

October 9, 2006

U.S. Fish and Wildlife Service  
911 NE 11<sup>th</sup> Avenue  
Portland, Oregon 97232

Attention: Dan Forney

Subject: Report on Soil Excavation and Disposal  
San Pablo Bay National Wildlife Refuge – Cullinan Ranch  
San Pablo Bay, California  
File No. 0758-137-00

## INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) is pleased to submit this letter report to the U.S. Fish and Wildlife Service (FWS) documenting the removal and disposal of zinc-contaminated soils from the San Pablo Bay National Wildlife Refuge – Cullinan Ranch site near San Pablo Bay, California (site). The project work was completed in accordance with the terms of General Services Administration (GSA) Contract GS-10F-0342K and under Delivery Order #101906031, issued on January 25, 2006.

## BACKGROUND

The Cullinan Ranch site is located in a former tidal flat west of the Napa River along the northern shore of San Pablo Bay (Figure 1). The area addressed in this remedial effort is associated with a former pole barn that was approximately 160 feet in length by 60 feet wide. During a previous environmental investigation (Tetra Tech, 2003), it was determined that the soils along the drip line of the pole barn roof contain elevated concentrations of zinc (up to 1,500 milligrams per kilogram [mg/kg]) that required removal prior to the planned flooding of the site.

## PROJECT CRITERIA

Project remediation goals were identified during an earlier environmental investigation (Tetra Tech, 2003) and described in the FWS Statement of Work dated December 1, 2005 as the San Francisco Bay Ambient Sediment Concentrations. Specifically, the zinc concentration used as remedial criterion (410 mg/kg) is the concentration identified in a 1997 study conducted by the San Francisco Estuary Institute (SFEI) (SFEI, 1997) as the “Effects Range – Median” concentration (ERM, or ER-M). The ERM value was defined by SFEI as “...concentration equivalent to the 50<sup>th</sup> percentile of the compiled study data. Sediment concentrations above the ERM are ‘frequently’ associated with adverse effects.” Tetra Tech’s 2003 report also qualifies this value as applicable to the pole barn area as follows: “It should be noted that the Wetland Surface and Foundation Material Concentrations are based on San Francisco Bay Ambient Sediment Concentrations and ER-M values, respectively; therefore, concentrations that exceeded one criteria usually exceeded corresponding criteria as well (Table 3).” (Tetra Tech, 2003).

## FIELD ACTIVITIES AND CHEMICAL ANALYTICAL RESULTS

On July 19, 2006 GeoEngineers directed the removal and disposal of 34.86 tons of zinc-contaminated soil from the site. GeoEngineers subcontracted General Environmental Management, Inc. (GEM) to complete the excavating and waste hauling activities. Excavated soils were disposed at Keller Canyon Landfill in Pittsburg, California. Disposal documentation is contained in Attachment A. The area of soil removal targeted the drip lines of the former pole barn roof, as shown in Figure 2. The former pole barn roof was situated such that water shed from the west and east sides of the building. Following excavation, GeoEngineers field personnel collected ten confirmatory soil samples (PB-1 through PB-10) from the base of the excavated areas (Figure 2). Soil samples collected on July 19 and September 9, 2006 were submitted to the analytical laboratory for analysis of total zinc by Environmental Protection Agency (EPA) Method 6020. Soil sample chemical analytical results are summarized in Table 1 and shown in Figure 2. Laboratory analytical reports are contained in Attachment B. July 2006 soil samples PB-1 through PB-10 contained zinc concentrations between 87.3 mg/kg and 3,680 mg/kg. Soil sample PB-3 (3,680 mg/kg) exceeded the project remedial criteria.

GeoEngineers returned to the site on September 9, 2006 to complete over-excavation of the area between soil sample locations PB-2 and PB-4. GeoEngineers directed the over-excavation of an additional 15.83 tons of soil in this area (Figure 2). Over-excavation and waste hauling activities on September 9, 2006 were completed by NRC Environmental Services, Inc. One confirmatory soil sample PB-3A (2.5) was collected immediately below the original PB-3 sample location following the excavation, and submitted to the analytical laboratory. Soil sample PB-3A (2.5) contained zinc at a concentration of 105 mg/kg.

## CONCLUSIONS

GeoEngineers directed the excavation and offsite disposal of approximately 50.7 tons of zinc-contaminated soils between July 19 and September 9, 2006. The results of confirmatory soil sampling indicate that the impacted site soils have been removed in a manner consistent with project remedial goals.

## REFERENCES

- San Francisco Estuary Institute, 1997. "Ambient Concentrations of Toxic Chemicals in San Francisco Bay Sediments: Summary. Table, 4.5, Sediment Thresholds. Data accessed via internet on 09/28/2006. <http://www.sfei.org/rmp/1997/tables/t04-05.htm>
- Tetra Tech EM, Inc. "Cullinan Ranch Contaminant Sampling Report, Vellejo, California" Contract Number GS-10F-0076K, Order Number 11640-3-MO83A. November 2003.

We appreciate the opportunity to assist the FWS on this project. Please call if you have questions regarding this report.

Yours very truly,

GeoEngineers, Inc.



Joey Hickey  
Project Manager



Sean K. Ragain  
Senior Principal

JFH:SKR:glb  
Document ID: P:\0758137\00\Finals\075813700R.doc

**Attachments:** Table 1. Summary of Soil Sample Chemical Analytical Data, Total Metals in Soil  
Figure 1. Vicinity Map  
Figure 2. Excavation and Soil Sampling Results  
Attachment A – Waste Disposal Documentation  
Attachment B – Chemical Analytical Data  
Attachment C – Site Photographs

**Disclaimer:** Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

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**TABLE 1**  
**SUMMARY OF SOIL SAMPLE CHEMICAL ANALYTICAL DATA<sup>1</sup>**  
**TOTAL METALS IN SOIL**  
 USFWS - SAN PABLO BAY NWR, CULLINAN RANCH  
 SAN PABLO BAY, CA

Sample Identification	Date Sampled	Sample Depth (feet bgs)	Total Zinc (EPA Method 8020) (mg/kg)
<b>July 2006 Confirmatory Soil Samples</b>			
PB-1	07/19/06	1.0	<b>87.3</b>
PB-2	07/19/06	1.0	<b>260</b>
PB-3 <sup>2</sup>	07/19/06	1.0	<b>3,680</b>
PB-4	07/19/06	1.0	<b>147</b>
PB-5	07/19/06	1.0	<b>167</b>
PB-6	07/19/06	1.0	<b>93.5</b>
PB-7	07/19/06	1.0	<b>148</b>
PB-8	07/19/06	1.0	<b>182</b>
PB-9	07/19/06	1.0	<b>135</b>
PB-10	07/19/06	1.0	<b>209</b>
<b>September 2006 Confirmatory Soil Samples</b>			
PB-3A (2.5)	09/07/06	2.5	<b>106</b>
<b>Applicable Screening Value<sup>3</sup> (mg/kg)</b>			
Zinc		<b>410</b>	

**Notes:**

<sup>1</sup> Chemical analyses conducted by North Creek Analytical of Beaverton, Oregon.

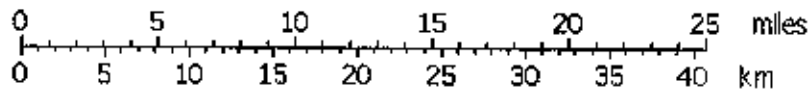
<sup>2</sup> Soil sample location subsequently removed during additional excavation activities.

<sup>3</sup> Value represents the Median Effects Range as published in "Ambient Concentrations of Toxic Chemicals in San Francisco Bay Sediments, San Francisco Bay Regional Water Quality Control Board, 1997.

bgs = below ground surface  
 mg/kg = milligrams per kilogram  
 Bold indicates analyte detection.



**NATIONAL GEOGRAPHIC**



TN MN

15°

10/02/06

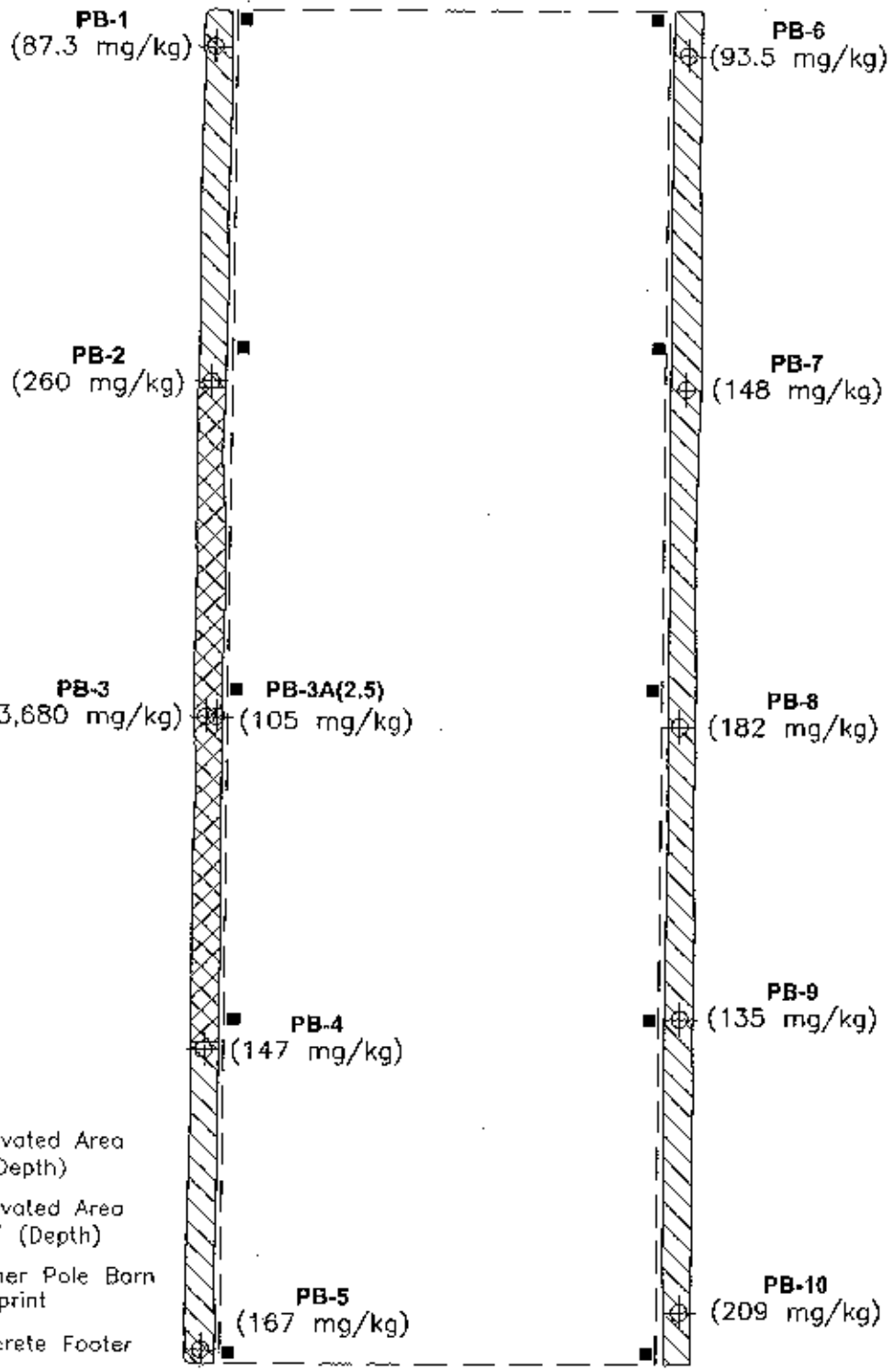
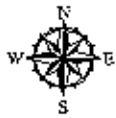
Vicinity Map

USFWS  
San Pablo Bay, California






**GEOENGINEERS**


Figure 1

483




**Legend:**

-  Excavated Area 1' (Depth)
-  Excavated Area 2-3' (Depth)
-  Former Pole Barn Footprint
-  Concrete Footer
-  Soil Sample

PB-1  Soil Sample  
(87.3 mg/kg)  
Zinc Concentration  
Milligrams per Kilogram

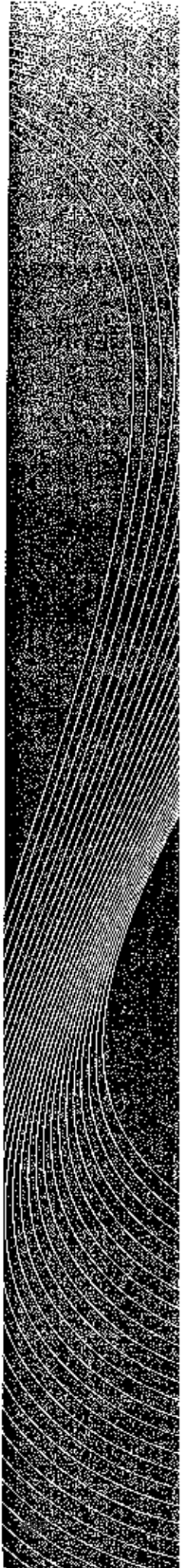


<b>Excavation and Soil Sampling Results</b>	
USFWS San Pablo Bay, California	
<b>GEOENGINEERS</b> 	<b>Figure 2</b>

P:\0075813\001\CAD\075913700F2.dwg EHZ:MMWJ 10/02/06



**ATTACHMENT A**  
**WASTE DISPOSAL DOCUMENTATION**



KELLER CANYON LANDFILL  
 901 BAYLEY ROAD  
 PITTSBURG, CA

674855  
 General Environmental Management Inc  
 3191 Temple Av Ste 200  
 Concord, CA 94528  
 Contract: 81260880

SITE	TICKET	GRID
01	841907	
WEIGHMASTER		
SELIFE C		
DATE IN	TIME IN	
2 September 2004	1:42 PM	
DATE OUT	TIME OUT	
2 September 2004	2:14 PM	
VEHICLE	PLATE	WGT OFF
71235	VAL 500	

Gross Weight 67,460.00 lb      Inbound - SCALE TICKET  
 Stored Tare Weight 35,800.00 lb  
 Net Weight 31,660.00 lb 15.53 TN

QTY	UNIT	DESCRIPTION	CHARGE	TAX	TOTAL
15.53	TN	SPECIAL WASTE			
1.00	LD	ENVIRONMENTAL FEE			
1.00	LD	FUEL RECOVERY FEE			

TOTAL AMOUNT
TENDERED
CHANGE
CHECK NO.

SIGNATURE *Janna O Mills*



**Sanitary Landfill**  
 901 Bailey Road  
 Pittsburg, CA 94565  
 Phone (925) 458-9800  
 Fax (925) 458-9891

**Sanitary Landfill**  
 12310 San Mateo Road  
 Half Moon Bay, CA 94019  
 Phone (650) 726-1819  
 Fax (650) 726-9183

**Sanitary Landfill**  
 1601 Dixon Landing Road  
 Milpitas, CA 95035  
 Phone (408) 945-2800  
 Fax (408) 262-2871

**Landfill**  
 9999 S. Austin Road  
 Manteca, CA 95236  
 Phone (209) 982-4298  
 Fax (209) 982-1000

**NON-HAZARDOUS WASTE MANIFEST**

GENERATOR <i>15 Fish Wildlife Service Cullman Ranch</i>		WASTE ACCEPTANCE NO. <i>SWAC-212712823</i>	
MAILING ADDRESS <i>Lat. 38.0730 Long 122.180</i>		REQUIRED PERSONAL PROTECTIVE EQUIPMENT <input type="checkbox"/> GLOVES <input type="checkbox"/> GOGGLES <input type="checkbox"/> RESPIRATOR <input type="checkbox"/> HARD HAT <input type="checkbox"/> COVER <input type="checkbox"/> OTHER	
CITY, STATE, ZIP <i>Vallejo, CA 94592</i>		SPECIAL HANDLING PROCEDURES	
PHONE <i>707-769-9200</i>			
CONTACT PERSON <i>Christy Smith</i>			
SIGNATURE OF AUTHORIZED AGENT / TITLE <i>* Christy Smith</i>		DATE <i>9/7/06</i>	
GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or by 22 of the California Code of Regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations. AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.		RECEIVING FACILITY <i>JBLD 831 Road</i>	
WASTE TYPE <input type="checkbox"/> DISPOSAL <i>Soil</i> <input type="checkbox"/> SLUDGE <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> WOOD <input type="checkbox"/> DEBRIS <input type="checkbox"/> OTHER <input type="checkbox"/> SPECIAL WASTE			
GENERATING FACILITY			
TRANSPORTER <i>NRE Environmental Services</i>		NOTES: VEHICLE LICENSE NUMBER <i>9B94827</i> TRUCK NUMBER <i>2089</i>	
ADDRESS <i>Woods Ferry Point</i>			
CITY, STATE, ZIP <i>ALAMEDA CA 94501</i>			
PHONE <i>510-749-1340</i>		END DUMP <input type="checkbox"/> BOTTOM DUMP <input type="checkbox"/> TRANSFER <input type="checkbox"/>	
SIGNATURE OF AUTHORIZED AGENT OR DRIVER <i>* Dennis D Miller</i>		DATE <i>9/7/06</i>	
REMARKS		CUBIC YARDS <i>2.0</i>	
FACILITY TICKET NUMBER		DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)	
SIGNATURE OF AUTHORIZED AGENT <i>* [Signature]</i>		DATE <i>9/7/06</i>	
		<input checked="" type="checkbox"/> DISPOSE	
		<input type="checkbox"/> OTHER	
		<input type="checkbox"/> SOIL	
		<input type="checkbox"/> CONSTRUCTION DEBRIS	
		<input type="checkbox"/> NON-FRIABLE ASBESTOS	
		<input type="checkbox"/> WOOD	
		<input type="checkbox"/> ASH	
		<input type="checkbox"/> SPECIAL OTHER	

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

MANIFEST # 71235

090621

KELLER CANYON LANDFILL  
701 BAILEY ROAD  
PITTSBURG, CA

002428  
GENERAL ENVIRONMENTAL MSMT.  
P.O. BOX 8282

PITTSBURG, CA 94565  
Contract: #212Y68828

SITE	TICKET	DRID
01	338369	WEIGHMASTER
FELIPE C		
DATE IN	TIME IN	
27 July 2006	4:06 PM	
DATE OUT	TIME OUT	
27 July 2006	4:06 PM	
VEHICLE	ROLL OFF	
ED117054		
REFERENCE	ORIGIN	
		VALLEJO

Inbound - SCALE TICKET

00	Gross Weight	80,460.00 lb
	Stored Tare Weight	43,020.00 lb
	Net Weight	37,440.00 lb 18.72 TN

UNIT	DESCRIPTION	DATE	EXTENSION	TAX	TOTAL
18.72 TN	SPECIAL WASTE ENVIRONMENTAL FEE				
1.00 LD	FUEL RECOVERY FEE				
1.00 LD					

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

SIGNATURE

090475

SITE	TICKET	GRID
01	333223	WEIGHMASTER
FELIPE C		
DATE IN	DATE OUT	TIME IN
27 July 2006	27 July 2006	9:35 AM
DATE OUT	DATE OUT	TIME OUT
27 July 2006	27 July 2006	10:32 AM
VEHICLE	REFERENCE	ORIGIN
FC117054	63224	VALLEJO

RELLER CANYON LANDFILL  
 701 BAILEY ROAD  
 PITTSBURG, CA

002428  
 GENERAL ENVIRONMENTAL MGMT.  
 P.O. BOX 8282

PITTSBURG, CA 94565  
 Contract: #212Y68828

Inbound - SCALE TICKET

01 Gross Weight 75,200.00 lb  
 Stored Tare Weight 43,020.00 lb  
 Net Weight 32,280.00 lb 16.14 TN

UNIT	RATE	EXTENSION	TAX	TOTAL
16.14 TN				
1.00 LD				
1.00 LD				
SPECIAL WASTE ENVIRONMENTAL FEE				
FUEL RECOVERY FEE				

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

*[Handwritten Signature]*  
 SIGNATURE

# NON-HAZARDOUS WASTE MANIFEST

75300

Please print or type (Form designed for use on site (12 point) typewriter)

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. <b>CA L 0 0 0 3 0 7 6 3 4</b>		Manifest Document No. <b>6 3 2 2 4</b>	2. Page 1 of
3. Generator's Name and Mailing Address <b>Cullinan Ranch Lat. 38.0730 Long 122.180 Vallejo, CA 94502</b>		4. Generator's Phone <b>707-4769-4200</b>		Attn: <b>Christy Smith</b>	
5. Transporter 1 Company Name <b>Ecology Control Industries</b>		6. US EPA ID Number <b>CA 0 9 8 2 0 3 0 1 7 3</b>		A. State Transporter's ID	
7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter 1 Phone <b>510-235-1393</b>	
9. Designated Facility Name and Site Address <b>Allied Waste Industries Inc. 901 Bailey Road Pittsburg, CA 94565</b>		10. US EPA ID Number		C. State Transporter's ID	
				D. Transporter 2 Phone	
				E. State Facility's ID	
				F. Facility's Phone <b>925 458 9800</b>	
11. WASTE DESCRIPTION  a. <b>Non hazardous solid (soil w/ trace metals)</b>			12. Containers No.	13. Total Quantity	14. U.S. Wt./Vol.
			<b>02</b>	<b>CM 030</b>	
b. <b>SWIC # 212468828</b>					
c. <b>Truck # EC1 17054</b>					
15. Special Handling Instructions and Additional Information <b>Emergency Phone: (800) 326-1011 (for GEN)</b>			H. Handling Codes for Wastes Listed Above		
			<b>ECI Job # 5745168</b>		
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.					
Printed/Typed Name <b>Christy Smith</b>		Signature <i>[Signature]</i>		Date <b>7/11/03</b>	
17. Transporter 1 Acknowledgement of Receipt of Materials					
Printed/Typed Name <b>[Name]</b>		Signature <i>[Signature]</i>		Date <b>7/11/03</b>	
18. Transporter 2 Acknowledgement of Receipt of Materials					
Printed/Typed Name		Signature		Date	
19. Discrepancy Indication Space					
20. Facility Owner or Operator Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.					
Printed/Typed Name		Signature		Date	

NON-HAZARDOUS WASTE



# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on 4116 (12 pitch) typewriter)

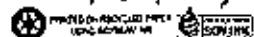
<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. <b>CA1000307634</b>		Manifest Document No. <b>63225</b>	2. Page 1 of 1
3. Generator's Name and Mailing Address <b>Cullinan Ranch Lat. 38.0730 Long 122.180 Vallejo, CA 94592</b>					
4. Generator's Phone <b>707-769-4200</b>				EPA Contact <b>Christy Smith</b>	
5. Transporter 1 Company Name <b>Ecology Control Industries</b>		6. US EPA ID Number <b>CA0982030173</b>		A. State Transporter's ID	
7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter 1 Phone <b>530-235-1393</b>	
9. Designated Facility Name and Site Address <b>Allied Waste Industries Inc. 901 Bailey Road Pittsburg, CA 94565</b>		10. US EPA ID Number		C. State Transporter's ID	
				D. Transporter 2 Phone	
				E. State Facility's ID	
				F. Facility's Phone <b>925 458 9800</b>	
11. WASTE DESCRIPTION  a. <b>Non hazardous solid (soil w/ trace metals)</b>				8. Containers	
				No. Type	
				13. Total Quantity	
				14. Unit (kg, Vol, etc.)	
				Y	
b. <b>SOIL # 212468828</b>					
c. <b>TRUCK # ECL 17054</b>					
d. <b>11. a.</b>				H. Handling Codes for Wastes Listed Above	
15. Special Handling Instructions and Additional Information <b>Emergency Phone: (800) 326-1011 (for GEM)</b> <b>419 430</b>				<b>ECL TO BITE 5245168</b>	
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.					
Printed/Typed Name <b>Christy Smith</b>		Signature <i>[Signature]</i>		Date <b>7/19/06</b>	
17. Transporter 1 Acknowledgement of Receipt of Materials					
Printed/Typed Name <b>[Signature]</b>		Signature <i>[Signature]</i>		Date <b>7/19/06</b>	
18. Transporter 2 Acknowledgement of Receipt of Materials					
Printed/Typed Name		Signature		Date	
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 18.					
Printed/Typed Name <b>FLUKE (ORNE) D</b>		Signature <i>[Signature]</i>		Date <b>07/19/07</b>	

NON-HAZARDOUS WASTE

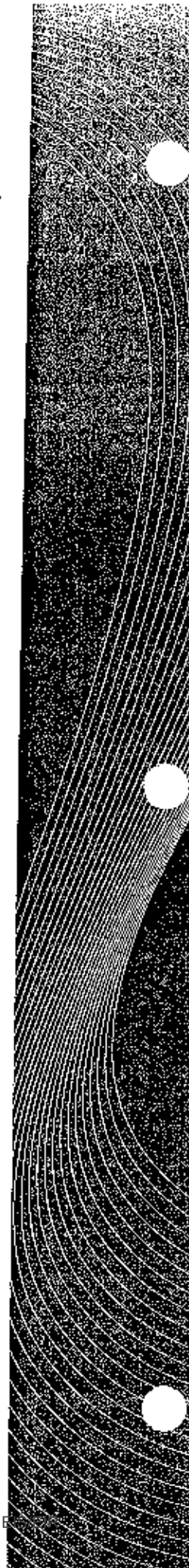
GENERATOR

TRANSPORTER

FACILITY



**ATTACHMENT B**  
**CHEMICAL ANALYTICAL DATA**



August 11, 2006

Joey Hickey  
GeoEngineers, Inc.  
15055 SW Sequoia Parkway, Suite 140  
Portland, OR 97224

RE: USFWS-Cullinan Ranch

Enclosed are the results of analyses for samples received by the laboratory on 07/20/06 10:50.  
The following list is a summary of the Work Orders contained in this report, generated on 08/11/06  
17:45.

If you have any questions concerning this report, please feel free to contact me.

<u>Work Order</u>	<u>Project</u>	<u>ProjectNumber</u>
PPG0778	USFWS-Cullinan Ranch	0758-137-00



<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	Project Name:	<b>USFWS-Cullinan Ranch</b>	Report Created:
	Project Number:	0759-137-00	08/11/06 17:45
	Project Manager:	Joey Hickey	

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PB-1	PPG0778-01	Soil	07/19/06 09:40	07/20/06 10:50
PB-2	PPG0778-02	Soil	07/19/06 10:00	07/20/06 10:50
PB-3	PPG0778-03	Soil	07/19/06 10:40	07/20/06 10:50
PB-4	PPG0778-04	Soil	07/19/06 10:55	07/20/06 10:50
PB-5	PPG0778-05	Soil	07/19/06 11:05	07/20/06 10:50
PB-6	PPG0778-06	Soil	07/19/06 12:35	07/20/06 10:50
PB-7	PPG0778-07	Soil	07/19/06 13:20	07/20/06 10:50
PB-8	PPG0778-08	Soil	07/19/06 13:30	07/20/06 10:50
PB-9	PPG0778-09	Soil	07/19/06 13:45	07/20/06 10:50
PB-10	PPG0778-10	Soil	07/19/06 13:55	07/20/06 10:50

*Sarah Rockwell*

Sarah Rockwell, Project Manager





<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	<b>Project Name:</b> USFWS-Cullinan Ranch <b>Project Number:</b> 0758-137-00 <b>Project Manager:</b> Joey Hickey	<b>Report Created:</b> 08/11/06 17:45
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**Total Metals per EPA 6000/7000 Series Methods**  
 TestAmerica - Portland, OR

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PPG0778-01 (PB-1)</b>		<b>Soil</b>			<b>Sampled: 07/19/06 09:40</b>					
Zinc	EPA 6020	87.3	—	2.16	mg/kg dry	1x	6070924	07/22/06 12:06	08/04/06 17:03	
<b>PPG0778-02 (PB-2)</b>		<b>Soil</b>			<b>Sampled: 07/19/06 10:00</b>					
Zinc	EPA 6020	260	—	2.19	mg/kg dry	1x	6070924	07/22/06 12:06	08/04/06 17:10	
<b>PPG0778-03 (PB-3)</b>		<b>Soil</b>			<b>Sampled: 07/19/06 10:40</b>					
Zinc	EPA 6020	3680	—	22.6	mg/kg dry	10x	6070924	07/22/06 12:06	08/04/06 17:18	R-02
<b>PPG0778-04 (PB-4)</b>		<b>Soil</b>			<b>Sampled: 07/19/06 10:55</b>					
Zinc	EPA 6020	147	—	2.24	mg/kg dry	1x	6070924	07/22/06 12:06	08/04/06 17:47	
<b>PPG0778-05 (PB-5)</b>		<b>Soil</b>			<b>Sampled: 07/19/06 11:05</b>					
Zinc	EPA 6020	167	—	2.15	mg/kg dry	1x	6070924	07/22/06 12:06	08/04/06 17:35	
<b>PPG0778-06 (PB-6)</b>		<b>Soil</b>			<b>Sampled: 07/19/06 12:35</b>					
Zinc	EPA 6020	93.5	—	2.34	mg/kg dry	1x	6070924	07/22/06 12:06	08/04/06 18:02	
<b>PPG0778-07 (PB-7)</b>		<b>Soil</b>			<b>Sampled: 07/19/06 13:20</b>					
Zinc	EPA 6020	148	—	2.21	mg/kg dry	1x	6070924	07/22/06 12:06	08/05/06 03:21	
<b>PPG0778-08 (PB-8)</b>		<b>Soil</b>			<b>Sampled: 07/19/06 13:30</b>					
Zinc	EPA 6020	182	—	2.18	mg/kg dry	1x	6070924	07/22/06 12:06	08/04/06 18:17	
<b>PPG0778-09 (PB-9)</b>		<b>Soil</b>			<b>Sampled: 07/19/06 13:45</b>					
Zinc	EPA 6020	135	—	2.20	mg/kg dry	1x	6070924	07/22/06 12:06	08/04/06 18:24	
<b>PPG0778-10 (PB-10)</b>		<b>Soil</b>			<b>Sampled: 07/19/06 13:55</b>					
Zinc	EPA 6020	209	—	2.27	mg/kg dry	1x	6070924	07/22/06 12:06	08/04/06 18:31	

TestAmerica - Portland, OR

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Sarah Rockwell*

Sarah Rockwell, Project Manager



<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	Project Name: <b>USFWS-Cullinan Ranch</b> Project Number: <b>0758-137-00</b> Project Manager: <b>Joey Hickey</b>	Report Created: <b>08/11/06 17:45</b>
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**Percent Dry Weight (Solids) per Standard Methods**  
TestAmerica - Portland, OR

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PPG0778-01 (PB-1)</b>		<b>Soil</b>		<b>Sampled: 07/19/06 09:40</b>						
% Solids	NCA SOP	88.2	---	0.00	% by Weight	1x	6070831	07/20/06 13:51	07/20/06 13:51	
<b>PPG0778-02 (PB-2)</b>		<b>Soil</b>		<b>Sampled: 07/19/06 10:00</b>						
% Solids	NCA SOP	87.0	---	0.00	% by Weight	1x	6070831	07/20/06 13:51	07/20/06 13:51	
<b>PPG0778-03 (PB-3)</b>		<b>Soil</b>		<b>Sampled: 07/19/06 10:40</b>						
% Solids	NCA SOP	85.8	---	0.00	% by Weight	1x	6070831	07/20/06 13:51	07/20/06 13:51	
<b>PPG0778-04 (PB-4)</b>		<b>Soil</b>		<b>Sampled: 07/19/06 10:55</b>						
% Solids	NCA SOP	87.7	---	0.00	% by Weight	1x	6070831	07/20/06 13:51	07/20/06 13:51	
<b>0778-05 (PB-5)</b>		<b>Soil</b>		<b>Sampled: 07/19/06 11:05</b>						
% Solids	NCA SOP	88.4	---	0.00	% by Weight	1x	6070831	07/20/06 13:51	07/20/06 13:51	
<b>PPG0778-06 (PB-6)</b>		<b>Soil</b>		<b>Sampled: 07/19/06 12:35</b>						
% Solids	NCA SOP	83.0	---	0.00	% by Weight	1x	6070831	07/20/06 13:51	07/20/06 13:51	
<b>PPG0778-07 (PB-7)</b>		<b>Soil</b>		<b>Sampled: 07/19/06 13:20</b>						
% Solids	NCA SOP	87.8	---	0.00	% by Weight	1x	6070831	07/20/06 13:51	07/20/06 13:51	
<b>PPG0778-08 (PB-8)</b>		<b>Soil</b>		<b>Sampled: 07/19/06 13:30</b>						
% Solids	NCA SOP	92.8	---	0.00	% by Weight	1x	6070831	07/20/06 13:51	07/20/06 13:51	
<b>PPG0778-09 (PB-9)</b>		<b>Soil</b>		<b>Sampled: 07/19/06 13:45</b>						
% Solids	NCA SOP	89.0	---	0.00	% by Weight	1x	6070831	07/20/06 13:51	07/20/06 13:51	
<b>PPG0778-10 (PB-10)</b>		<b>Soil</b>		<b>Sampled: 07/19/06 13:55</b>						
% Solids	NCA SOP	87.4	---	0.00	% by Weight	1x	6070831	07/20/06 13:51	07/20/06 13:51	

TestAmerica - Portland, OR

*The results in this report apply to the samples analyzed in accordance with the chain of custody documents. This analytical report must be reproduced in its entirety.*

*Sarah Rockwell*

Sarah Rockwell, Project Manager



<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	<b>Project Name:</b> USFWS-Cullinan Ranch <b>Project Number:</b> 0758-137-00 <b>Project Manager:</b> Joey Hickey	<b>Report Created:</b> 08/11/06 17:43
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**Total Metals per EPA 6000/7000 Series Methods - Laboratory Quality Control Results**  
 TestAmerica - Portland, OR

**QC Batch:** 6070924      **Soil Preparation Method:** EPA 3050

Analyte	Method	Result	MDL <sup>a</sup>	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RFD	(Limits)	Analyzed	Notes
<b>Blank (6070924-BLK1)</b>														Extracted: 07/22/06 12:06
Zinc	EPA 6020	ND	---	4.00	mg/kg wet	2x	--	--	--	--	--	--	08/07/06 17:32	
<b>Blank (6070924-BLK2)</b>														Extracted: 07/22/06 12:06
Zinc	EPA 6020	ND	---	1.04	mg/kg wet	1x	--	--	--	--	--	--	08/09/06 02:19	
<b>LCS (6070924-BS1)</b>														Extracted: 07/22/06 12:06
Zinc	EPA 6020	10.2	---	1.81	mg/kg wet	2x	--	9.52	107%	(80-120)	--	--	08/07/06 17:40	
<b>LCS (6070924-BS2)</b>														Extracted: 07/22/06 12:06
Zinc	EPA 6020	9.78	---	1.90	mg/kg wet	1x	--	9.52	103%	(80-120)	--	--	08/09/06 02:35	
<b>Duplicate (6070924-DUP1)</b>														QC Source: PFG0681-02      Extracted: 07/22/06 12:06
Zinc	EPA 6020	49.8	---	2.32	mg/kg dry	1x	53.2	--	--	--	6.60% (40)	--	08/04/06 16:48	
<b>Matrix Spike (6070924-MS1)</b>														QC Source: PFG0681-01      Extracted: 07/22/06 12:06
Zinc	EPA 6020	62.5	---	2.34	mg/kg dry	1x	53.2	11.7	79.5%	(75-125)	--	--	08/04/06 16:56	
<b>Matrix Spike (6070924-MS2)</b>														QC Source: PFG0832-01      Extracted: 07/22/06 12:06
Zinc	EPA 6020	51.8	---	2.21	mg/kg dry	1x	40.4	11.0	100%	(75-125)	--	--	08/04/06 19:46	

*Sarah Rockwell*

Sarah Rockwell, Project Manager



<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	Project Name: <b>USFWS-Cullinan Ranch</b> Project Number: <b>0758-137-00</b> Project Manager: <b>Joey Hickey</b>	Report Created: <b>08/11/06 17:45</b>
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**Percent Dry Weight (Solids) per Standard Methods - Laboratory Quality Control Results**  
 TestAmerica - Portland, OR

QC Batch: **6070831**      Other wet Preparation Method: **Dry Weight**

Analyte	Method	Result	MDL <sup>a</sup>	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Duplicate (6070831-DUP1)</b>							QC Source: PPG0776-01		Extracted: 07/20/06 15:51					
% Solids	NCA SOP	62.2	--	0.00	% by Weight	1x	68.1	--	--	--	9.06% (20)	--	07/20/06 13:51	

*Sarah Rockwell*  
 Sarah Rockwell, Project Manager



<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	Project Name: <b>USFWS-Cullinan Ranch</b> Project Number: <b>075A-137-00</b> Project Manager: <b>Joey Hickey</b>	Report Created: <b>08/11/06 17:45</b>
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**Notes and Definitions**

Report Specific Notes:

R-02 - The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.

Laboratory Reporting Conventions:

- DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA - Not Reported / Not Available
- dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL\* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. \*MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
- Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*. Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

*Sarah Rockwell*

Sarah Rockwell, Project Manager



11720 North Creek Pkwy N Suite 400, Redmond, WA 98071-8294 FAX 509-881-9200  
 31922 E. Ford Ave. Spokane, WA 99206-5302 FAX 509-324-9200  
 9405 SW Numbur Ave. Beaverton, OR 97008-7145 FAX 503-666-9200  
 3000 W. International Airport Rd Ste. 110, Anchorage, AK 99502-1114 FAX 907-563-9200

## CHAIN OF CUSTODY REPORT

Work Order #: **PPA0718**

CLIENT: **Credentiales, Inc**  
 REPORT TO: **Joey Hickey**  
 ADDRESS: **15055 SW Squin Runy Ste 140**  
**Parkland, OR 97224**  
 PHONE: **503 624 9234** FAX: **503 620 5540**  
 PROJECT NAME: **USFWS - Cullinan Ranch**  
 PROJECT NUMBER: **0758-137-00**

INVOICE TO: **Geotitles**

P.O. NUMBER:

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE		REQUESTED ANALYSES		MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
		OTHER	Specific	OTHER	Specific				
PB-1	7/19/06 0940					Soil	1		
PB-2	1000								
PB-3	1040								
PB-4	1055								
PB-5	1105								
PB-6	1235								
PB-7	1320								
PB-8	1330								
PB-9	1345								
PB-10	1355								

RELEASED BY: **Bob E** DATE: **7/20/06** TIME: **10:30**  
 PRINT NAME: **Bob E** TIME: **10:30**  
 RECEIVED BY: **Bob E** DATE: **7/20/06** TIME: **10:30**  
 PRINT NAME: **Bob E** TIME: **10:30**

ADDITIONAL REMARKS: **California Site**

ANALYST: **Bob E** PAGE 1 OF 1

Payment for services is due within 30 days from the date of invoice unless otherwise contracted. Samples will be disposed of after 30 days unless otherwise contracted.

TAT \_\_\_\_\_

Non-Conformances?

Circle Y or N

(If Y, see other side)

### TEST AMERICA SAMPLE RECEIPT CHECKLIST 386

Received By: \_\_\_\_\_ Logged-in By: \_\_\_\_\_ Unpacked/Labeled By: \_\_\_\_\_ Cooler ID: 314 ( \_\_\_ of \_\_\_ )  
(copies in form or receipt)

Date: 7/20/06 Date: 7/20 Date: 7/20 Work Order No. PP610778  
 Time: 10:34 Initials: LF Initials: SM Client: Coca Cola  
 Initials: \_\_\_\_\_ Project: \_\_\_\_\_

Container Type: \_\_\_\_\_ COC Seals: \_\_\_\_\_ Packing Material: \_\_\_\_\_  
 Cooler \_\_\_\_\_ Ship. Container \_\_\_\_\_ Sign By \_\_\_\_\_  
 Box \_\_\_\_\_ On Bottles \_\_\_\_\_ Date \_\_\_\_\_  
 None/Other \_\_\_\_\_  None \_\_\_\_\_  
 Bubble Bags \_\_\_\_\_ Styrofoam \_\_\_\_\_  
 Foam Packs \_\_\_\_\_  
 None/Other Other \_\_\_\_\_

Refrigerant: \_\_\_\_\_ Received Via: Bill# \_\_\_\_\_  
 Gel Ice Pack \_\_\_\_\_ None \_\_\_\_\_  
 Loose Ice \_\_\_\_\_  
 None/Other \_\_\_\_\_  
 Fed Ex \_\_\_\_\_ Client \_\_\_\_\_  
 UPS  NCA Courier \_\_\_\_\_  
 DHL \_\_\_\_\_ Mid Valley \_\_\_\_\_  
 Senvoy \_\_\_\_\_ TDP \_\_\_\_\_  
 GS \_\_\_\_\_ Other \_\_\_\_\_

Cooler Temperature (IR): 2.7 °C Plastic Glass (Frozen filters, Tedlars and aqueous Metals exempt)  
(circle one)

Temperature Blank? \_\_\_\_\_ °C  NA Trip Blank? \_\_\_\_\_ Y or N or  NA

<u>Sample Containers:</u>	<u>ID</u>	<u>ID</u>
Intact? <input checked="" type="checkbox"/> Y or N _____	Metals Preserved? <input checked="" type="checkbox"/> Y or N or <input checked="" type="checkbox"/> NA _____	
Provided by NCA? <input checked="" type="checkbox"/> Y or N _____	Client QAPP Preserved? <input checked="" type="checkbox"/> Y or N or <input checked="" type="checkbox"/> NA _____	
Correct Type? <input checked="" type="checkbox"/> Y or N _____	Adequate Volume? <input checked="" type="checkbox"/> Y or N _____	
#Containers match COC? <input checked="" type="checkbox"/> Y or N _____	Water VOAs: Headspace? <input checked="" type="checkbox"/> Y or N or <input checked="" type="checkbox"/> NA _____	
IDs/time/date match COC? <input checked="" type="checkbox"/> Y or N _____	Comments: _____	
Hold Times in hold? <input checked="" type="checkbox"/> Y or N _____		

#### PROJECT MANAGEMENT

Is the Chain of Custody complete? \_\_\_\_\_ Y or N If N, circle the items that were incomplete

Comments/Problems \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Total access set up? \_\_\_\_\_ Y or N  
 Has client been contacted regarding non-conformances? \_\_\_\_\_ Y or N If Y, \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 PM Initials: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

(rev 3 09/12/05)

September 26, 2006

Joey Hickey  
GeoEngineers, Inc.  
15055 SW Sequoia Parkway, Suite 140  
Portland, OR 97224

RE: USFWS-Cullinan Ranch

Enclosed are the results of analyses for samples received by the laboratory on 09/08/06 10:55.  
The following list is a summary of the Work Orders contained in this report, generated on 09/26/06  
17:36.

If you have any questions concerning this report, please feel free to contact me.

---

<u>Work Order</u>	<u>Project</u>	<u>Project Number</u>
PP10332	USFWS-Cullinan Ranch	0758-137-00

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<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	<b>Project Name:</b> USFWS-Cullinan Ranch <b>Project Number:</b> 0758-137-00 <b>Project Manager:</b> Joey Hickey	<b>Report Created:</b> 09/26/06 17:36
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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PB-3A(2.5)	PPI0332-01	Soil	09/07/06 11:00	09/08/06 10:55

TestAmerica - Portland, OR

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Sarah Rockwell*

Sarah Rockwell, Project Manager



<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	Project Name: <b>USFWS-Cullinan Ranch</b> Project Number: 0758-137-00 Project Manager: Joey Hickey	Report Created: 09/26/06 17:36
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**Total Metals by EPA 6000/7000 Series Methods**  
 TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRI	Units	Dil	Batch	Prepared	Analyzed	Notes
PP10332-01 (PB-3A(2.5))		Soil			Sampled: 09/07/06 11:00					
Zinc	EPA 6020	105	—	5.94	mg/kg dry	1x	0715046	09/15/06 16:07	09/18/06 12:43	

*Siobhan Rockwell*

Siobhan Rockwell, Project Manager



<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	<b>Project Name:</b> USFWS-Cullinan Ranch <b>Project Number:</b> 0758-137-00 <b>Project Manager:</b> Joey Hickey	<b>Report Created:</b> 09/26/06 17:36
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**Physical Parameters by APHA/ASTM/EPA Methods**  
 TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PP10332-01 (PB-3A(2.5))		Soil						Sampled: 09/07/06 11:00		
Dry Weight	850PPL003R0 g	81.7	---	1.00	%	1x	616013	09/18/06 14:58	09/18/06 00:00	

*Sarah Rockwell*

Sarah Rockwell, Project Manager



<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	Project Name: <b>USFWS-Cullinan Ranch</b> Project Number: <b>0758-137-00</b> Project Manager: <b>Joey Hickey</b>	Report Created: <b>09/26/06 17:36</b>
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**Total Metals by EPA 6000/7000 Series Methods - Laboratory Quality Control Results**  
 TestAmerica - Seattle, WA

QC Batch: **6115046** Soil Preparation Method: **EPA 3050B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (6115046-BLK1)</b>										Extracted: 09/15/06 16:07				
Zinc	EPA 6020	ND	--	4.81	mg/kg wet	1x	--	--	--	--	--	--	09/18/06 11:45	
<b>LCS (6115046-BS1)</b>										Extracted: 09/15/06 16:07				
Zinc	EPA 6020	45.5	--	5.26	mg/kg wet	1x	--	42.1	108%	(30-120)	--	--	09/18/06 11:51	
<b>Duplicate (6115046-DUP1)</b>										QC Source: <b>BP10338-09</b> Extracted: 09/18/06 16:07				
Zinc	EPA 6020	139	---	5.59	mg/kg dry	1x	90.4	--	--	--	42.4%	(30)	09/18/06 12:02	DP-1
<b>Matrix Spike (6115046-MS1)</b>										QC Source: <b>BP10338-09</b> Extracted: 09/15/06 16:07				
Zinc	EPA 6020	149	---	5.65	mg/kg dry	1x	90.4	45.2	130%	(20-160)	--	--	09/18/06 12:37	
<b>Post Spike (6115046-PS1)</b>										QC Source: <b>BP10338-09</b> Extracted: 09/15/06 16:07				
Zinc	EPA 6020	0.255	---		ug/dl	1x	0.163	0.0995	92.5%	(75-125)	--	--	09/18/06 11:57	

*Sarah Rockwell*

Sarah Rockwell, Project Manager



<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	Project Name: <b>USEFWS-Cullinan Ranch</b> Project Number: <b>0758-137-00</b> Project Manager: <b>Joey Hickey</b>	Report Created: <b>09/26/06 17:36</b>
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**Physical Parameters by APHA/ASTM/EPA Methods - Laboratory Quality Control Results**  
 TestAmerica - Seattle, WA

QC Batch: **6116013**      Soil Preparation Method: **Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (6116013-BLK1)</b>										Extracted: 09/16/06 14:58				
Dry Weight	BS0PSPLO0 3R06	100	---	1.00	%	1x	-	-	-	-	-	-	09/18/06 00:00	

TestAmerica - Portland, OR

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Sarah Rockwell*

Sarah Rockwell, Project Manager



<b>GeoEngineers, Inc.</b> 15055 SW Sequoia Parkway, Suite 140 Portland, OR 97224	Project Name:	<b>USFWS-Cullinan Ranch</b>	Report Created:
	Project Number:	0758-137-00	09/26/06 17:36
	Project Manager:	Joey Hickey	

**Notes and Definitions**

Report Specific Notes:

DP-1 - Sample RPD exceeded the laboratory control limit.

Laboratory Reporting Conventions:

- DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA - Not Reported / Not Available
- dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL\* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. \*MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
- Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*. Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

*Sarah Rackwell*

Sarah Rackwell, Project Manager



# CHAIN OF CUSTODY REPORT

Work Order #: **PR10332**

<b>CLIENT:</b> GeoEngineers <b>REPORT TO:</b> Joey Hickey ADDRESS: 15055 SW Sequoia Parkway, Suite 140 Portland, Oregon 97224 <b>PHONE:</b> 824-6274 <b>FAX:</b> 820-5940		<b>INVOICE TO:</b> GEI Attention: Joey Hickey	
<b>PROJECT NAME:</b> USFWS - Cullinan Ranch <b>SAMPLED BY:</b> Erik Hedberg		<b>P.O. NUMBER:</b> PRESERVATIVE	
<b>TURNAROUND REQUEST in Business Days*</b> Organic and Inorganic Analysis STD Petroleum Hydrocarbon Analysis		Please e-mail prelims of HClD, Gx and Dx results	
* Turnaround Requests less than standard may incur Rush Charges.		OTHER Specify:	
MATRIX (M, S, O) Soil		# OF CONT. <b>2</b>	
COMMENTS		LAB/VOID	
CLIENT SAMPLE IDENTIFICATION DATE: 9/17/06 TIME: 11:00 AM		RECEIVED BY: <i>[Signature]</i> PROJECT NAME: <i>[Signature]</i> RECEIVED BY: <i>[Signature]</i> FIRM: <i>[Signature]</i> DATE: 9/18/06 TIME: 10:55	
CLIENT SAMPLE COLLECTION DATE: 9/17/06 TIME: 11:00 AM		FIRM: <i>[Signature]</i>	
ADDITIONAL REMARKS: X = Analyze		FIRM:	

231

Non-Conformances?  
 Circle Y or N  
 (If Y, see other side)

TEST AMERICA SAMPLE RECEIPT CHECKLIST

Received By: \_\_\_\_\_ Logged-in By: \_\_\_\_\_ Unpacked/Labeled By: \_\_\_\_\_ Cooler ID: \_\_\_\_\_ (\_\_\_\_ of \_\_\_\_)

Date: 9/8/06 Date: 9/11 Date: 9/11 Work Order No. PPI03722

Time: 10:37 Initials: CF Initials: CF Client: Geo Energy

Initials: CF Project: USFWS - Cullinan Ranch

Container Type: \_\_\_\_\_ COC Seals \_\_\_\_\_  
 Cooler \_\_\_\_\_ Shp. Container \_\_\_\_\_ Sign By \_\_\_\_\_  
 Box \_\_\_\_\_ On Bottles \_\_\_\_\_ Date \_\_\_\_\_  
 None/Other \_\_\_\_\_  None

Packing Material \_\_\_\_\_  
 Bubble Bags \_\_\_\_\_ Styrofoam \_\_\_\_\_  
 Foam Packs \_\_\_\_\_  
 None/Other Other boxed

Refrigerant: \_\_\_\_\_  
 Gel Ice Pack \_\_\_\_\_ None \_\_\_\_\_  
 Loose ice \_\_\_\_\_  
 None/Other \_\_\_\_\_

Received Via: Bill# \_\_\_\_\_  
 Fed Ex \_\_\_\_\_ Client \_\_\_\_\_  
 UPS  NCA Courier \_\_\_\_\_  
 DHL \_\_\_\_\_ Mid Valley \_\_\_\_\_  
 Servoy \_\_\_\_\_ TDP \_\_\_\_\_  
 GS \_\_\_\_\_ Other \_\_\_\_\_

Cooler Temperature (IR): 3.3  Plastic Glass (Frozen filters, Tedlars and aqueous Metals exempt)  
 (circle one)

Temperature Blank? \_\_\_\_\_ °C or NA Trip Blank? \_\_\_\_\_ Y or N or NA

Sample Containers: _____ ID _____	Metals Preserved? _____ Y or N or <u>NA</u>
Intact? <input checked="" type="checkbox"/> Y or N _____	Client QAPP Preserved? _____ Y or N or <u>NA</u>
Provided by NCA? <input checked="" type="checkbox"/> Y or N _____	Adequate Volume? <input checked="" type="checkbox"/> Y or N _____ (for tests requested)
Correct Type? <input checked="" type="checkbox"/> Y or N _____	Water VOAs. Headspace? _____ Y or N or <u>NA</u>
#Containers match COC? <input checked="" type="checkbox"/> Y or N _____	Comments: _____
IDs/time/date match COC? <input checked="" type="checkbox"/> Y or N _____	
Hold Times in hold? <input checked="" type="checkbox"/> Y or N _____	

PROJECT MANAGEMENT

Is the Chain of Custody complete? \_\_\_\_\_ Y or N If N, circle the items that were incomplete

Comments, Problems \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

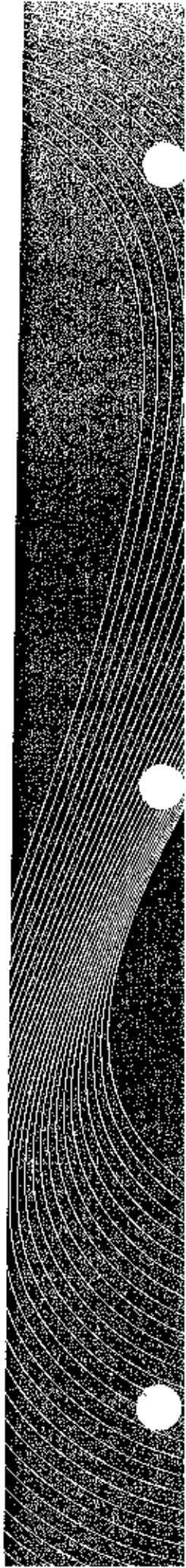
Total access set up? \_\_\_\_\_ Y or N  
 Has client been contacted regarding non-conformances? \_\_\_\_\_ Y or N If Y, \_\_\_\_\_ / \_\_\_\_\_  
 Date Time

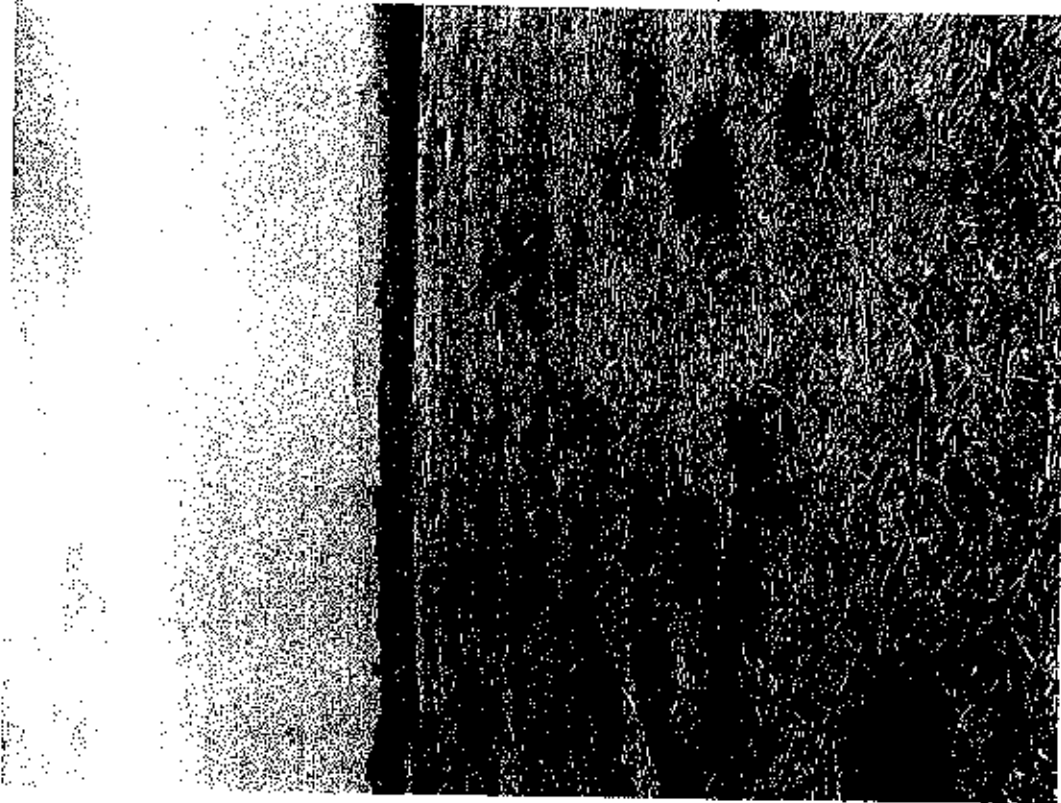
PM Initials: \_\_\_\_\_ Date \_\_\_\_\_ Time: \_\_\_\_\_



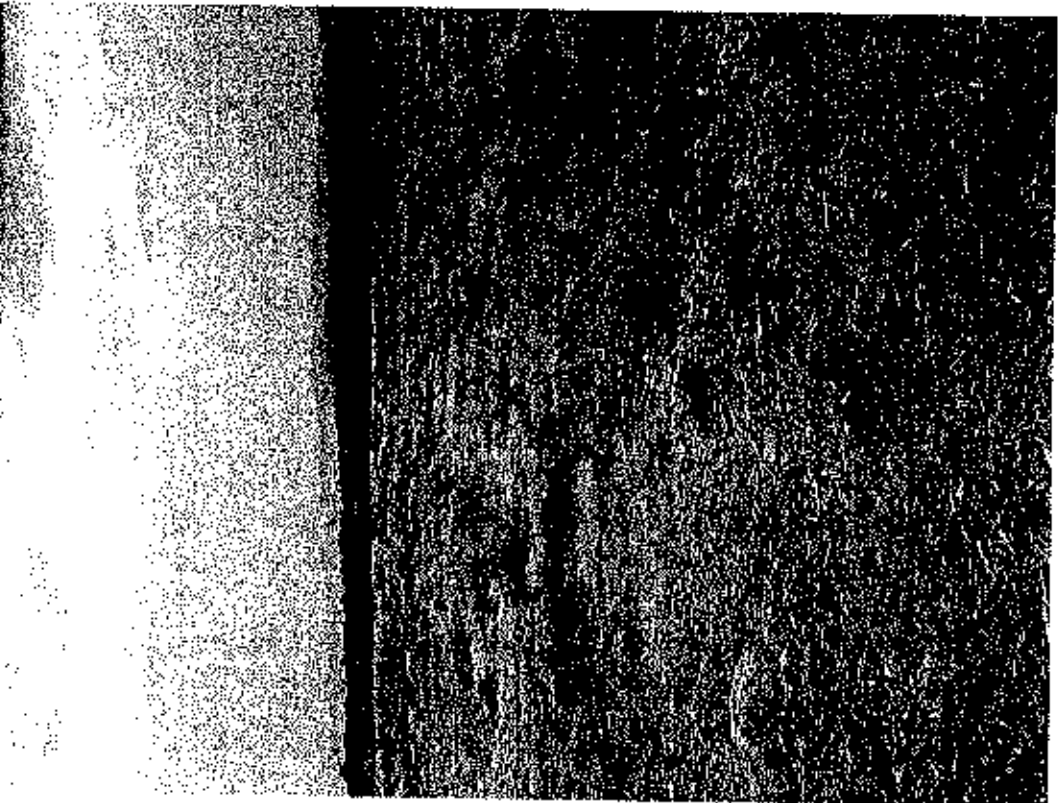


**ATTACHMENT C**  
**SITE PHOTOGRAPHS**





Pre-excavation, west side  
(facing North)



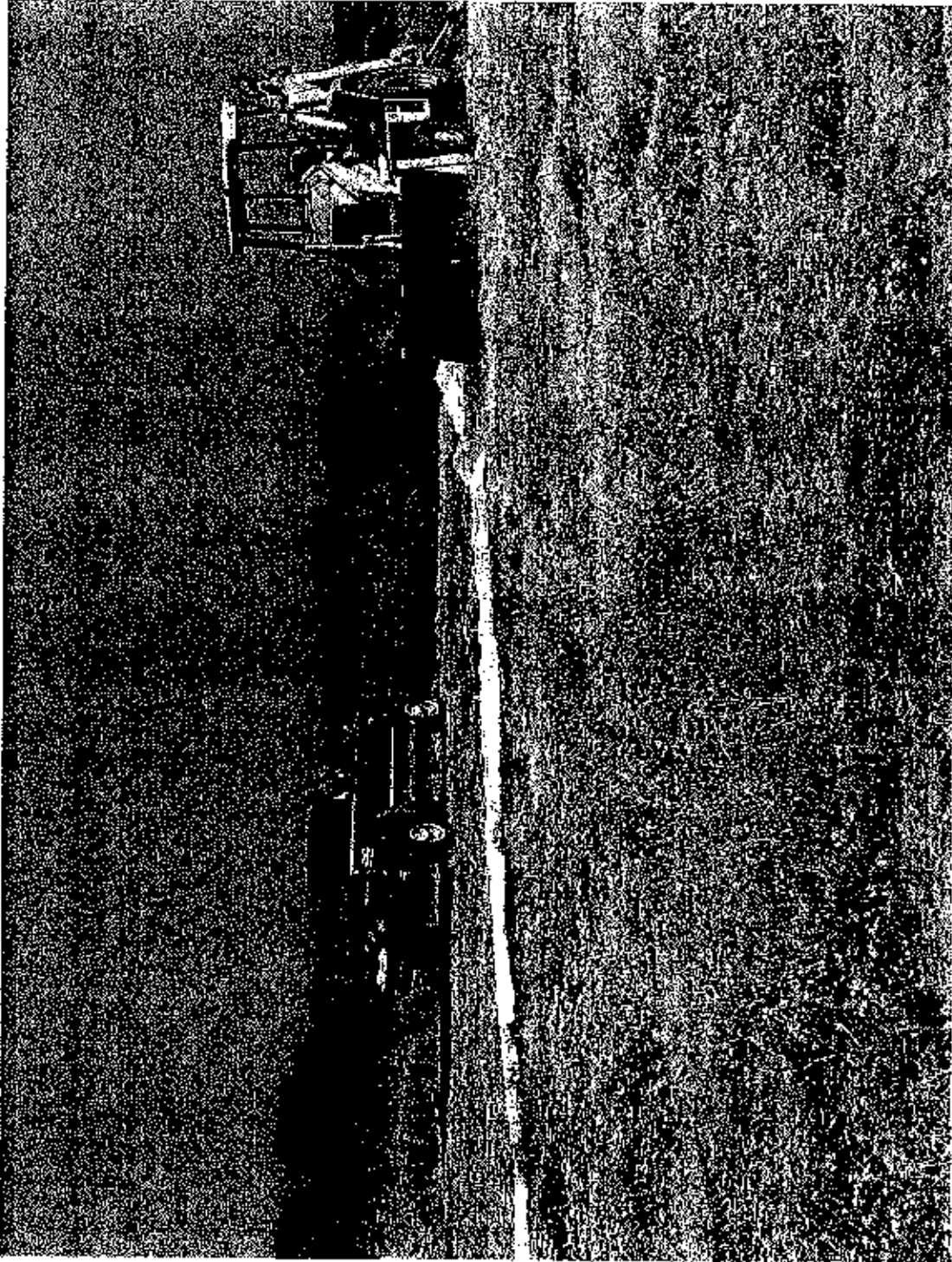
Pre-excavation, east side  
(facing North)

**SITE PHOTOGRAPHS**



**FIGURE 3**

Portland:\P\0768137\07\Photos\Site Photos.ppt



Excavation Activities, west side (facing Northwest)

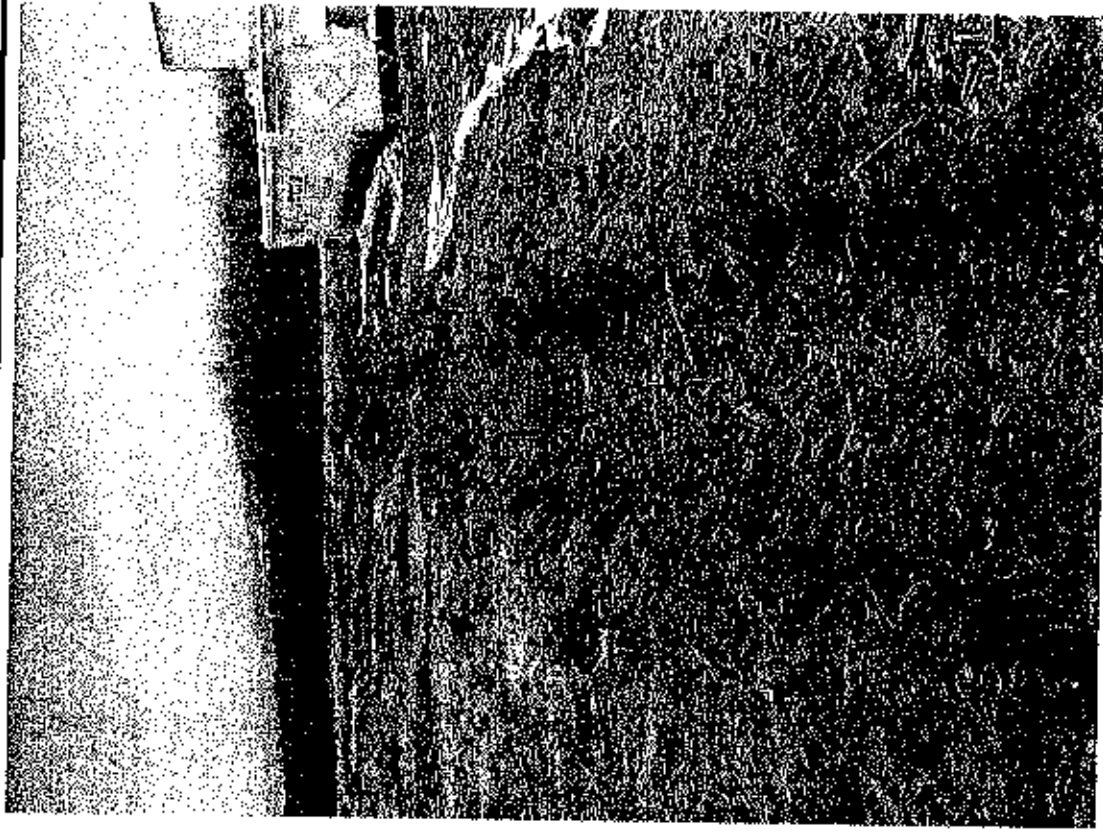


SITE PHOTOGRAPHS

FIGURE 4



Excavated area, west side (facing North)



Excavated area, east side (facing North)



**SITE PHOTOGRAPHS**

**FIGURE 5**