # 40111). The stockpile was covered with a 6 mil waterproof membrane and bermed with sand as shown in the diagram in Attachment E. The stockpile measures approximately 45' x 45' x 9' and contains approximately 675 cubic yards of soil.

When the results of the laboratory analysis were received, all samples tested very hot. Eight of the ten samples had TPH values ranging from 329 to 6,750 ppm. The two samples whose TPH values were below detectable levels had extremely high BTEX components (39.02 and 70.66 ppm). All sample results indicate the need for soil treatment. The laboratory analysis sheets are enclosed as Attachment F.

LandRec appreciates the opportunity of working with you on this project and looks forward to doing so again.

Sincerely,

Paul A. Calvo

Paul A. Calvo
President

Attachments

file: report\blg1279.cha

BORING LOG

JOB:	Charleston Shipyard
LOCATION:	Bldg. 1279
DATE:	8/18/92
BY:	Paul Calvo

Location	Time	Depth Ft	OVA (ppm)	Soil Color/Type	Remark
XG	9:35	1	1000+	fine grain dark brown sand	petro smell
XE	9:38	1	1000+	"	"
XD	9:40	1	1000+	"	"
VG	9:42	1	465	"	"
VE	9:43	1	440	"	"
VD	9:45	1	950	"	"
TG	9:50	1	1000+	"	"
TE	9:55	1	1000+	"	"
TD	10:00	1	1000+	"	"
RG	10:05	1	1000+	fine grain black sand	"
RE	10:10	1	1000+	"	"
RD	10:12	1	1000+	"	"
XF	11:30	2.5	1000+	fine grain gray sand	"
XG	11:40	5	1000+	"	"
XF	11:50	6	1000+	"	"
RG	1:40	4	1000+	fine grain black sand	"
RF	1:55	6	950+	fine grain brown sand	"

BORING LOG

JOB:	Charleston Shipyard
LOCATION:	Bldg. 1279
DATE:	8/19/92
BY:	Paul Calvo

Location	Time	Depth Ft	OVA (ppm)	Soil Color/Type	Remark
TI	7:00	2	1000+	fine grain brown sand	petro smell
TI	7:10	3	1000+	"	"
TI	7:15	5	1000+	fine grain black sand	"
SH	7:40	6	1000+	fine grain green sand	"
RH	7:45	6	720	fine grain grey sand	"
GS	8:03	7	1000+	fine grain gray sand	"
HS	8:20	6	1000+	fine grain gray sand	petro smell
SI	10:15	6	600	fine grain gray sand	petro smell
RI	10:22	8	820	"	"
RI				directed contractor to clean to tan sand thru backfill	
RI	10:28	9	14	fine grain orange tan sand	no odor
SH	10:30			Gen Engr Labs collected clearance sample. Contractor backfilling RTGI.	
DR	10:45	5	1000+	fine grain gray sand	petro smell
DR	10:55	6	1000+	fine grain black sand	"
DR	11:05	7	1000+	fine grain tan/gray sand	"

BORING LOG

JOB:	Charleston Shipyard
LOCATION:	Bldg. 1279
DATE:	8/16/92
BY:	Paul Calvo

Location	Time	Depth Ft	OVA (ppm)	Soil Color/Type	Remark
SE	11:15	6	1000+	fine grain gray sand	petro smell
RO	11:17	2	1000+	fine grain gray/tan sand	"
SE				Gen Engr Labs takes clearance sample. Contractor backfills RTCG.	
SE	11:20	7	550	fine grain gray sand	petro smell
SE	11:25	8	350	"	"
SE	11:30	8.5	120	fine grain gray/tan sand	"
SE	11:35	10.5	7	fine grain tan sand	no odor
GV	1:25	7	1000+	fine grain black sand	"
GV	1:45	9	24	fine grain gray sand	no odor
GV	1:48	10	8	Gen Engr Labs took clearance sample. Contractor backfilling TZCG. (tan sand)	no odor
stockpile					Sample
A	2:30	3-5	1000+	fine grain black sand	1
B	2:42	3-5	1000+	"	2
C	2:58	3-5	1000+	"	3
D	3:10	3-5	1000+	"	4
E	3:22	3-5	1000+	fine grain gray/black sand	5
F	3:33	3-5	1000+	"	6
G	3:42	3-5	1000+	"	7
H	3:50	3-5	1000+	"	8
I	3:58	3-5	1000+	fine grain gray sand	9
J	4:06	3-5	1000+	fine grain black sand	10

BORING LOG

JOB:	Charleston Shipyard
LOCATION:	Bldg. 1279
DATE:	8/19/92
BY:	Paul Calvo

Location	Time	Depth Ft	OVA (ppm)	Soil Color/Type	Remark
GW	4:15	5	1000+	fine grain black sand	petro smell
HX	4:18	4	1000+	"	"
HU	4:20	3	1000+	fine grain green/gray sand	"
HU	4:25	5	1000+	"	"
HU	4:30	7	1000+	fine grain gray/black sand	"
HU	4:33	9	875	fine grain green/tan sand	"
HU	4:40	10	60	fine grain tan sand	no odor
	5:00			Contractor completes backfill operation in grid TZGI.	
	5:30			Covers stockpiled soils with waterproof membrane.	

Foxboro Model 128 Detector
Hydrogen Flame Organic Vapor Meter (OVA)

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
SOLID AND HAZARDOUS WASTE MANAGEMENT DIVISION
2600 BULL STREET, COLUMBIA, SC 29201
Phone: (803) 758-5681

☒ WASTE OIL MANIFEST
OR
☐ AUTOMOTIVE BATTERY MANIFEST

MANIFEST DOCUMENT NUMBER
23536

A.

Name	I.D. Code	Address	Phone Number Area Code and Number	Date Shipped or Accepted
(1) Transporter No. 1 AAA PTS, Inc	SCD 9991279449	PO Box 92 Mt Pleasant, SC 29465	803-884-7742	92 / 08 / 20 (year / month / day)
(2) Transporter No. 2				/ / (year / month / day)
(3) TSDF				/ / (year / month / day)

B.

(1) Containers No.	Type	(2) DOT Proper Shipping Name/ Hazard Class/DOT I.D. Number	(3) Total Quantity	(4) Waste Collected from Name and Address	(5) Signature of person from whom waste is collected or their authorized Agent. Signature	Print Name
2	55's	NOS		NSC Bldg 1279	Paul A. Calvo	Paul A. Calvo
3	UST	gas/water	250	Charleston Navy Base, SC		

C. Emergency Response Information:
In the event of an emergency, phone the Transporter at:
803, 884-7742
In event of a spill in South Carolina, call the Department at (803) 758-5531

D. Special Handling Instructions:
(None)

E. Comments:
Bldg 1279 UST Job

F. I hereby certify that I am a Permitted Hazardous Waste Transporter in the State, that the above information is correct to the best of my knowledge and belief and is being transported in accordance with all applicable regulations of the U.S. DOT, U.S. EPA, the S.C. PSC and the S.C. DHEC.

Signature: [signature] Print Name and Title: JC GIRLARDO, PRES Date: 8/21/92

G. I hereby certify that I am an authorized representative of the permitted transporter and that the waste and quantity described in this Manifest have been accepted by us for ultimate delivery to the TSDF identified above.

Transporter #2 Signature _____ Print Name and Title _____ Date _____

H. I hereby certify that I am an authorized representative of the TSDF identified above and that the waste and quantity described in this Manifest have been accepted by me for treatment, storage, and/or disposal.

Signature _____ Print Name and Title _____ Date _____

DHEC Exp #92 (5/80)

Instructions for completing this Form on reverse side.

Attachment B

UST

8/4/92

Tank Owner: NSC Bldg 1279 Charleston, SC

Tank Location: Same

Tank Size: 2-2500 1-3500 Gallons

Tank Contents: (X) Gas ( ) Fuel Oil ( ) Other

Current Status: Removed From Site In Place Abandonment

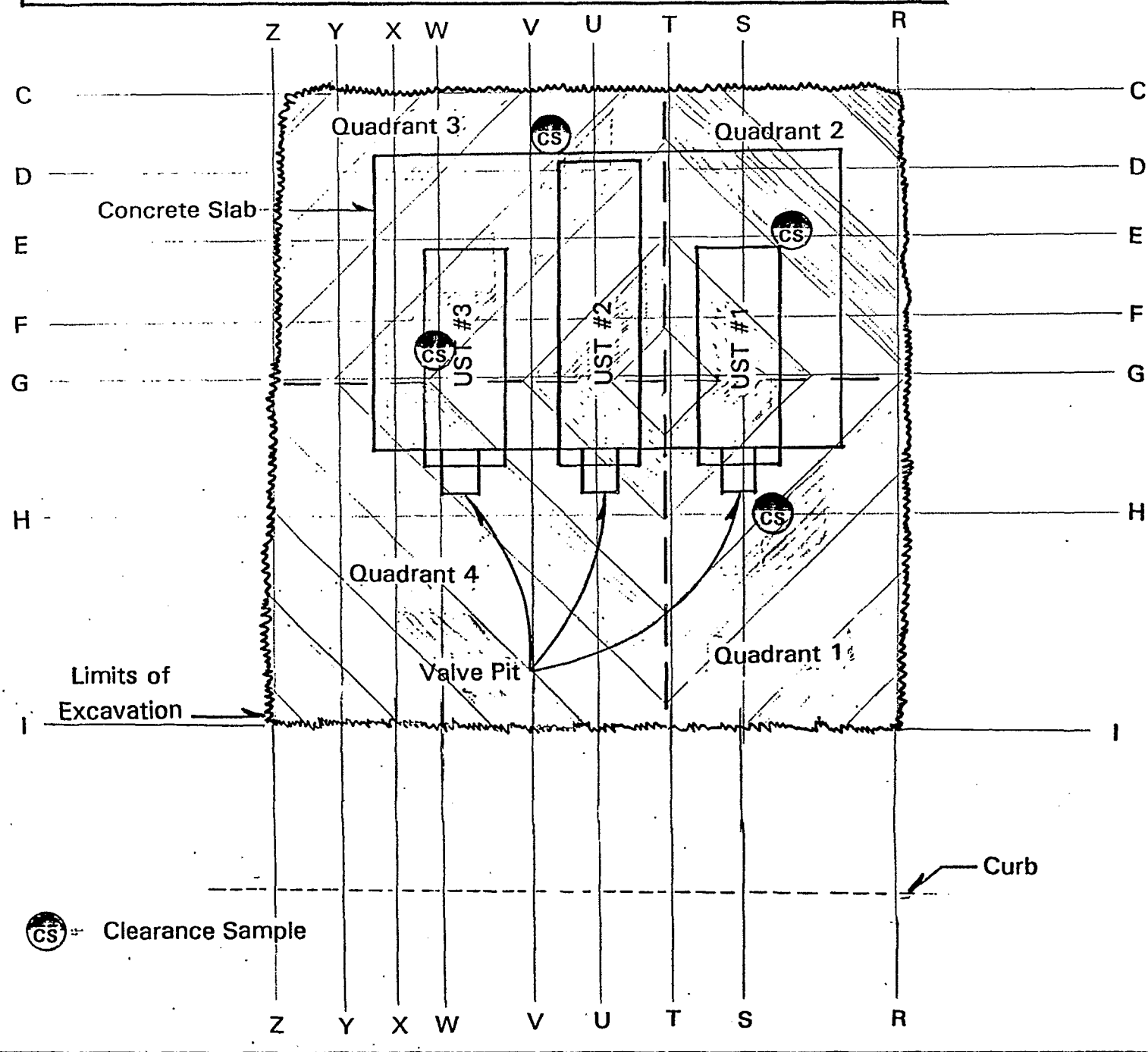
Tanks removed by Landrum / Landmark Const., delivered to AAA PTS, Inc, tanks were pumped + scraped out at AAA PTS, Inc, delivered to Charleston Steel + Metal for recycling of steel

UST Contractor: AAA Petroleum Tank Service, Inc.
P. O. Box 92
Mt. Pleasant, SC 29465
(803) 881-1360 Office
(803) 696-0626 Mobile

THIS IS TO CERTIFY THAT THE ABOVE CITED WORK HAS BEEN COMPLETED

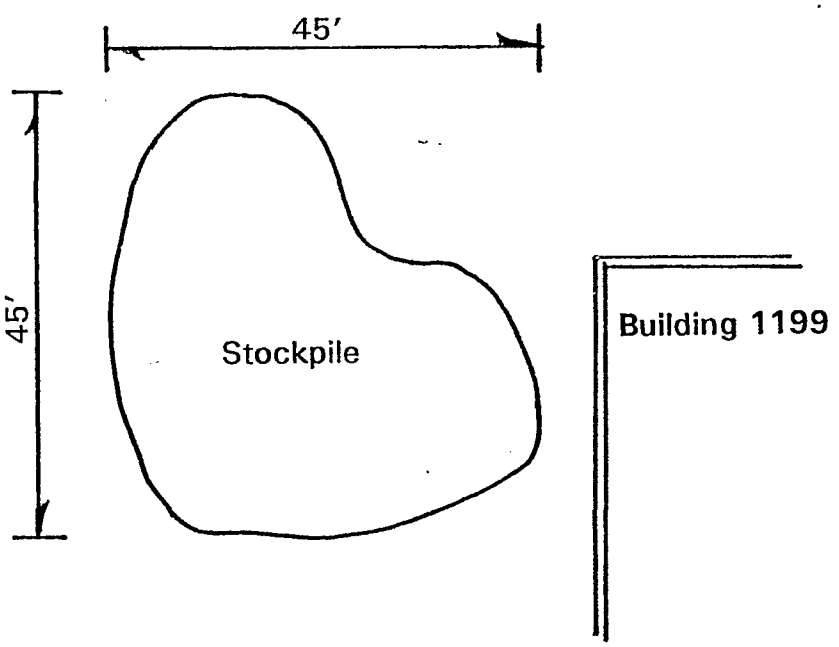
J. C. GIRLARDO

Attachment C



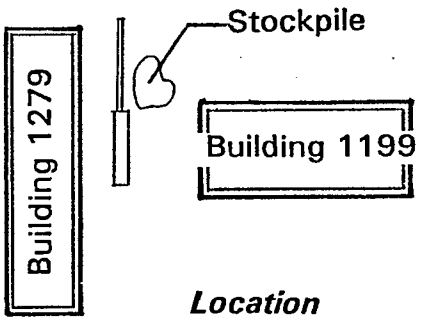
Job Title: *Charleston Naval Shipyard -- Building 1279*			
Sheet Title: Site Layout Plan	Scale: 1" = 10'	Date: 8/24/92	

Attachment D



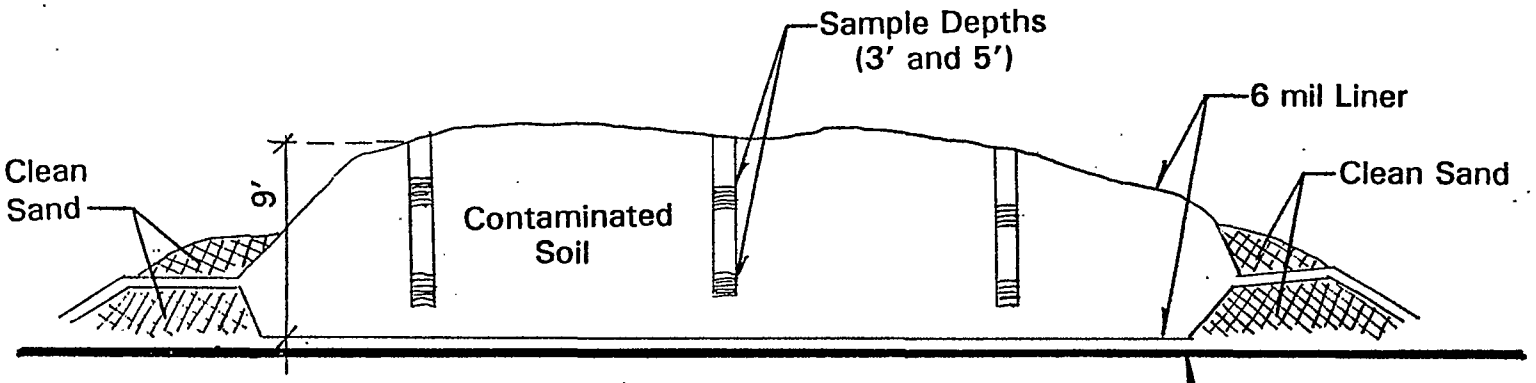
Plan View

Scale: 1" = 20′



Location

No Scale



Elevation

Scale: 1" = 10′

N	Job Title: *Charleston Naval Shipyard -- Building 1279*		
	Sheet Title: Stockpile	Scale:	Date: 8/25/92

Attachment E

James H. Carr & Associates, Inc.
Office & Laboratories
P.O. Box 90209
Columbia, SC 29290

08/22/92

Mr. Paul Calvo
Land Rec., Inc.
P.O. Box 50528
Columbia, SC 29250

Dear Mr. Calvo:

The following are the results of the parameters you requested we check on your SHIPYARD samples listed below.

Parameter	Analyst	Analysis Date	Analysis Time	Results	Lowest Detectable Level	Method #
08/19/92 In House # 08-3442-92 Source SAMPLE A Location STOCKPILE						
TPH light fuel, 5030 prep - solid	AT	08/22/92	00:21	351.000 mg/kg	10.000 mg/kg	801.5
Benzene - solid -UST	AT	08/22/92	00:21	2300.000 ug/kg	25.000 ug/kg	824.0
Toluene - solid - UST	AT	08/22/92	00:21	5870.000 ug/kg	25.000 ug/kg	824.0
Ethylbenzene - solid -UST	AT	08/22/92	00:21	< 25.000 ug/kg	25.000 ug/kg	824.0
Xylenes - solid - UST	AT	08/22/92	00:21	35600.000 ug/kg	50.000 ug/kg	824.0

Comments:
For BTEX and TPH, detection limits and less than values are 3.33X thoseshown.

08/19/92 In House # 08-3443-92 Source SAMPLE B Location STOCKPILE						
TPH light fuel, 5030 prep - solid	AT	08/22/92	00:49	327.000 mg/kg	10.000 mg/kg	801.5
Benzene - solid -UST	AT	08/22/92	00:49	2620.000 ug/kg	25.000 ug/kg	824.0
Toluene - solid - UST	AT	08/22/92	00:49	3970.000 ug/kg	25.000 ug/kg	824.0
Ethylbenzene - solid -UST	AT	08/22/92	00:49	< 25.000 ug/kg	25.000 ug/kg	824.0
Xylenes - solid - UST	AT	08/22/92	00:49	11700.000 ug/kg	50.000 ug/kg	824.0

Comments:
For BTEX and TPH, detection limits and less than values are 3.33X thoseshown.

08/19/92 In House # 08-3444-92 Source SAMPLE C Location STOCKPILE						
TPH light fuel, 5030 prep - solid	AT	08/22/92	01:15	503.000 mg/kg	10.000 mg/kg	801.5
Benzene - solid -UST	AT	08/22/92	01:15	4130.000 ug/kg	25.000 ug/kg	824.0
Toluene - solid - UST	AT	08/22/92	01:15	1620.000 ug/kg	25.000 ug/kg	824.0
Ethylbenzene - solid -UST	AT	08/22/92	01:15	7200.000 ug/kg	25.000 ug/kg	824.0
Xylenes - solid - UST	AT	08/22/92	01:15	11500.000 ug/kg	50.000 ug/kg	824.0

Comments:
For BTEX and TPH, detection limits and less than values are 10X those shown.

08/19/92 In House # 08-3445-92 Source SAMPLE D Location STOCKPILE						
TPH light fuel, 5030 prep - solid	AT	08/22/92	01:41	841.000 mg/kg	10.000 mg/kg	801.5
Benzene - solid -UST	AT	08/22/92	01:41	4300.000 ug/kg	25.000 ug/kg	824.0
Toluene - solid - UST	AT	08/22/92	01:41	8500.000 ug/kg	25.000 ug/kg	824.0
Ethylbenzene - solid -UST	AT	08/22/92	01:41	< 25.000 ug/kg	25.000 ug/kg	824.0
Xylenes - solid - UST	AT	08/22/92	01:41	30900.000 ug/kg	50.000 ug/kg	824.0

Attachment F

08/19/92 In House # 08-3445-92 Source SAMPLE D Location STOCKPILE
- CONTINUED -

Comments:
For BTEX and TPH, detection limits and less than values are 10X those shown.

08/19/92 In House # 08-3446-92 Source SAMPLE E Location STOCKPILE

TPH light fuel, 5030 prep - solid	AT	08/22/92	03:49	656.000 mg/kg	10.000 mg/kg	801.5
Benzene - solid -UST	AT	08/22/92	03:49	1870.000 ug/kg	25.000 ug/kg	824.0
Toluene - solid - UST	AT	08/22/92	03:49	8600.000 ug/kg	25.000 ug/kg	824.0
Ethylbenzene - solid -UST	AT	08/22/92	03:49	21500.000 ug/kg	25.000 ug/kg	824.0
Xylenes - solid - UST	AT	08/22/92	03:49	54400.000 ug/kg	50.000 ug/kg	824.0

Comments:
For BTEX and TPH, detection limits and less than values are 10X those shown.

08/19/92 In House # 08-3447-92 Source SAMPLE F Location STOCKPILE

TPH light fuel, 5030 prep - solid	AT	08/22/92	02:06	< 10.000 mg/kg	10.000 mg/kg	801.5
Benzene - solid -UST	AT	08/22/92	02:06	1840.000 ug/kg	25.000 ug/kg	824.0
Toluene - solid - UST	AT	08/22/92	02:06	5920.000 ug/kg	25.000 ug/kg	824.0
Ethylbenzene - solid -UST	AT	08/22/92	02:06	18500.000 ug/kg	25.000 ug/kg	824.0
Xylenes - solid - UST	AT	08/22/92	02:06	44400.000 ug/kg	50.000 ug/kg	824.0

Comments:
For BTEX and TPH, detection limits and less than values are 20X those shown.

08/19/92 In House # 08-3448-92 Source SAMPLE G Location STOCKPILE

TPH light fuel, 5030 prep - solid	AT	08/22/92	04:14	< 10.000 mg/kg	10.000 mg/kg	801.5
Benzene - solid -UST	AT	08/22/92	04:14	2640.000 ug/kg	25.000 ug/kg	824.0
Toluene - solid - UST	AT	08/22/92	04:14	5470.000 ug/kg	25.000 ug/kg	824.0
Ethylbenzene - solid -UST	AT	08/22/92	04:14	6310.000 ug/kg	25.000 ug/kg	824.0
Xylenes - solid - UST	AT	08/22/92	04:14	24600.000 ug/kg	50.000 ug/kg	824.0

Comments:
For BTEX and TPH, detection limits and less than values are 20X those shown.

08/19/92 In House # 08-3449-92 Source SAMPLE H Location STOCKPILE

TPH light fuel, 5030 prep - solid	AT	08/22/92	04:39	2870.000 mg/kg	10.000 mg/kg	801.5
Benzene - solid -UST	AT	08/22/92	04:39	12200.000 ug/kg	25.000 ug/kg	824.0
Toluene - solid - UST	AT	08/22/92	04:39	9400.000 ug/kg	25.000 ug/kg	824.0
Ethylbenzene - solid -UST	AT	08/22/92	04:39	46700.000 ug/kg	25.000 ug/kg	824.0
Xylenes - solid - UST	AT	08/22/92	04:39	107.000 mg/kg **	50.000 ug/kg	824.0

Comments:
For BTEX and TPH, detection limits and less than values are 10X those shown. ** denotes result is in mg/kg.

Laboratory ID # 40111
Very truly yours,

James H. Carr, Jr.
Chemist

Attachment F

James H. Carr & Associates, Inc.
Office & Laboratories
P.O. Box 90209
Columbia, SC 29290

08/22/92

Mr. Paul Calvo
Land Rec., Inc.
P.O. Box 50528
Columbia, SC 29250

Dear Mr. Calvo:

The following are the results of the parameters you requested we check on your SHIPVAFD samples listed below.

Parameter	Analyst	Analysis Date	Analysis Time	Results	Lowest Detectable Level	Method #
08/19/92 In House # 08-3450-92 Source SAMPLE 1 Location STOCKPILE						
TPH light fuel, 5030 prep - solid	AT	08/22/92	05:05	6750.000 mg/kg	10.000 mg/kg	801.5
Benzene - solid -UST	AT	08/22/92	05:05	4840.000 ug/kg	25.000 ug/kg	824.0
Toluene - solid - UST	AT	08/22/92	05:05	1260.000 ug/kg	25.000 ug/kg	824.0
Ethylbenzene - solid -UST	AT	08/22/92	05:05	6400.000 ug/kg	25.000 ug/kg	824.0
Xylenes - solid - UST	AT	08/22/92	05:05	8170.000 ug/kg	50.000 ug/kg	824.0

Comments:
For BTEX and TPH, detection limits and less than values are 10X those shown.

08/19/92 In House # 08-3451-92 Source SAMPLE 3 Location STOCKPILE						
TPH light fuel, 5030 prep - solid	AT	08/22/92	05:30	733.000 mg/kg	10.000 mg/kg	801.5
Benzene - solid -UST	AT	08/22/92	05:30	395.000 ug/kg	25.000 ug/kg	824.0
Toluene - solid - UST	AT	08/22/92	05:30	340.000 ug/kg	25.000 ug/kg	824.0
Ethylbenzene - solid -UST	AT	08/22/92	05:30	< 25.000 ug/kg	25.000 ug/kg	824.0
Xylenes - solid - UST	AT	08/22/92	05:30	8350.000 ug/kg	50.000 ug/kg	824.0

Comments:
For BTEX and TPH, detection limits and less than values are 10X those shown.

Laboratory ID # 40111
Very truly yours,

James H. Carr, Jr.
Chemist

Attachment F

CARR LABORATORIES

CHAIN OF CUSTODY RECORD NAVAL SHIPYARD Bldg 1279

Client LANDREC INC.
Contact PAUL CALVO
Address P.O. Box 50528
Collected By Paul Calvo

Project No.
Phone No. 2541545
Fax No.
Client P.O.#

MT (Matrix Type)	AP (Analytical Program)
L=Liquid	W=Wastewater
S=Soil	G=Groundwater
O=Oil	D=Drinking Water
X=Other	S=Solid/Haz. Waste
	N=Nonregulated

Carr's Lab No.	Sample Source	Sample Location	Date/Time 1992	Well	Grab	Composite	MT	AP	Number of Containers	Preserved V or N	Analyses Requested GASOLINE
08-3442-92	STOCKPILE	A	8/19 / 2:30		X		S		1	N	TPH / BTEX
3443	STOCKPILE	B	8/19 / 2:42		X		S		1	N	Per Paul Calvo
3444	STOCKPILE	C	8/19 / 2:58		X		S		1	N	wants reports
3445	STOCKPILE	D	8/19 / 3:10		X		S		1	N	fax to NAVAL YARD
3446	STOCKPILE	E	8/19 / 3:22		X		S		1	N	8/24/92
3447	STOCKPILE	F	8/19 / 3:33		X		S		1	N	Andy Turner
3448	STOCKPILE	G	8/19 / 3:42		X		S		1	N	RUSH
3449	STOCKPILE	H	8/19 / 3:50		X		S		1	N	
3450	STOCKPILE	I	8/19 / 3:58		X		S		1	N	
3451	STOCKPILE	J	8/19 / 4:06		X		S		1	N	

	Relinquished By	Received By	Date	Time
1.	Paul A. Calvo	Dorothy Hutto	8-20-92	8:37
2.				
3.				
Received In Lab By		Dorothy Hutto	8-20-92	8:37

JAMES H. CARR & ASSOCIATES, INC.
Office and Laboratories
P.O. Box 90209
Columbia, South Carolina 29290
(803) 776-7789 Fax: 783-2192

Attachment F