

Denny L. Foust
DEPUTY OIL & GAS INSPECTOR

AUG 09 1999

Approved

Jicarilla Apache Tribe
Environmental Protection Office
P.O. Box 507
Dulce, New Mexico 87528

OK ISK Belrock
RECEIVED *TPH*
JUN 24 1999 *OK*

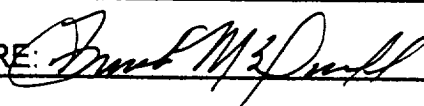

OIL CON. DIV.
DIST. 3

Pit Remediation and Closure Report

Operator:	Taurus Exploration U.S.A., Inc		Telephone:	(505) 325-6800	
Address:	2198 Bloomfield Hwy, Farmington, NM 87401				
Facility or Well Name:	Jicarilla 35-12				
Location:	Unit or Qtr/QTR		Sec "I"	Sec 35, T 25 N, R 5 W	County Rio Arriba
Pit Type:	Separator:	Dehydrator:	Other: X - Abandoned Separator Pit		
Land Type:	Range				
Pit Location:	Pit dimensions: length: 20 ft width: 20 ft depth: 4 ft				
(Attach Diagram)					
Reference:	wellhead: X		other:		
Footage from reference:	100 feet				
Direction from reference:	90	Degrees	East	North	X
				of	
			X West	South	
Depth To Groundwater:	Less than 50 feet	(20 points)			
(Vertical distance from	50 feet to 99 feet	(10 points)			
contaminants to seasonal	Greater than 100 feet	(0 points)	0		
high water elevations of					
groundwater)					
Distance to an Ephemeral Stream:	Less than 100 feet	(10 points)			
(Downgradient dry wash greater than	Greater than 100 feet	(0 points)	0		
ten feet in width)					
Distance to Nearest Lake, Playa, or Watering	Less than 100 feet	(10 points)			
Pond: (Downgradient lakes, playas, and	Greater Than 100 feet	(0 points)	0		
livestock or wildlife watering ponds)					
Wellhead Protection Area:	Yes	(20 points)			
(Less than 200 feet from a private	No	(0 points)	0		
domestic water source, or less than					
1000 feet from all other water sources)					
Distance To Surface Water:	Less than 100 feet	(20 points)			
(Horizontal distance to perennial	100 feet to 1000 feet	(10 points)			
lakes, ponds, rivers, streams, creeks,	Greater than 1000 feet	(0 points)	0		
irrigation canals and ditches.)					
RANKING SCORE (TOTAL SCORE):					0

Jicarilla Apache Tribe
Environmental Protection Office
P.O. Box 507
Dulce, New Mexico 87528

Pit Remediation and Closure Report

Date Remediation Started: <u>8/3/98</u>		Date Completed: <u>8/3/98</u>	
Remediation Method: (Check all appropriate sections)	Excavation:	<u>X</u>	Approx. cubic yd: <u>43</u>
	Landfarmed:	<u>X</u>	Insitu Bioremediation:
	Other:		
Remediation Location: (I.e. landfarmed on site, name and location of off site location)	On-site:	<u>X</u>	Off-site:
General Description of Remedial Action:		Soil was excavated and landfarmed on location.	
Groundwater Encountered:		No: <u>X</u>	Yes: _____ Depth: _____
Final Pit Closure Sampling: (If multiple samples, attach sample results and diagram of sample locations and depths.)	Sample location: <u>Pit Bottom @ 4 feet below surface (Bedrock). Pit walls were analyzed for Headspace (see attachment).</u>		
	Sample depth:	<u>4 feet (Bedrock)</u>	
	Sample date:	<u>8/3/98</u>	Sample time: <u>1410</u>
Sample Results:			
<u>Soil:</u>		<u>Water:</u>	
Benzene (ppm)	<u>0.166</u>	Benzene (ppb)	_____
Total BTEX (ppm)	<u>6.549</u>	Toluene (ppb)	_____
Field Headspace (ppm)	<u>465</u>	Ethylbenzene (ppb)	_____
TPH (ppm)	<u>5220 (Bedrock)</u>	Total Xylenes (ppb)	_____
Groundwater Sample: (If yes, attach sample results.)	Yes: _____	No: <u>X</u>	
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF			
DATE: <u>8/25/98</u>		Frank McDonald	
SIGNATURE: 		AND TITLE: <u>Env. Division Manager</u>	
AFTER REVIEW OF THE PIT CLOSURE INFORMATION PIT CLOSURE IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE			
APPROVED: Yes: <u>X</u>		No: _____	(Reason) <u>R.A. Attached</u>
SIGNED: 		DATE: <u>8-2-98</u>	

Risk Assessment

Taurus Exploration U.S.A., Inc.

Jicarilla 35-12

Abandoned Separator Pit

Depth to Groundwater	>50 feet
Distance to Ephemeral Stream	>100 feet
Distance to Nearest Lake, Playa, or Watering Pond	>100 feet
Closure Limit	5000 ppm

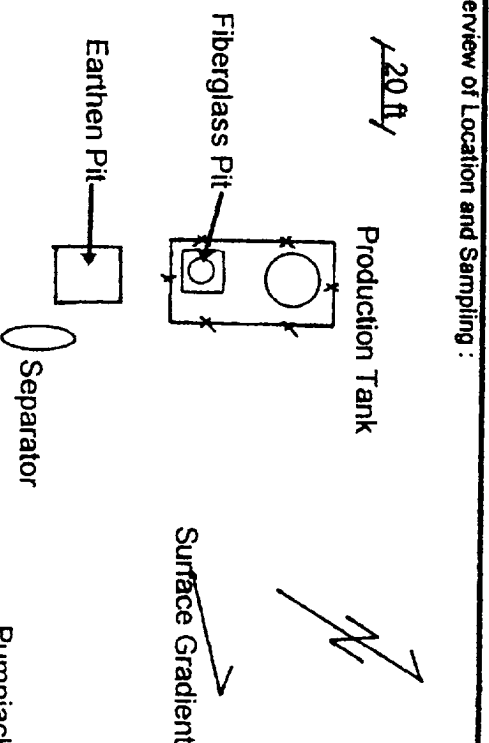
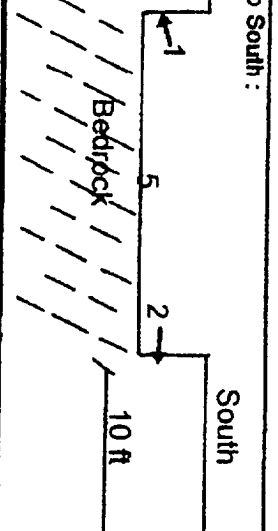
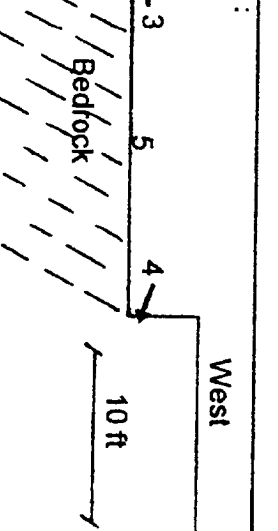
The subject pit was located on hard, well-cemented sandstone at a depth of approximately 4 feet. The initial size of the pit was 15' x 15' x 2' in depth. The stained soil was excavated to a final pit size 20' x 20' x 4' in depth. Excavated soils amounted to approximately 43 cubic yards.

On August 3, 1998 Cimarron Oilfield Services began and completed excavation of the subject pit. Excavation ceased at bedrock at a depth of approximately 4 feet. Headspace analysis of the walls ranged from 121 ppm to 1.1 ppm. Headspace analysis of the pit bottom was 465 ppm. A sample from the bottom was evaluated for Total Petroleum Hydrocarbons (USEPA Method 418.1) and Benzene, Toluene, ethyl-Benzene, and Xylenes (USEPA Method 8020). Analysis of the sample provided Benzene concentration and Total BTEX concentrations within Jicarilla Apache Environmental Protection Office (EPO) Guidelines (0.166 and 6.549 ppm respectively). TPH Concentration is outside the guidelines (5,220 ppm).

Having reached bedrock the subject pit should be considered to have reached "final closure". Taurus Exploration U.S.A. Inc. has removed all soils to the extent practical. Based on the information and the physical location of the pit, there is little to no risk to human health or environment.

Client : Taurus Exploration U.S.A. Inc.

Date Started : August 3, 1998 Date Completed : August 3, 1998

Location : <u>Jicantla 35 - 12</u>		Overview of Location and Sampling :	
Quad : <u>1</u>	Section : <u>35</u>		
Range : <u>5 W</u>	Township: <u>25 N</u>		
Pit : Abandoned Separator Pit Reference : 100' N 90 W from wellhead			
Initial Size : 15' x 15' x 2' deep	Sample #	Location	OVM
Final Size : 20' x 20' x 4' deep	1	N. Wall @ 3'	1.1
Yds. Excavated : 43 cy	2	S. Wall @ 3'	27.2
Depth to Groundwater: >100'	3	E. Wall @ 3'	121
Nearest Water Source: >1000'	4	W. Wall @ 3'	37.1
Nearest Surface Water: >1000'	5	C. Btm @ 4'	485
Nearest Ephemeral Stream: >1000'	6		
EPO Ranking Score: 0	7		
TPH Closure Standard: 5000	8		
	9		
	10		
	11		
	12		
Comments : Top soil - 4' Soil is moist, brown, sand with black staining, and a strong hydrocarbon odor. 4' Bedrock encountered. A sample from the center bottom at 4' was sent to IML for GRO/DRO and BTEX analysis.			
Pit Profile : North to South : North		Pit Profile : East to West : East	
			

Environmental Specialist : YC

Cimarron Oilfield Services

TOTAL PETROLEUM HYDROCARBONS
EPA METHOD 418.1

Client: **Taurus Exploration U.S.A., Inc.**
Project: Jicarilla 35-12 Sep. Pit
Matrix: Soil
Condition: Intact/Cool

Date Reported: 08/13/98
Date Sampled: 08/03/98
Date Received: 08/04/98
Date Extracted: 08/13/98
Date Analyzed: 08/13/98

Sample ID	Lab ID	Result mg/kg	Detection Limit mg/kg
C. Bottom @ 4'	0398G04345	5,220	198.0

ND - Analyte not detected at stated detection level.

Method 418.1:

Petroleum Hydrocarbons, Total Recoverable, USEPA Chemical Analysis of Water and Waste, 1978.

Method 3550:

Ultrasonic Extraction of Non-Volatile and Semi-Volatile Organic Compounds from Solids, USEPA SW-846, Rev. 1, July 1992.

Analyst: 

Reviewed: 

VOLATILE AROMATIC HYDROCARBONS**Taurus Exploration U.S.A., Inc.**

Project ID: Jicarilla 35-12 Sep. Pit
Sample ID: C. Bottom @ 4'
Lab ID: 0398G04345
Sample Matrix: Soil
Condition: Cool/Intact

Report Date: 08/12/98
Date Sampled: 08/03/98
Time Sampled: 10:40am
Date Received: 08/04/98
Date Extracted: NA
Date Analyzed: 08/11/98

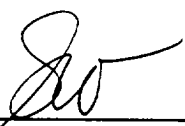
Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	166	10.0
Toluene	ND	50.0
Ethylbenzene	5700	50.0
m,p-Xylenes	204	50.0
o-Xylene	479	50.0

ND - Analyte not detected at the stated detection limit.


Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Bromofluorobenzene	79%	70%-130%

Reference: Method 5030, Purge and Trap; Method 8021B, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Revision 2, December, 1996.

Comments:



Analyst



Review

Quality Assurance / Quality Control

Total Petroleum Hydrocarbons

Client: **Taurus Exploration U.S.A., Inc.**
Project: **Jicarilla 35-12 Sep. Pit**
Matrix: **Soil**
Condition: **Intact/Cool**

Date Reported: **08/13/98**
Date Sampled: **08/03/98**
Date Received: **08/04/98**
Date Extracted: **08/13/98**
Date Analyzed: **08/13/98**

Duplicate Analysis

Lab ID	Sample Result	Duplicate Result	Units	%Difference
G04478	851	825	mg/kg	3.1%

Method Blank Analysis

Lab ID	Result	Units	Detection Limit
Method Blank	ND	mg/kg	20.0

Spike Analysis

Lab ID	Found Conc. mg/kg	Sample Conc. mg/kg	Spike Amount mg/kg	Percent Recovery	Acceptance Limits
MB	220	ND	250	88%	70-130%

Known Analysis

Lab ID	Found Conc. mg/kg	Known Conc. mg/kg	Percent Recovery	Acceptance Limits
QC	25.1	26.0	96%	70-130%

Method 418.1: Petroleum Hydrocarbons, Total Recoverable, USEPA Chemical Analysis of Water and Waste, 1978.

Method 3550: Ultrasonic Extraction of Non-Volatile and Semi-Volatile Organic Compounds from Solids, USEPA SW -846, rev.1, July 1992.

Reported By: Reveiwed By: 



CHAIN OF CUSTODY RECORD

Client/Project Name			Project Location		ANALYSES / PARAMETERS		
Taurus Exploration			Sierra 35-12 Separable R1				
Sampler: (Signature) <i>[Signature]</i>			Chain of Custody Tape No.				
Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	Remarks	
35-12 C Blend 4'	8/3/98	14:10		Soil	1		
<i>BS</i>							
<i>cool - intact, hand delivered</i>							
Relinquished by: (Signature) <i>[Signature]</i>			Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature) <i>[Signature]</i>			8/4/98	0836	Received by: (Signature) <i>[Signature]</i>	8/4/98	0836
Relinquished by: (Signature)			Date	Time	Received by laboratory: (Signature)	Date	Time
Relinquished by: (Signature) <i>[Signature]</i>			8/4/98	0836	Received by laboratory: (Signature) <i>[Signature]</i>	8-4-98	0836

☐ 1633 Terra Avenue
Sheridan, Wyoming 82801
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☒ 2506 West Main Street
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☐ 1160 Research Drive
Bozeman, Montana 59718
Telephone (406) 586-8450


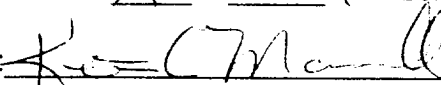
☐ 11183 State Hwy. 30
College Station, TX 77845
Telephone (409) 776-8945

Inter-Mountain Laboratories, Inc.

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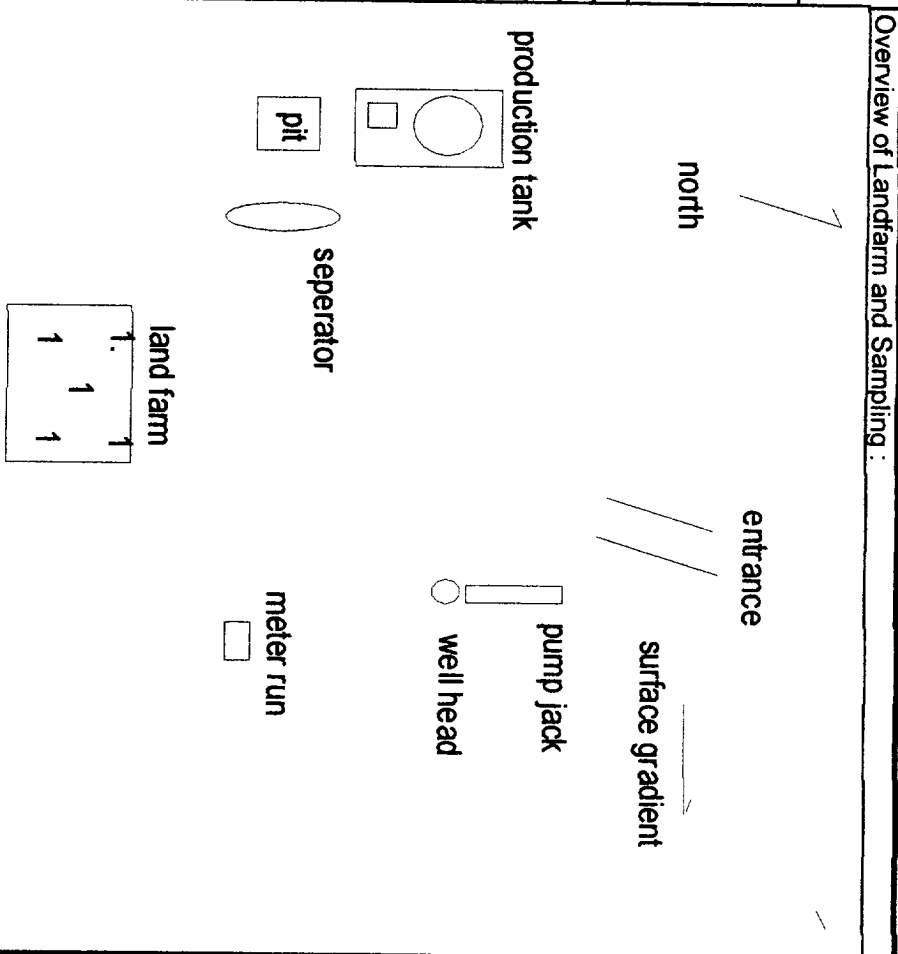
JICARILLA APACHE TRIBE
ENVIRONMENTAL PROTECTION OFFICE
P.O. BOX 507
DULCE, NEW MEXICO 87528

ON-SITE SOIL REMEDIATION REPORT

Operator: <u>Taurus Exploration USA Inc.</u> Telephone: <u>(505) 325 - 6800</u>	
Address: <u>2198 Bloomfield Hwy, Farmington N.M. 87401</u>	
Facility or Well Name: <u>Jicarilla 35-12</u>	
Location: Unit or Qtr/Qtr Sec <u>I</u> Sec <u>35</u> T <u>25 N</u> R <u>5 W</u> County <u>Rio Arriba</u>	
Land Type: <u>Range</u>	
Date Remediation Started: <u>8/3/98</u> Date Completed: <u>12/1/98</u>	
Remediation Method: Landfarmed <u>X</u> Approx. cubic yards <u>43</u>	
Composted <u> </u>	
Other <u> </u>	
<p>Depth to Groundwater: (pts) <u>0</u></p> <p>Distance to an Ephemeral Stream (pts) <u>0</u></p> <p>Distance to Nearest Lake, Playa, or Watering Pond (pts) <u>0</u></p> <p>Wellhead Protection Area (pts) <u>0</u></p> <p>Distance to Surface Water (pts) <u>0</u></p> <p>RANKING SCORE (TOTAL POINTS): <u>0</u></p>	<p style="text-align: center;">Final Closure Sampling:</p> <p>Sampling Date: <u>12/1/98</u> Time: <u>11:00</u></p> <p>Sample Results:</p> <p>Field Headspace (ppm) <u>3.6</u></p> <p>TPH (ppm) <u><10</u> Method <u>8015</u></p> <p>Other: <u> </u></p>
<p>I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF</p> <p>DATE: <u>1/6/99</u> PRINTED NAME <u>VIRGIL CHAVEZ</u></p> <p>SIGNATURE <u></u> AND TITLE <u>ENV. SPECIALIST</u></p>	
<p>AFTER REVIEW OF THE SOIL REMEDIATION INFORMATION. ON-SITE SOIL REMEDIATION IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.</p> <p>APPROVED: YES <u>X</u> NO <u> </u> (REASON) <u>was not Benz & Co</u></p> <p>SIGNED: <u></u> DATE: <u>1-7-99</u></p>	

Client : Taurus Exploration USA Inc.

Date Started : August 3, 1998 Date Completed : December 1, 1998

Location : <u>Jicarilla 35-12</u>			Overview of Landfarm and Sampling :																																									
Quad : <u>I</u> Section : <u>35</u>																																												
Township: <u>25 N</u> Range: <u>5 W</u>																																												
Pit : <u>Separator Pit</u>																																												
Reference <u>130' S 30 W</u> from wellhead.			<table border="1"><thead><tr><th>Sample #</th><th>Location</th><th>OVM</th></tr></thead><tbody><tr><td>1</td><td>Comp 1</td><td>3.6</td></tr><tr><td>2</td><td></td><td></td></tr><tr><td>3</td><td></td><td></td></tr><tr><td>4</td><td></td><td></td></tr><tr><td>5</td><td></td><td></td></tr><tr><td>6</td><td></td><td></td></tr><tr><td>7</td><td></td><td></td></tr><tr><td>8</td><td></td><td></td></tr><tr><td>9</td><td></td><td></td></tr><tr><td>10</td><td></td><td></td></tr><tr><td>11</td><td></td><td></td></tr><tr><td>12</td><td></td><td></td></tr></tbody></table>			Sample #	Location	OVM	1	Comp 1	3.6	2			3			4			5			6			7			8			9			10			11			12		
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1	Comp 1	3.6																																										
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11																																												
12																																												
Size: <u>45' x 50' x 1'</u>																																												
Yds : <u>43</u>																																												
<u>1</u> <u>5 - Point Composites</u>																																												
Comments : <u>Soil is moist, brown, sandy/loam, with no visible staining and a slight hydrocarbon odor.</u>																																												
<u>A sample from composite # 1 was sent to IML for GRO/DRO analysis.</u>																																												
Environmental Specialist : <u>JE</u>																																												



Phone (505) 326-4737 Fax (505) 325-4182

Inter-Mountain Laboratories, Inc.

2506 West Main Street, Farmington, NM 87401

GASOLINE RANGE ORGANICS - GRO

ENERGEN RESOURCES

Project ID:	Jicarilla 35-12 Landfarm	Report Date:	12/31/98
Sample ID:	Composite #1	Date Sampled:	12/02/98 ^{rs}
Lab ID:	0398G06956	Date Received:	12/02/98
Sample Matrix:	Soil	Date Analyzed:	12/29/98*
Condition:	Cool/Intact		


TPH GAS-RANGE (MOD EPA 8015)	RESULT	DETECTION LIMIT
Gasoline-Range Petroleum Hydrocarbons	<5.0	5.0 mg/Kg

ND - Analyte not detected at the stated detection limit.

Reference:

Comments:

*Sample was analyzed within the holding times, however, due to instrument problems and QC failure, the sample had to be re-analyzed to verify results.


Reported By:


Reviewed By:



Phone (505) 326-4737 Fax (505) 325-4182

Inter-Mountain Laboratories, Inc.

2506 West Main Street, Farmington, NM 87401

DIESEL RANGE ORGANICS - DRO

ENERGEN RESOURCES


Project ID:	Jicarilla 35-12 Landfarm	Report Date:	12/31/98
Sample ID:	Composite #1	Date Sampled:	12/02/98
Lab ID:	0398G06956	Date Received:	12/02/98
Sample Matrix:	Soil	Date Analyzed:	12/16/98
Condition:	Cool/Intact		

TPH DIESEL-RANGE (MOD EPA 8015)	RESULT	DETECTION LIMIT
Diesel-Range Petroleum Hydrocarbons	<5.0	5.0 mg/Kg

ND - Analyte not detected at the stated detection limit.

Reference:

Comments:


Reported By:


Reviewed By:



Inter-Mountain
Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name		Project Location		ANALYSES / PARAMETERS							
Sampler: (Signature)		Chain of Custody Tape No.		Remarks							
Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers						
<div>BS</div> <div>intact, hand delivered</div>											
Relinquished by: (Signature)			Date	Time	Received by: (Signature)	Date	Time				
Relinquished by: (Signature)			12/2/98	14:00	Michael Anderson	12/2/98	14:40				
Relinquished by: (Signature)			12/2/98	14:40	Received by laboratory: (Signature)	12/2/98	14:40				

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