NOVEMBER 14, 2006

FINAL REPORT FOR SOIL SAMPLES RECEIVED FROM THE VISTA ENGINEERING DNAPL STUDY IN OCTOBER 2006

Sample Group No. 20061094

Gerald P. Ritenour
Advanced Technologies and Laboratories International, Inc.

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Prepared for:

Vista Engineering Technologies, L.L.C.
8203 W. Quinault, Building C, Suite 200
Kennewick, WA 99336509-737-1377

Prepared by:

ATL International, Inc.
P.O. Box 250
Richland, WA 99352-0250
509-375-4200

H Anastos 11/14/06
H. L. Anastos, ATL, Chief Operating Officer

G. P. Ritenour 11/14/06
G. P. Ritenour, ATL, Project Coordinator

222-S LABORATORY

FINAL REPORT FOR SOIL SAMPLES RECEIVED FROM THE VISTA ENGINEERING DNAPL STUDY IN OCTOBER

1.0 INTRODUCTION

Six samples from the Vista Engineering DNAPL Study were received at the 222-S Laboratory on October 25, 2006. The samples were analyzed in accordance with SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW846), verbal and electronic communication from the client, and ATL-MP-1011, *ATL Quality Assurance Project Plan for 222-S Laboratory*.

A Data Summary Report is included as Attachment 1. Surrogate recoveries for the volatile organic compounds (VOC) analysis are reported in Attachment 2. The correlation between the customer sample identification numbers and laboratory identification numbers is presented in the Sample Breakdown Diagram included as Attachment 3. Receipt paperwork in presented in Attachment 4. Attachment 5 contains an email communication instructing the laboratory to perform only isotopic uranium and VOC analyses.

2.0 SAMPLE DESCRIPTION AND HANDLING

The samples were received at 4° C with adequate paperwork. Sample B1KTV2 was received with an expired holding time for VOC analysis and samples B1KX28, B1KXB1, and B1KX99 had less than half the holding time remaining for VOC analyses.

3.0 HOLDING TIMES

SW-846 holding times were referenced for all of the VOC analysis and are presented in Table 1. Sample B1KTV2 was received by 222-S after the holding time had expired.

Table 1. Holding Times.

Sample Number	Sampling Date	Receipt Date	Analysis Date	SW-846 Holding Time	Elapsed Time
B1KTV2	10/06/06	10/25/06	10/25/06	14 days	19
B1KX28	10/17/06	10/25/06	10/25/06	14 days	12
B1KX31	10/24/06	10/25/06	10/25/06	14 days	1
B1KX99	10/17/06	10/25/06	10/26/06	14 days	12
B1KXB1	10/17/06	10/25/06	10/26/06	14 days	12

4.0 ANALYTICAL RESULTS

The Data Summary Report in Attachment 1 presents the analytical results for the requested analytes. The column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. The "A" indicates an acid digestion of a solid sample. The VOC analysis does not have an aliquot class because there is no preparation prior to analysis.

The "Qual Flags" column in the Data Summary Report contains data qualifier flags that are defined as follows:

a. "U" indicates that the reported result is less than the calculated method detection limit (MDL).
b. "J" is applied to reported results that are between the MDL and the laboratory's quantitation limit. Results with a "J" flag should be considered an estimate because of increased uncertainty near the MDL.

4.1 QUALITY CONTROL RESULTS

4.1.1 Laboratory Control Samples

The accuracy of the analyses was evaluated from the recovery of a laboratory control sample (LCS). All LCS recoveries were acceptable in accordance with ATL-MP-1011.

4.1.2 Method Blanks

No required analytes were detected in the method blanks for the VOC analyses. A low level of ^{235}U and ^{238}U were detected in the preparation blank, but were less than 5% of the sample result and the results were not qualified, in accordance with ATL-MP-1011.

4.1.3 Duplicate and Matrix Spike Duplicate

The relative percent difference (RPD) between sample and duplicate or matrix spike (MS) and matrix spike duplicate (MSD) results all met the criteria in ATL-MP-1011. The Data Summary Report does not present the recoveries for the MSD analysis or the RPD for the MS/MSD for the VOC analysis. This information is provided in Table 2 and Table 3. Due to a software limitation, RPDs are calculated for all uranium isotopes even if the result was a non-detect. These RPD values in the data summary report should be ignored for ^{233}U, ^{234}U, and ^{236}U.

4.1.4 Matrix Spike

All MS and MSD recoveries were acceptable in accordance with ATL-MP-1011 except for methyl isobutyl ketone and 2-hexanone, which were recovered slightly above the 70%-130% acceptance criteria. This would indicate that the results for these compounds would be biased high. However, since all samples are non-detect for these compounds the results were not affected. The data summary report only displays recoveries for the five method required spiking compounds for the VOC analysis. Four ketone compounds were also in the spiking solution and their recoveries are presented in Table 2 and Table 3 along with the five method required compounds.

Table 2. MS/MSD Recoveries for Sample B1KXB1.

Compound	MS (%)	MSD (%)	RPD (%)
1,1 Dichloroethene	108	101	7
Benzene	110	108	2
1,1,2-Trichloroethylene	106	100	6
Toluene	107	106	1
Chlorobenzene	108	107	1
Acetone[1]	116	120	3
2-Butanone[1]	117	123	5
Methyl Isobutyl Ketone[1]	125	134[2]	7
2-Hexanone[1]	126	137[2]	8

1) Spike compounds not required by method

2) Recovery exceeded the 70% to130%

Table 3. MS/MSD Recoveries for Sample B1KX31

Compound	MS (%)	MSD (%)	RPD (%)
1,1 Dichloroethene	106	104	2
Benzene	104	102	2
1,1,2-Trichloroethylene	98	67	1
Toluene	106	106	0
Chlorobenzene	103	102	1
Acetone[1]	101	83	20
2-Butanone[1]	100	85	16
Methyl Isobutyl Ketone[1]	111	95	16
2-Hexanone[1]	111	92	19

1) Spike compounds not required by method

4.1.5 Surrogate

A surrogate standard was added to all field and quality control (QC) samples for VOC analyses. All surrogate recoveries met the requirements in ATL-MP-1011. The surrogate recoveries for all samples are reported in Attachment 2.

5.0 ANALYTICAL PROCEDURES

Table 4 presents the 222-S Laboratory analytical procedures used for the analysis of the samples presented in this report.

Table 4. Analytical Procedures.

Analysis	Preparation Procedure	Analysis Procedure
Inorganic		
ICPMS-Isotopic U	LA-505-163 Rev. E-0	LA-506-102 Rec. C-0
Organic		
VOC	Direct	LA-523-118 Rev. E-0

6.0 REFERENCES

ATL-MP-1011, 2006, *ATL Quality Assurance Project Plan for 222-S Laboratory*, Revision 5, Advanced Technologies and Laboratories International, Inc., Richland, Washington.

SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, Third Edition, as amended, U.S. Environmental Protection Agency, Washington, D.C., September 1986.

Attachment 1

DATA SUMMARY REPORT

VISTA ENG. DNPAL STUDY
Z9 VISTA

Category: R
Customer Group or SDG Number: 20061094
Customer Sample ID: B1KTV2
Sample Portion: 40 mL VOA Vial(4)

Sample# R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001112		1,1,1-Trichloroethane	ug/L	n/a	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S06M001112		1,1,2,2-Tetrachloroethane	ug/L	n/a	<0.250	<0.250	n/a	n/a	n/a	n/a	0.250	n/a	U
S06M001112		1,1,2-Trichloroethane	ug/L	n/a	<0.190	<0.190	n/a	n/a	n/a	n/a	0.190	n/a	U
S06M001112		1,1-Dichloroethane	ug/L	n/a	<0.140	<0.140	n/a	n/a	n/a	n/a	0.140	n/a	U
S06M001112		1,1-Dichloroethene	ug/L	108	<0.170	<0.170	n/a	n/a	n/a	n/a	0.170	n/a	U
S06M001112		1,2-Dichlorobenzene	ug/L	n/a	<0.200	<0.200	n/a	n/a	n/a	n/a	0.200	n/a	U
S06M001112		1,2-Dichloroethane	ug/L	n/a	<0.0900	<0.0900	n/a	n/a	n/a	n/a	0.0900	n/a	U
S06M001112		1,2-Dichloroethene (cis & trans)	ug/L	n/a	<0.300	<0.300	n/a	n/a	n/a	n/a	0.300	n/a	U
S06M001112		1,2-Dichloropropane	ug/L	n/a	<0.200	<0.200	n/a	n/a	n/a	n/a	0.200	n/a	U
S06M001112		1,3-Dichlorobenzene	ug/L	n/a	<0.160	<0.160	n/a	n/a	n/a	n/a	0.160	n/a	U
S06M001112		1,4-Dichlorobenzene	ug/L	n/a	<0.170	<0.170	n/a	n/a	n/a	n/a	0.170	n/a	U
S06M001112		1-Butanol	ug/L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
S06M001112		2-Butanone	ug/L	n/a	<1.33	<1.33	n/a	n/a	n/a	n/a	1.33	n/a	U
S06M001112		2-Hexanone	ug/L	n/a	<0.860	<0.860	n/a	n/a	n/a	n/a	0.860	n/a	U
S06M001112		2-Pentanone	ug/L	n/a	<1.51	<1.51	n/a	n/a	n/a	n/a	1.51	n/a	U
S06M001112		4-Methyl-2-pentanone	ug/L	n/a	<0.880	<0.880	n/a	n/a	n/a	n/a	0.880	n/a	U
S06M001112		Acetone	ug/L	n/a	<2.19	<2.19	n/a	n/a	n/a	n/a	2.19	n/a	U
S06M001112		Benzene	ug/L	101	<0.160	<0.160	n/a	n/a	n/a	n/a	0.160	n/a	U
S06M001112		Bromodichloromethane	ug/L	n/a	<0.0700	<0.0700	n/a	n/a	n/a	n/a	0.0700	n/a	U
S06M001112		Bromoform	ug/L	n/a	<0.180	<0.180	n/a	n/a	n/a	n/a	0.180	n/a	U
S06M001112		Bromomethane	ug/L	n/a	<0.490	<0.490	n/a	n/a	n/a	n/a	0.490	n/a	U
S06M001112		Carbon Disulfide	ug/L	n/a	<0.150	0.701	n/a	n/a	n/a	n/a	0.150	n/a	J
S06M001112		Carbon Tetrachloride	ug/L	n/a	<0.150	<0.150	n/a	n/a	n/a	n/a	0.150	n/a	U
S06M001112		Chlorobenzene	ug/L	104	<0.110	<0.110	n/a	n/a	n/a	n/a	0.110	n/a	U
S06M001112		Chloroethane	ug/L	n/a	<0.800	<0.800	n/a	n/a	n/a	n/a	0.800	n/a	U
S06M001112		Chloroform	ug/L	n/a	<0.0900	<0.0900	n/a	n/a	n/a	n/a	0.0900	n/a	U
S06M001112		Chloromethane	ug/L	n/a	<0.310	<0.310	n/a	n/a	n/a	n/a	0.310	n/a	U
S06M001112		Dibromochloromethane	ug/L	n/a	<0.130	<0.130	n/a	n/a	n/a	n/a	0.130	n/a	U
S06M001112		Ethylbenzene	ug/L	n/a	<0.120	<0.120	n/a	n/a	n/a	n/a	0.120	n/a	U

J = Estimated result between the EQL and the MDL
U = Result < MDL

NOVEMBER 14, 2006
20061094

VISTA ENG. DNPAL STUDY
Z9 VISTA

Category: R
Customer Group or SDG Number: 20061094
Customer Sample ID: B1KTV2
Sample Portion: 40 mL VOA Vial(4)

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001112			Methylene Chloride	ug/L	n/a	<0.170	2.59	n/a	n/a	n/a	n/a	0.170	n/a	
S06M001112			Styrene	ug/L	n/a	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S06M001112			Tetrachloroethene	ug/L	n/a	<0.200	<0.200	n/a	n/a	n/a	n/a	0.200	n/a	U
S06M001112			Tetrahydrofuran	ug/L	n/a	<0.250	<0.250	n/a	n/a	n/a	n/a	0.250	n/a	U
S06M001112			Toluene	ug/L	108	<0.120	<0.120	n/a	n/a	n/a	n/a	0.120	n/a	U
S06M001112			Total Trihalomethanes	ug/L	n/a	<0.460	<0.460	n/a	n/a	n/a	n/a	0.460	n/a	U
S06M001112			Trichloroethene	ug/L	96.6	<0.150	<0.150	n/a	n/a	n/a	n/a	0.150	n/a	U
S06M001112			Vinyl Chloride	ug/L	n/a	<0.320	<0.320	n/a	n/a	n/a	n/a	0.320	n/a	U
S06M001112			Xylenes (total)	ug/L	n/a	<0.310	<0.310	n/a	n/a	n/a	n/a	0.310	n/a	U
S06M001112			cis-1,3-Dichloropropene	ug/L	n/a	<0.120	<0.120	n/a	n/a	n/a	n/a	0.120	n/a	U
S06M001112			trans-1,3-Dichloropropene	ug/L	n/a	<0.0700	<0.0700	n/a	n/a	n/a	n/a	0.0700	n/a	U

J = Estimated result between the EQL and the MDL
U = Result < MDL

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VISTA ENG. DNPAL STUDY
Z9 VISTA

Category: R
Customer Group or SDG Number: 20061094
Customer Sample ID: B1KTW7
Sample Portion: Acid Digest

Sample# R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001110	A	Uranium-233	ug/g	n/a	<1.00E-07	<3.93E-04	n/a	n/a	n/a	n/a	3.93E-04	n/a	U
S06M001110	A	Uranium-234	ug/g	n/a	<5.00E-08	2.08E-04	n/a	n/a	n/a	n/a	1.97E-04	n/a	J
S06M001110	A	Uranium-235	ug/g	n/a	3.19E-07	0.0127	n/a	n/a	n/a	n/a	4.32E-04	n/a	
S06M001110	A	Uranium-236	ug/g	n/a	<4.00E-08	<1.57E-04	n/a	n/a	n/a	n/a	1.57E-04	n/a	U
S06M001110	A	Uranium-238	ug/g	103	4.10E-05	1.77	n/a	n/a	n/a	n/a	0.0216	n/a	

J = Estimated result between the EQL and the MDL
U = Result < MDL

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20061094

VISTA ENG. DNPAL STUDY
Z9 VISTA

Category: R
Customer Group or SDG Number: 20061094
Customer Sample ID: B1KX28
Sample Portion: 40 mL VOA Vial

Sample# R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001111		1,1,1-Trichloroethane	ug/L	n/a	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S06M001111		1,1,2,2-Tetrachloroethane	ug/L	n/a	<0.250	<0.250	n/a	n/a	n/a	n/a	0.250	n/a	U
S06M001111		1,1,2-Trichloroethane	ug/L	n/a	<0.190	<0.190	n/a	n/a	n/a	n/a	0.190	n/a	U
S06M001111		1,1-Dichloroethane	ug/L	n/a	<0.140	<0.140	n/a	n/a	n/a	n/a	0.140	n/a	U
S06M001111		1,1-Dichloroethene	ug/L	108	<0.170	<0.170	n/a	n/a	n/a	n/a	0.170	n/a	U
S06M001111		1,2-Dichlorobenzene	ug/L	n/a	<0.200	<0.200	n/a	n/a	n/a	n/a	0.200	n/a	U
S06M001111		1,2-Dichloroethane	ug/L	n/a	<0.0900	<0.0900	n/a	n/a	n/a	n/a	0.0900	n/a	U
S06M001111		1,2-Dichloroethene (cis & trans)	ug/L	n/a	<0.300	<0.300	n/a	n/a	n/a	n/a	0.300	n/a	U
S06M001111		1,2-Dichloropropane	ug/L	n/a	<0.200	<0.200	n/a	n/a	n/a	n/a	0.200	n/a	U
S06M001111		1,3-Dichlorobenzene	ug/L	n/a	<0.160	<0.160	n/a	n/a	n/a	n/a	0.160	n/a	U
S06M001111		1,4-Dichlorobenzene	ug/L	n/a	<0.170	<0.170	n/a	n/a	n/a	n/a	0.170	n/a	U
S06M001111		1-Butanol	ug/L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
S06M001111		2-Butanone	ug/L	n/a	<1.33	<1.33	n/a	n/a	n/a	n/a	1.33	n/a	U
S06M001111		2-Hexanone	ug/L	n/a	<0.860	<0.860	n/a	n/a	n/a	n/a	0.860	n/a	U
S06M001111		2-Pentanone	ug/L	n/a	<1.51	<1.51	n/a	n/a	n/a	n/a	1.51	n/a	U
S06M001111		4-Methyl-2-pentanone	ug/L	n/a	<0.880	<0.880	n/a	n/a	n/a	n/a	0.880	n/a	U
S06M001111		Acetone	ug/L	n/a	<2.19	<2.19	n/a	n/a	n/a	n/a	2.19	n/a	U
S06M001111		Benzene	ug/L	101	<0.160	<0.160	n/a	n/a	n/a	n/a	0.160	n/a	U
S06M001111		Bromodichloromethane	ug/L	n/a	<0.0700	<0.0700	n/a	n/a	n/a	n/a	0.0700	n/a	U
S06M001111		Bromoform	ug/L	n/a	<0.180	<0.180	n/a	n/a	n/a	n/a	0.180	n/a	U
S06M001111		Bromomethane	ug/L	n/a	<0.490	<0.490	n/a	n/a	n/a	n/a	0.490	n/a	U
S06M001111		Carbon Disulfide	ug/L	n/a	<0.150	0.504	n/a	n/a	n/a	n/a	0.150	n/a	J
S06M001111		Carbon Tetrachloride	ug/L	n/a	<0.150	<0.150	n/a	n/a	n/a	n/a	0.150	n/a	U
S06M001111		Chlorobenzene	ug/L	104	<0.110	<0.110	n/a	n/a	n/a	n/a	0.110	n/a	U
S06M001111		Chloroethane	ug/L	n/a	<0.800	<0.800	n/a	n/a	n/a	n/a	0.800	n/a	U
S06M001111		Chloroform	ug/L	n/a	<0.0900	<0.0900	n/a	n/a	n/a	n/a	0.0900	n/a	U
S06M001111		Chloromethane	ug/L	n/a	<0.310	<0.310	n/a	n/a	n/a	n/a	0.310	n/a	U
S06M001111		Dibromochloromethane	ug/L	n/a	<0.130	<0.130	n/a	n/a	n/a	n/a	0.130	n/a	U
S06M001111		Ethylbenzene	ug/L	n/a	<0.120	<0.120	n/a	n/a	n/a	n/a	0.120	n/a	U

J = Estimated result between the EQL and the MDL
U = Result < MDL

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VISTA ENG. DNPAL STUDY
Z9 VISTA

Category: R
Customer Group or SDG Number: 20061094
Customer Sample ID: B1KX28
Sample Portion: 40 mL VOA Vial

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001111			Methylene Chloride	ug/L	n/a	<0.170	11.6	n/a	n/a	n/a	n/a	0.170	n/a	E
S06M001111			Styrene	ug/L	n/a	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S06M001111			Tetrachloroethene	ug/L	n/a	<0.200	<0.200	n/a	n/a	n/a	n/a	0.200	n/a	U
S06M001111			Tetrahydrofuran	ug/L	n/a	<0.250	<0.250	n/a	n/a	n/a	n/a	0.250	n/a	U
S06M001111			Toluene	ug/L	108	<0.120	<0.120	n/a	n/a	n/a	n/a	0.120	n/a	U
S06M001111			Total Trihalomethanes	ug/L	n/a	<0.460	<0.460	n/a	n/a	n/a	n/a	0.460	n/a	U
S06M001111			Trichloroethene	ug/L	96.6	<0.150	<0.150	n/a	n/a	n/a	n/a	0.150	n/a	U
S06M001111			Vinyl Chloride	ug/L	n/a	<0.320	<0.320	n/a	n/a	n/a	n/a	0.320	n/a	U
S06M001111			Xylenes (total)	ug/L	n/a	<0.310	<0.310	n/a	n/a	n/a	n/a	0.310	n/a	U
S06M001111			cis-1,3-Dichloropropene	ug/L	n/a	<0.120	<0.120	n/a	n/a	n/a	n/a	0.120	n/a	U
S06M001111			trans-1,3-Dichloropropene	ug/L	n/a	<0.0700	<0.0700	n/a	n/a	n/a	n/a	0.0700	n/a	U

J = Estimated result between the EQL and the MDL
U = Result < MDL

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20061094

VISTA ENG. DNPAL STUDY
Z9 VISTA

Category: R
Customer Group or SDG Number: 20061094
Customer Sample ID: B1KX31
Sample Portion: 40 mL VOA Vial(4)

Sample# R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001104		1,1,1-Trichloroethane	ug/L	n/a	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S06M001104		1,1,2,2-Tetrachloroethane	ug/L	n/a	<0.250	<0.250	n/a	n/a	n/a	n/a	0.250	n/a	U
S06M001104		1,1,2-Trichloroethane	ug/L	n/a	<0.190	<0.190	n/a	n/a	n/a	n/a	0.190	n/a	U
S06M001104		1,1-Dichloroethane	ug/L	n/a	<0.140	<0.140	n/a	n/a	n/a	n/a	0.140	n/a	U
S06M001104		1,1-Dichloroethene	ug/L	108	<0.170	<0.170	n/a	n/a	n/a	106	0.170	n/a	U
S06M001104		1,2-Dichlorobenzene	ug/L	n/a	<0.200	<0.200	n/a	n/a	n/a	n/a	0.200	n/a	U
S06M001104		1,2-Dichloroethane	ug/L	n/a	<0.0900	<0.0900	n/a	n/a	n/a	n/a	0.0900	n/a	U
S06M001104		1,2-Dichloroethene (cis & trans)	ug/L	n/a	<0.300	<0.300	n/a	n/a	n/a	n/a	0.300	n/a	U
S06M001104		1,2-Dichloropropane	ug/L	n/a	<0.200	<0.200	n/a	n/a	n/a	n/a	0.200	n/a	U
S06M001104		1,3-Dichlorobenzene	ug/L	n/a	<0.160	<0.160	n/a	n/a	n/a	n/a	0.160	n/a	U
S06M001104		1,4-Dichlorobenzene	ug/L	n/a	<0.170	<0.170	n/a	n/a	n/a	n/a	0.170	n/a	U
S06M001104		2-Butanone	ug/L	n/a	<1.33	<1.33	n/a	n/a	n/a	n/a	1.33	n/a	U
S06M001104		2-Hexanone	ug/L	n/a	<0.860	<0.860	n/a	n/a	n/a	n/a	0.860	n/a	U
S06M001104		2-Pentanone	ug/L	n/a	<1.51	<1.51	n/a	n/a	n/a	n/a	1.51	n/a	U
S06M001104		4-Methyl-2-pentanone	ug/L	n/a	<0.880	<0.880	n/a	n/a	n/a	n/a	0.880	n/a	U
S06M001104		Acetone	ug/L	n/a	<2.19	<2.19	n/a	n/a	n/a	n/a	2.19	n/a	U
S06M001104		Benzene	ug/L	101	<0.160	<0.160	n/a	n/a	n/a	104	0.160	n/a	U
S06M001104		Bromodichloromethane	ug/L	n/a	<0.0700	<0.0700	n/a	n/a	n/a	n/a	0.0700	n/a	U
S06M001104		Bromoform	ug/L	n/a	<0.180	<0.180	n/a	n/a	n/a	n/a	0.180	n/a	U
S06M001104		Bromomethane	ug/L	n/a	<0.490	<0.490	n/a	n/a	n/a	n/a	0.490	n/a	U
S06M001104		Carbon Disulfide	ug/L	n/a	<0.150	<0.150	n/a	n/a	n/a	n/a	0.150	n/a	U
S06M001104		Carbon Tetrachloride	ug/L	n/a	<0.150	<0.150	n/a	n/a	n/a	n/a	0.150	n/a	U
S06M001104		Chlorobenzene	ug/L	104	<0.110	<0.110	n/a	n/a	n/a	103	0.110	n/a	U
S06M001104		Chloroethane	ug/L	n/a	<0.800	<0.800	n/a	n/a	n/a	n/a	0.800	n/a	U
S06M001104		Chloroform	ug/L	n/a	<0.0900	<0.0900	n/a	n/a	n/a	n/a	0.0900	n/a	U
S06M001104		Chloromethane	ug/L	n/a	<0.310	<0.310	n/a	n/a	n/a	n/a	0.310	n/a	U
S06M001104		Dibromochloromethane	ug/L	n/a	<0.130	<0.130	n/a	n/a	n/a	n/a	0.130	n/a	U
S06M001104		Ethylbenzene	ug/L	n/a	<0.120	<0.120	n/a	n/a	n/a	n/a	0.120	n/a	U
S06M001104		Methylene Chloride	ug/L	n/a	<0.170	2.50	n/a	n/a	n/a	n/a	0.170	n/a	

J = Estimated result between the EQL and the MDL
U = Result < MDL

NOVEMBER 14, 2006
20061094

VISTA ENG. DNPAL STUDY
Z9 VISTA

Category: R
Customer Group or SDG Number: 20061094
Customer Sample ID: B1KX31
Sample Portion: 40 mL VOA Vial(4)

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001104			Styrene	ug/L	n/a	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S06M001104			Tetrachloroethene	ug/L	n/a	<0.200	<0.200	n/a	n/a	n/a	n/a	0.200	n/a	U
S06M001104			Tetrahydrofuran	ug/L	n/a	<0.250	<0.250	n/a	n/a	n/a	n/a	0.250	n/a	U
S06M001104			Toluene	ug/L	108	<0.120	<0.120	n/a	n/a	n/a	106	0.120	n/a	U
S06M001104			Total Trihalomethanes	ug/L	n/a	<0.460	<0.460	n/a	n/a	n/a	n/a	0.460	n/a	U
S06M001104			Trichloroethene	ug/L	96.6	<0.150	<0.150	n/a	n/a	n/a	98.2	0.150	n/a	U
S06M001104			Vinyl Chloride	ug/L	n/a	<0.320	<0.320	n/a	n/a	n/a	n/a	0.320	n/a	U
S06M001104			Xylenes (total)	ug/L	n/a	<0.310	<0.310	n/a	n/a	n/a	n/a	0.310	n/a	U
S06M001104			cis-1,3-Dichloropropene	ug/L	n/a	<0.120	<0.120	n/a	n/a	n/a	n/a	0.120	n/a	U
S06M001104			trans-1,3-Dichloropropene	ug/L	n/a	<0.0700	<0.0700	n/a	n/a	n/a	n/a	0.0700	n/a	U

J = Estimated result between the EQL and the MDL
U = Result < MDL

NOVEMBER 14, 2006
20061094

VISTA ENG. DNPAL STUDY
Z9 VISTA

Category: R
Customer Group or SDG Number: 20061094
Customer Sample ID: B1KX99
Sample Portion: Acid Digest

Sample# R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001105	A	Uranium-233	ug/g	n/a	<1.00E-07	<3.85E-04	<3.84E-04	n/a	0.0397	n/a	3.85E-04	n/a	U
S06M001105	A	Uranium-234	ug/g	n/a	<5.00E-08	<1.92E-04	<1.92E-04	n/a	0.0397	n/a	1.92E-04	n/a	U
S06M001105	A	Uranium-235	ug/g	n/a	3.19E-07	8.51E-03	7.43E-03	7.97E-03	13.6	101	4.23E-04	n/a	
S06M001105	A	Uranium-236	ug/g	n/a	<4.00E-08	<1.54E-04	1.88E-04	1.71E-04	20.1	n/a	1.54E-04	n/a	U
S06M001105	A	Uranium-238	ug/g	103	4.10E-05	1.10	1.04	1.07	6.28	111	0.0212	n/a	

Sample Portion: 20 mL Glass

Sample# R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001102		1,1,1-Trichloroethane	ug/Kg	n/a	<0.200	<0.200	n/a	n/a	n/a	n/a	0.200	n/a	U
S06M001102		1,1,2,2-Tetrachloroethane	ug/Kg	n/a	<0.500	<0.500	n/a	n/a	n/a	n/a	0.500	n/a	U
S06M001102		1,1,2-Trichloroethane	ug/Kg	n/a	<0.380	<0.380	n/a	n/a	n/a	n/a	0.380	n/a	U
S06M001102		1,1-Dichloroethane	ug/Kg	n/a	<0.280	<0.280	n/a	n/a	n/a	n/a	0.280	n/a	U
S06M001102		1,1-Dichloroethene	ug/Kg	108	<0.340	<0.340	n/a	n/a	n/a	n/a	0.340	n/a	U
S06M001102		1,2-Dichlorobenzene	ug/Kg	n/a	<0.400	<0.400	n/a	n/a	n/a	n/a	0.400	n/a	U
S06M001102		1,2-Dichloroethane	ug/Kg	n/a	<0.180	<0.180	n/a	n/a	n/a	n/a	0.180	n/a	U
S06M001102		1,2-Dichloroethene (cis & trans)	ug/Kg	n/a	<0.600	<0.600	n/a	n/a	n/a	n/a	0.600	n/a	U
S06M001102		1,2-Dichloropropane	ug/Kg	n/a	<0.400	<0.400	n/a	n/a	n/a	n/a	0.400	n/a	U
S06M001102		1,3-Dichlorobenzene	ug/Kg	n/a	<0.320	<0.320	n/a	n/a	n/a	n/a	0.320	n/a	U
S06M001102		1,4-Dichlorobenzene	ug/Kg	n/a	<0.340	<0.340	n/a	n/a	n/a	n/a	0.340	n/a	U
S06M001102		1-Butanol	ug/Kg	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
S06M001102		2-Butanone	ug/Kg	n/a	<2.66	8.42	n/a	n/a	n/a	n/a	2.66	n/a	J
S06M001102		2-Hexanone	ug/Kg	n/a	<1.72	<1.72	n/a	n/a	n/a	n/a	1.72	n/a	U
S06M001102		2-Pentanone	ug/Kg	n/a	<3.02	<3.02	n/a	n/a	n/a	n/a	3.02	n/a	U
S06M001102		4-Methyl-2-pentanone	ug/Kg	n/a	<1.76	<1.76	n/a	n/a	n/a	n/a	1.76	n/a	U
S06M001102		Acetone	ug/Kg	n/a	<4.38	11.4	n/a	n/a	n/a	n/a	4.38	n/a	J
S06M001102		Benzene	ug/Kg	106	<0.320	<0.320	n/a	n/a	n/a	n/a	0.320	n/a	U
S06M001102		Bromodichloromethane	ug/Kg	n/a	<0.140	<0.140	n/a	n/a	n/a	n/a	0.140	n/a	U
S06M001102		Bromoform	ug/Kg	n/a	<0.360	<0.360	n/a	n/a	n/a	n/a	0.360	n/a	U
S06M001102		Bromomethane	ug/Kg	n/a	<0.980	<0.980	n/a	n/a	n/a	n/a	0.980	n/a	U

J = Estimated result between the EQL and the MDL
U = Result < MDL

NOVEMBER 14, 2006
20061094

VISTA ENG. DNPAL STUDY
Z9 VISTA

Category: R
Customer Group or SDG Number: 20061094
Customer Sample ID: B1KX99
Sample Portion: 20 mL Glass

Sample# R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001102		Carbon Disulfide	ug/Kg	n/a	<0.300	<0.300	n/a	n/a	n/a	n/a	0.300	n/a	U
S06M001102		Carbon Tetrachloride	ug/Kg	n/a	<0.300	<0.300	n/a	n/a	n/a	n/a	0.300	n/a	U
S06M001102		Chlorobenzene	ug/Kg	103	<0.220	<0.220	n/a	n/a	n/a	n/a	0.220	n/a	U
S06M001102		Chloroethane	ug/Kg	n/a	<1.60	<1.60	n/a	n/a	n/a	n/a	1.60	n/a	U
S06M001102		Chloroform	ug/Kg	n/a	<0.180	<0.180	n/a	n/a	n/a	n/a	0.180	n/a	U
S06M001102		Chloromethane	ug/Kg	n/a	<0.620	<0.620	n/a	n/a	n/a	n/a	0.620	n/a	U
S06M001102		Dibromochloromethane	ug/Kg	n/a	<0.260	<0.260	n/a	n/a	n/a	n/a	0.260	n/a	U
S06M001102		Ethylbenzene	ug/Kg	n/a	<0.240	<0.240	n/a	n/a	n/a	n/a	0.240	n/a	U
S06M001102		Methylene Chloride	ug/Kg	n/a	<0.340	<0.340	n/a	n/a	n/a	n/a	0.340	n/a	U
S06M001102		Styrene	ug/Kg	n/a	<0.200	<0.200	n/a	n/a	n/a	n/a	0.200	n/a	U
S06M001102		Tetrachloroethene	ug/Kg	n/a	<0.400	<0.400	n/a	n/a	n/a	n/a	0.400	n/a	U
S06M001102		Tetrahydrofuran	ug/Kg	n/a	<15.6	<15.6	n/a	n/a	n/a	n/a	15.6	n/a	U
S06M001102		Toluene	ug/Kg	107	<0.240	<0.240	n/a	n/a	n/a	n/a	0.240	n/a	U
S06M001102		Total Trihalomethanes	ug/Kg	n/a	<0.920	<0.920	n/a	n/a	n/a	n/a	0.920	n/a	U
S06M001102		Trichloroethene	ug/Kg	102	<0.300	<0.300	n/a	n/a	n/a	n/a	0.300	n/a	U
S06M001102		Vinyl Chloride	ug/Kg	n/a	<0.640	<0.640	n/a	n/a	n/a	n/a	0.640	n/a	U
S06M001102		Xylenes (total)	ug/Kg	n/a	<0.620	<0.620	n/a	n/a	n/a	n/a	0.620	n/a	U
S06M001102		cis-1,3-Dichloropropene	ug/Kg	n/a	<0.240	<0.240	n/a	n/a	n/a	n/a	0.240	n/a	U
S06M001102		trans-1,3-Dichloropropene	ug/Kg	n/a	<0.140	<0.140	n/a	n/a	n/a	n/a	0.140	n/a	U

J = Estimated result between the EQL and the MDL
U = Result < MDL

NOVEMBER 14, 2006
20061094

VISTA ENG. DNPAL STUDY
Z9 VISTA

Category: R
Customer Group or SDG Number: 20061094
Customer Sample ID: B1KXB1
Sample Portion: 20 mL Glass

Sample# R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001106		1,1,1-Trichloroethane	ug/Kg	n/a	<0.200	<0.201	n/a	n/a	n/a	n/a	0.201	n/a	U
S06M001106		1,1,2,2-Tetrachloroethane	ug/Kg	n/a	<0.500	<0.502	n/a	n/a	n/a	n/a	0.502	n/a	U
S06M001106		1,1,2-Trichloroethane	ug/Kg	n/a	<0.380	<0.382	n/a	n/a	n/a	n/a	0.382	n/a	U
S06M001106		1,1-Dichloroethane	ug/Kg	n/a	<0.280	<0.281	n/a	n/a	n/a	n/a	0.281	n/a	U
S06M001106		1,1-Dichloroethene	ug/Kg	108	<0.340	<0.342	n/a	n/a	n/a	108	0.342	n/a	U
S06M001106		1,2-Dichlorobenzene	ug/Kg	n/a	<0.400	<0.402	n/a	n/a	n/a	n/a	0.402	n/a	U
S06M001106		1,2-Dichloroethane	ug/Kg	n/a	<0.180	<0.181	n/a	n/a	n/a	n/a	0.181	n/a	U
S06M001106		1,2-Dichloroethene (cis & trans)	ug/Kg	n/a	<0.600	<0.603	n/a	n/a	n/a	n/a	0.603	n/a	U
S06M001106		1,2-Dichloropropane	ug/Kg	n/a	<0.400	<0.402	n/a	n/a	n/a	n/a	0.402	n/a	U
S06M001106		1,3-Dichlorobenzene	ug/Kg	n/a	<0.320	<0.321	n/a	n/a	n/a	n/a	0.321	n/a	U
S06M001106		1,4-Dichlorobenzene	ug/Kg	n/a	<0.340	<0.342	n/a	n/a	n/a	n/a	0.342	n/a	U
S06M001106		1-Butanol	ug/Kg	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
S06M001106		2-Butanone	ug/Kg	n/a	<2.66	9.12	n/a	n/a	n/a	n/a	2.67	n/a	J
S06M001106		2-Hexanone	ug/Kg	n/a	<1.72	<1.73	n/a	n/a	n/a	n/a	1.73	n/a	U
S06M001106		2-Pentanone	ug/Kg	n/a	<3.02	<3.03	n/a	n/a	n/a	n/a	3.03	n/a	U
S06M001106		4-Methyl-2-pentanone	ug/Kg	n/a	<1.76	<1.77	n/a	n/a	n/a	n/a	1.77	n/a	U
S06M001106		Acetone	ug/Kg	n/a	<4.38	11.6	n/a	n/a	n/a	n/a	4.40	n/a	J
S06M001106		Benzene	ug/Kg	106	<0.320	<0.321	n/a	n/a	n/a	110	0.321	n/a	U
S06M001106		Bromodichloromethane	ug/Kg	n/a	<0.140	<0.141	n/a	n/a	n/a	n/a	0.141	n/a	U
S06M001106		Bromoform	ug/Kg	n/a	<0.360	<0.362	n/a	n/a	n/a	n/a	0.362	n/a	U
S06M001106		Bromomethane	ug/Kg	n/a	<0.980	<0.984	n/a	n/a	n/a	n/a	0.984	n/a	U
S06M001106		Carbon Disulfide	ug/Kg	n/a	<0.300	<0.301	n/a	n/a	n/a	n/a	0.301	n/a	U
S06M001106		Carbon Tetrachloride	ug/Kg	n/a	<0.300	0.804	n/a	n/a	n/a	n/a	0.301	n/a	J
S06M001106		Chlorobenzene	ug/Kg	103	<0.220	<0.221	n/a	n/a	n/a	108	0.221	n/a	U
S06M001106		Chloroethane	ug/Kg	n/a	<1.60	<1.61	n/a	n/a	n/a	n/a	1.61	n/a	U
S06M001106		Chloroform	ug/Kg	n/a	<0.180	0.511	n/a	n/a	n/a	n/a	0.181	n/a	J
S06M001106		Chloromethane	ug/Kg	n/a	<0.620	<0.623	n/a	n/a	n/a	n/a	0.623	n/a	U
S06M001106		Dibromochloromethane	ug/Kg	n/a	<0.260	<0.261	n/a	n/a	n/a	n/a	0.261	n/a	U
S06M001106		Ethylbenzene	ug/Kg	n/a	<0.240	<0.241	n/a	n/a	n/a	n/a	0.241	n/a	U

J = Estimated result between the EQL and the MDL
U = Result < MDL

NOVEMBER 14, 2006
20061094

VISTA ENG. DNPAL STUDY
Z9 VISTA

Category: R
Customer Group or SDG Number: 20061094
Customer Sample ID: B1KXB1
Sample Portion: 20 mL Glass

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001106			Methylene Chloride	ug/Kg	n/a	<0.340	<0.342	n/a	n/a	n/a	n/a	0.342	n/a	U
S06M001106			Styrene	ug/Kg	n/a	<0.200	<0.201	n/a	n/a	n/a	n/a	0.201	n/a	U
S06M001106			Tetrachloroethene	ug/Kg	n/a	<0.400	<0.402	n/a	n/a	n/a	n/a	0.402	n/a	U
S06M001106			Tetrahydrofuran	ug/Kg	n/a	<15.6	<15.6	n/a	n/a	n/a	n/a	15.6	n/a	U
S06M001106			Toluene	ug/Kg	107	<0.240	<0.241	n/a	n/a	n/a	107	0.241	n/a	U
S06M001106			Total Trihalomethanes	ug/Kg	n/a	<0.920	<0.924	n/a	n/a	n/a	n/a	0.924	n/a	U
S06M001106			Trichloroethene	ug/Kg	102	<0.300	<0.301	n/a	n/a	n/a	106	0.301	n/a	U
S06M001106			Vinyl Chloride	ug/Kg	n/a	<0.640	<0.643	n/a	n/a	n/a	n/a	0.643	n/a	U
S06M001106			Xylenes (total)	ug/Kg	n/a	<0.620	<0.623	n/a	n/a	n/a	n/a	0.623	n/a	U
S06M001106			cis-1,3-Dichloropropene	ug/Kg	n/a	<0.240	<0.241	n/a	n/a	n/a	n/a	0.241	n/a	U
S06M001106			trans-1,3-Dichloropropene	ug/Kg	n/a	<0.140	<0.141	n/a	n/a	n/a	n/a	0.141	n/a	U

Sample Portion: Acid Digest

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %	Qual Flags
S06M001108		A	Uranium-233	ug/g	n/a	<1.00E-07	<3.87E-04	n/a	n/a	n/a	n/a	3.87E-04	n/a	U
S06M001108		A	Uranium-234	ug/g	n/a	<5.00E-08	<1.94E-04	n/a	n/a	n/a	n/a	1.94E-04	n/a	U
S06M001108		A	Uranium-235	ug/g	n/a	3.19E-07	7.27E-03	n/a	n/a	n/a	n/a	4.26E-04	n/a	
S06M001108		A	Uranium-236	ug/g	n/a	<4.00E-08	1.56E-04	n/a	n/a	n/a	n/a	1.55E-04	n/a	J
S06M001108		A	Uranium-238	ug/g	103	4.10E-05	1.03	n/a	n/a	n/a	n/a	0.0213	n/a	

J = Estimated result between the EQL and the MDL
U = Result < MDL

NOVEMBER 14, 2006
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Attachment 2

SURROGATE RECOVERIES

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 20061094LIQ

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	LCS	111	118	116	119	0
02	CCB	90	97	98	96	0
03	S06M001104	102	111	101	100	0
04	S06M001104MS	98	108	104	100	0
05	S06M001104MS	99	104	106	106	0
06	S06M001111	95	100	105	102	0
07	S06M001112	100	98	105	106	0
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(70-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(70-130)
SMC3 (TOL)	= Toluene-d8	(70-130)
OTHER (BFB)	= Bromofluorobenzene	(70-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 20061094SOL

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	CCB	102	109	103	104	0
02	LCS	102	115	104	104	0
03	S06M001106	101	106	103	105	0
04	S06M001102	106	117	103	111	0
05	S06M001106MS	112	117	105	108	0
06	S06M001106MS	109	119	102	110	0
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(70-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(70-130)
SMC3 (TOL)	= Toluene-d8	(70-130)
OTHER (BFB)	= Bromofluorobenzene	(70-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

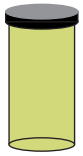
Attachment 3

SAMPLE BREAKDOWN DIAGRAM

Project: Z9 VISTA
Group: 200601094
Customer: MISC

Trip Blank
B1KX31
40 mL VOA Vial(4)

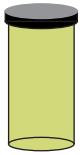
Liquid



S06M001104
VOA 222

Equipment Blank
B1KX28
40 mL VOA Vial(4)

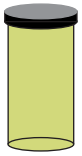
Liquid



S06M001111
VOA 222

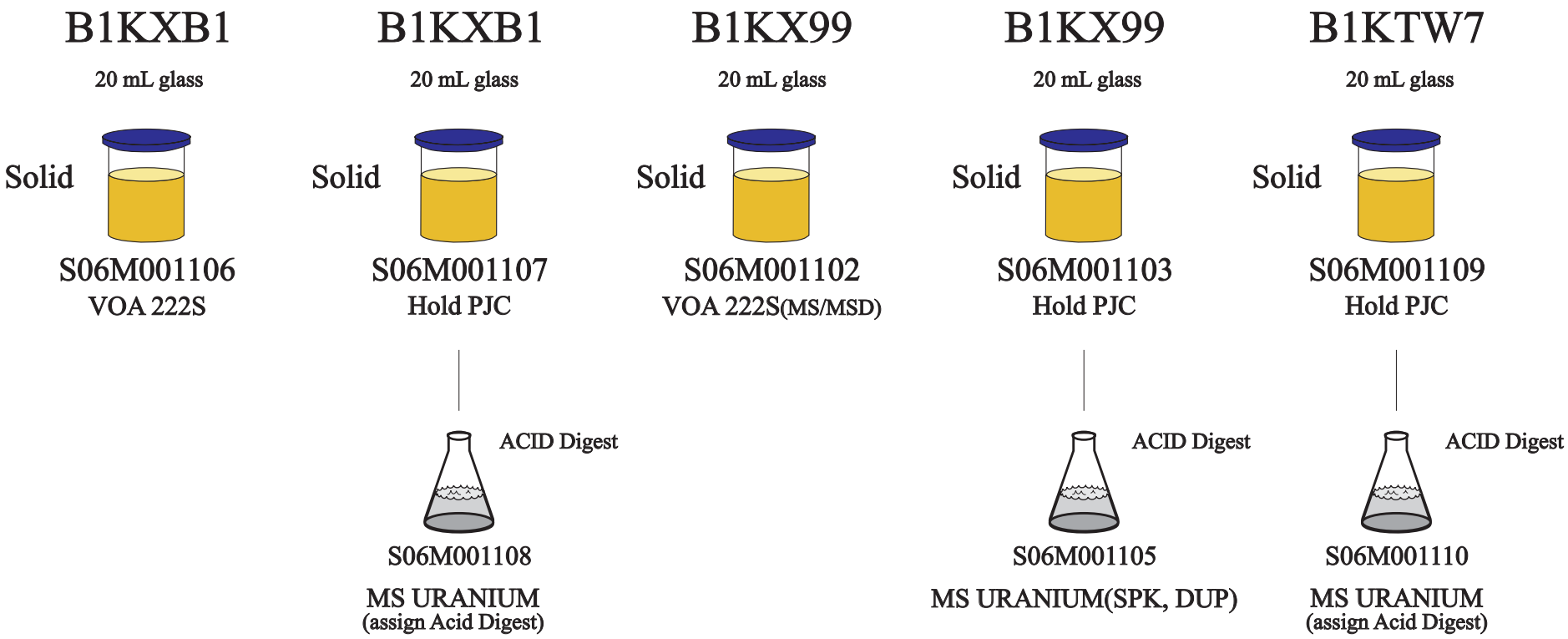
Equipment Blank
B1KTV2
40 mL VOA Vial(4)

Liquid



S06M001112
VOA 222

Project: Z9 VISTA
Group: 200601094
Customer: MISC



Attachment 4

RECEIPT PAPERWORK

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F06-025-023	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
HULSE, KB	BRATTON, W		TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION P67 B 115.5 - 117	**PROJECT DESIGNATION** 216-Z-9, 216-Z-1A, & 216-Z-18 DPT Samples - Vista Engineering DNAPL St		**SAF NO.** F06-025		
ICE CHEST NO. SAWS-371	**FIELD LOGBOOK NO.** DTS-SAWS-H87	**COA** 119305ES10	**METHOD OF SHIPMENT** ~~FEDERAL EXPRESS~~ Gov. Vehicle		
SHIPPED TO ~~Severn Trent St. Louis~~ 222-S Lab	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1KTV2	S06M001112	W	10/6/06	0745	4X40mL aGs*	VOA - 8260B (TCL);	HCl or H2SO4 to pH <2/Cool 4C

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
KB Hulse KB Hulse	10/25/06 1415	R H Steele R H Steele	10/25/06 1415	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

NOVEMBER 14, 2006
20061094

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F06-007-071	PAGE 1 OF 1

COLLECTOR HULSE, KB	**COMPANY CONTACT** BRATTON, W	**TELEPHONE NO.**	**PROJECT COORDINATOR** TRENT, SJ
PRICE CODE 8N	**DATA TURNAROUND** 45 Days / 45 Days	**AIR QUALITY** ☐	
SAMPLING LOCATION P67 B 115.5 - 117	**PROJECT DESIGNATION** 216-Z-9, 216-Z-1A, & 216-Z-18 DPT Samples - Vista Engineering DNAPL S		**SAF NO.** F06-007
ICE CHEST NO. SAWS-371	**FIELD LOGBOOK NO.** DTS-SAWS-H87	**COA** 119305ES10	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE
SHIPPED TO 222-S Lab Operations	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.**

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE
RAD Screen B1KTW8

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1KTW7	SD6M001109	S	10/6/06	0822	1X20mL G/P	~~Americium-241; Isotopic Plutonium~~; Isotopic Uranium; 45.0 10/25/06 GPR	None

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM Fluor Hanford K. B. HULSE	DATE/TIME 10/25/06	RECEIVED BY/STORED IN R H Steele	DATE/TIME 10/25/06 1415	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	**RECEIVED BY**	**TITLE**	**DATE/TIME**
FINAL SAMPLE DISPOSITION	**DISPOSAL METHOD**	**DISPOSED BY**	**DATE/TIME**

NOVEMBER 14, 2006
20061094

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F06-025-030	PAGE 1 OF 1

COLLECTOR HULSE, KB	**COMPANY CONTACT** BRATTON, W	**TELEPHONE NO.**	**PROJECT COORDINATOR** TRENT, SJ
PRICE CODE 7N	**DATA TURNAROUND** 45 Days / 45 Days	**AIR QUALITY** ☐	
SAMPLING LOCATION P66 B 112' - 114' Equip	**PROJECT DESIGNATION** 216-Z-9, 216-Z-1A, & 216-Z-18 DPT Samples - Vista Engineering DNAPL St	**SAF NO.** F06-025	
ICE CHEST NO. SAWS-371	**FIELD LOGBOOK NO.** DTS-SAWS-H87	**COA** 119305ES10	**METHOD OF SHIPMENT** ~~FEDERAL EXPRESS~~ Gov. Vehicle
SHIPPED TO ~~Severn Trent St. Louis~~ 222-S 10-25-06	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1KX28	S06M001111	W	10-17-06	0910	4X40mL aGs*	VOA - 8260B (TCL);	HCl or H2SO4 to pH <2/Cool 4C

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
KB Hulse KB Hulse	10/25/06	RtSteele RtSteele	10/25/06 1415	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

NOVEMBER 14, 2006
20061094

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F06-025-033	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7O	DATA TURNAROUND
HULSE, KB	BRATTON, W		TRENT, SJ	AIR QUALITY ☐	60 Days / 60 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
P66 B TRIP	216-Z-9, 216-Z-1A, & 216-Z-18 DPT Samples - Vista Engineering DNAPL St		F06-025		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SAWS-371	DTS-SAWS-H87	119305ES10	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations					

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1KX31	S06M001104	W	10-24-06	1230	4X40mL aGs*	VOA - 8260B - COMPLETE;	HCl or H2SO4 to pH <2/Cool 4C

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
KB Hulse	10/25/06 1415	R Steele	10/25/06 1415	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

NOVEMBER 14, 2006
20061094

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F06-007-084	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
HULSE, KB	BRATTON, W		TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
P66 B 112 - 114	216-Z-9, 216-Z-1A, & 216-Z-18 DPT Samples - Vista Engineering DNAPL S		F06-007		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
SAWS-371	DTS-SAWS-H87	119305ES10	~~FEDERAL EXPRESS~~ Gov. Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A				

MATRIX*
OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE
RAD Screen B1KX98 and B1KXB0

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B1KX99	S06M001103	S	10/17/06	0940	1X20mL G/P	~~Americium-241; Isotopic Plutonium~~; Isotopic Uranium; 16.6 GPR 10/25/06	None
B1KX99	S06M001102	S	↓	↓	1X20mL aG	VOA - 8260B - COMPLETE; 37.6	Cool 4C
B1KXB1	S06M001107	S	↓	↓	1X20mL G/P	~~Americium-241; Isotopic Plutonium~~; Isotopic Uranium; 12.6 GPR 10/25/06	None
B1KXB1	S06M001106	S	↓	↓	1X20mL aG	VOA - 8260B - COMPLETE; 38.5	Cool 4C

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
Fluor Hanford K. B. HULSE [signature]	10/25/06	[signature] R T Steele	10/25/06 1915	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

NOVEMBER 14, 2006
20061094

Group #: 2006 1094

222-S Laboratory
Sample Receipt and Chain of Custody Verification Checklist

COC #: _____ Date Samples Received: 10/25/06

Customer Project Name: 29 Vista Number of Samples: 6

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA or COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete	✓		
Check that outer custody seal is intact, if present	✓		~~4°C~~ GPR 10/26/06
Record cooler temperature, as appropriate	4°C ✓		☐ check if no cooler & no ice
Samples are intact & in good condition	✓		If no, provide comments on back
Verify that COC or RSA is accurate & complete, containing the following information:			
• Client name & client sample number	✓		
• Date & time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Sample preservation, as appropriate	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing & receiving samples	✓		
• Date & time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		

Notify the PC immediately if any problems are noted.

PC to Complete:

Samples acceptable for release? yes PC Initials [illegible] Date 10/25/06

If no, comment on communication and resolution:

Alpha worksheets signed & distributed

Version 5/23/06

GENERATOR KNOWLEDGE INFORMATION

F06-025-030 F06-007-084 F06-025-023 B1KX28 B1KTW7 B1KTV2 B1KXB2

1. Chain of Custody Number F06-007-071 CACN/COA VET PO Customer Identification Number B1KX99

2. List generator knowledge or description of process that produced sample. Or list description of sample source:

MSDS Available? (X) No ( ) Yes Hanford MSDS No. _____

3. List all waste codes and constituents associated with the waste or media that was sampled, regardless of CERCLA status.

a) Does the sample contain any of the following listed waste codes?

By checking "unknown" the customer understands that no knowledge is available following a careful search.

	List Federal Waste Code(s):	List Constituent(s):			
P Codes:			( ) Yes	(X) No	( ) Unknown
U Codes:			( ) Yes	(X) No	( ) Unknown
K Codes:			( ) Yes	(X) No	( ) Unknown
F Codes:	F001	Carbontet	(X) Yes	( ) No	( ) Unknown

b) List applicable characteristic waste codes, flash point, pH, constituents, and concentrations as appropriate.

D001:	[ ] FP <100°F	[ ] FP ≥100 <140°F	[ ] DOT Oxidizer	( ) Yes	(X) No	( ) Unknown
D002:	[ ] pH ≤2	[ ] pH ≥12.5	[ ] Solid Corrosive (WSC2)	( ) Yes	(X) No	( ) Unknown
D003:	[ ] Cyanide	[ ] Sulfide	[ ] Water Reactive	[ ] Other _____	( ) Yes	(X) No	( ) Unknown
D004-D043 (Identify applicable waste codes and concentrations):				(i.e., peroxide former, explosive, air reactive)	( ) Yes	(X) No	( ) Unknown

c) If characteristic, list any known underlying hazardous constituents (UHCs) reasonably expected to be present, and their concentrations that may be present above the LDR treatment standard (40 CFR 268.48):

d) List any known Land Disposal Restrictions (LDR) subcategories, if applicable (40 CFR 268.40):

e) List any applicable Washington State dangerous waste codes: (not required if federally regulated)

WT01:	( ) Yes	(X) No	( ) Unknown
WT02:	( ) Yes	(X) No	( ) Unknown
WO01:	( ) Yes	(X) No	( ) Unknown

List constituents and concentrations:

(*State mixture rule for ignitability)

WP01:	( ) Yes	(X) No	( ) Unknown
WP02:	( ) Yes	(X) No	( ) Unknown
WP03:	( ) Yes	(X) No	( ) Unknown
F003:*	( ) Yes	(X) No	( ) Unknown

4. Is this material TSCA regulated for PCBs? ( ) Yes (X) No ( ) Unknown ( ) Analysis Requested

List concentration if applicable: _____

If yes, what is the source of the PCBs? (see TSCA PCB Hanford Site User Guide, DOE/RL-2001-50)

[ ] PCB Liquid Waste [ ] PCB Bulk Product Waste [ ] PCB Transformer ≥500 ppm [ ] Unknown
[ ] PCB Remediation Waste [ ] PCB R&D Waste [ ] PCB contaminated electrical equipment (capacitor/ballast) <500 ppm
[ ] PCB Spill Material [ ] PCB Item [ ] Other PCB Waste (list) _____

5. Is this material TRU? ( ) Yes ( ) No (X) Unknown

6 ACCURACY OF INFORMATION

Based on my inquiry of those individuals immediately responsible for obtaining this information, that to the best of my knowledge, the information entered in this document is true, accurate, and complete.

Print & Sign Rochelle Holm Rochelle Holm Date 10/25/06

Attachment 5

CORRESPONDENCE

Ritenour, Gerald P

From: Rochelle Holm [holm@vistaengr.com]
Sent: Wednesday, October 25, 2006 8:16 AM
To: Ritenour, Gerald P
Cc: Wes Bratton; Hulse, Karl B
Subject: three samples to 222-S

Hi JR,
Vista will be sending the following three samples to 222-S shortly for analysis. Vista would like the following samples analyzed:

B1KX98/B1KX99 – VOC and Uranium by ICP

(Taken 10/17/06)

B1KXB0/B1KXB1 – VOC and Uranium by ICP

(Taken 10/17/06)

B1KTW8/B1KTW7 – Uranium by ICP

(Taken 10/6/06)

Rochelle