Site Clean-up Summary and Remediation Work Plan

Southwest Royalties, Inc.
Wilderspin Federal Battery
S-11, T-21S, R-27E
Eddy County, New Mexico

SPORT ENVIRONMENTAL SERVICES, PLLC
502 N. Big Spring Street, Midland, Texas 79701
Business: 432.683.1100 Fax: 888.500.0622

August 10, 2009

Mr. Mike Bratcher
State of New Mexico
Oil Conservation Division
1301 W. Grand
Artesia, New Mexico 88210

Re: **Southwest Royalties, Inc.**
Wilderspin Federal Battery
Section 11, T-21S, R-27E
Eddy County, New Mexico

Dear Mr. Bratcher,

On behalf of Southwest Royalties, Inc., Sport Environmental Services is providing the enclosed Site Clean-up Summary and Remediation Work Plan for the Wilderspin Federal Battery release.

In response to the Release Notification and Corrective Action Report (Form C-141) dated April 3, 2009, an effort to fully delineate the release location both horizontally and vertically through extensive soil investigation was conducted. Site ranking criteria was used to determine the degree of remediation for the location. The acceptable concentrations resulting from the form are as follows; Benzene 10 ppm, BTEX 50 ppm, TPH 5000 ppm. Under NMOCD regulations, if a release has occurred, chloride concentrations are set at 250 ppm. Attached, please find the Site Excavations denoting sample locations along with the associated analytical results. Each soil sample was analyzed for **Total BTEX** (Benzene; Toluene; Ethylbenzene; m,p-Xylene; o-Xylene, Total Xylenes, and total BTEX) using the Method 8021B, **Total Petroleum Hydrocarbons** (C_6-C_{12} Gasoline Range Hydrocarbons or GRO; C_{12}-C_{18} Diesel Range Hydrocarbons or DRO; C_{28}-C_{35} Oil Range Hydrocarbons; and Total TPH) using Method SW8015, and **Chlorides (Cl)** using EPA Method 300. There were a total of three excavation events, conducted April 6-9, April 27, and May 8, 2009.

The initial excavation began April 6, 2009 and was completed on April 9, 2009. During that time, approximately 340 cubic yards of contaminated caliche were excavated from around the release area, tanks and the firewall. The caliche was excavated to sample point depths ranging from .5 feet to 10 feet. All excavated caliche was stockpiled on impermeable liners at the battery. Production facility piping was removed from tank area to promote excavation efforts. An oil sump, to protect during loading releases, was removed and a hole was discovered within the sump container. This discovery resulted in further excavation of contaminated caliche beneath the sump. Sample collection was conducted on April 9, 2009, in which sixteen (16) soil samples were taken from the floor of excavation. As indicated in the Sample Data Summary, analytical results indicated eleven (11) sample locations were higher than the desired limits.

The second excavation of contaminated caliche, followed by sampling, took place on April 27, 2009. Three 500 bbl, out-of-service, steel oil storage tanks were removed by Southwest Royalties and sent to salvage in order to allow for further excavation of contaminated soils located under the removed tanks. Approximately 200 cubic yards of contaminated caliche were excavated from the area beneath the three tanks and the East and West

excavation floor. Fourteen soil samples were collected and analytical results indicated seven of those samples were above the allowable limits.

A third excavation and sampling event took place on May 8, 2009. Using analytical results from the April 27, 2009 sampling event as a guide, approximately 80 cubic yards of contaminated caliche was removed and stockpiled on the impermeable liners. Seven soil samples were collected and analytical results indicated that one sample point, EEF6-003, had an elevated chloride concentration of 281 ppm. Soil samples were also collected from each of the three stockpiles, in which analytical results showed TPH values to be much higher than the allowable 5000 ppm. Sample results are as follows:

SP1-001	11,603 ppm TPH
SP2-001	12,786 ppm TPH
SP3-001	10,163 ppm TPH

Soil management recommendation for the Wilderspin Federal Battery is insitu soil treatment. Stockpiled caliche would be blended with clean caliche in a 3:1 ratio and hydrocarbons would be bioremediated to acceptable levels for reuse at the battery. By utilizing the Amigo model program we can demonstrate that the location is not a threat to groundwater contamination and since the location is an oilfield production facility the aforementioned caliche will have to be addressed, if or when the facility has been dismantled or abandoned.

Attached, please find the hydrogeology report which further provides evidence of, through researched wells and hydrogeology of the area surrounding the Wilderspin Federal Tank Battery, the poor quality of existing groundwater due to elevated chlorides and total dissolved solids (TDS), making it unsuitable for livestock and irrigation. As indicated in the report, the land use in the area is predominantly mining of high chloride minerals, and oil and gas exploration and production.

Several sampling events following excavation and stockpiling of soil showed decreasing levels of chlorides at increasing depths. To predict the migration of chlorides to groundwater we have utilized American Petroleum Institute's (API's) **AMIGO** online decision support tool which allows us to assess the threat to groundwater and soil posed by a produced water (brine) release. Attached, please find the Amigo report along with supporting hydrogeological report. After running many different scenarios using different mass loads and distances to nearest wells, the most conservative approach is to take the actual distance to the closest well and the stockpile chloride concentration average. This was determined to be the most realistic expectation rather than create soil boring values from previous sampling events. This is because the stockpiled soil will be used to spread evenly over the excavation area, which is the area of concern. The average chloride concentration for the stockpiled soil is 344mg/kg. The maximum depth of excavation was at ten feet and the chloride concentration used was the average of sampling at depths from five to seven feet. Ten feet was chosen to represent worst case scenario since it represented the maximum depth of excavation. The resulting projections from AMIGO show that the maximum concentration of chlorides in the groundwater will be 747 mg/L at 121 years. This is an increase of 35 mg/L over the background concentration of 712 mg/L.

Attached please find the supporting documentation which includes Form C-141, Site Plans denoting sample locations, Sample Data Summaries, Analytical Results, Hydrogeological Report (includes AMIGO output chart) and photographs taken April 2 thru May 8, 2009.

If you have any questions, or need additional information, please contact me at my office (432.683.1100) or on my cell (432.553.2172).

Sincerely,

Sally M. Jones
Environmental Compliance Specialist

Southwest Royalties, Inc.
Wilderspin Federal Battery
S-11, T-21S, R-27E
Eddy County, New Mexico

Form C-141

Wilderspin Federal Battery

Rec'd 4/9/09

District I
1625 N French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

30-015-21031

Release Notification and Corrective Action

pMCB 0910448390

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company SOUTHWEST ROYALTIES, INC.	Contact DAWN M. HOWARD
Address 6 DESTA DRIVE, STE 2100, MIDLAND, TX 79705	Telephone No. 432/688-3267
Facility Name WILDERSPIN FEDERAL	Facility Type BATTERY – closest to well #1

Surface Owner BLM –grazing permit allottee Winston Ballard #77020	Mineral Owner BLM/SWR	Lease No. NMNM1478B/16282

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	11	21S	27E	1980	N	1980	W	EDDY

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release OIL	Volume of Release ~115	Volume Recovered 57
Source of Release HOLE IN TANK	Date and Hour of Occurrence 4/1/09 midnight	Date and Hour of Discovery 4/2/09 10:30 a.m
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD – Mike Bratcher; BLM – Jim Amos	
By Whom? Dawn Howard	Date and Hour 4/2/09 11:30 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A hole in the side of oil stock tank at the battery was discovered when the pumper gauged. The tank will be repaired.

Describe Area Affected and Cleanup Action Taken.*
All oil was contained within the firewall. Vacuumed and recovered 57 Bbls of oil. A backhoe was used to scrape and dust location due to cattle in the area. An environmental contractor's services have been obtained to analyze and aid in the efforts to remediate this location.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Dawn M. Howard	OIL CONSERVATION DIVISION
Printed Name: DAWN M. HOWARD	Approved by District Supervisor: Signed By Mike Bratcher
Title: OPERATIONS ASSISTANT	Approval Date: APR 17 2009 Expiration Date:
E-mail Address: DHOWARD@CLAYTONWILLIAMS.COM	Conditions of Approval: Remediation per OCD Rules & Guidelines Attached ☐
Date: 4/3/09 Phone: 432/688-3267	

Attach Additional Sheets If Necessary

2RP-300

4/7/09
NOTE: Excavation of impacted material has commenced & remediation is ongoing.

District I
1625 N French Dr , Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S St Francis Dr , Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company SOUTHWEST ROYALTIES, INC.	Contact DAWN M. HOWARD
Address 6 DESTA DRIVE, STE 2100, MIDLAND, TX 79705	Telephone No. 432/688-3267
Facility Name WILDERSPIN FEDERAL	Facility Type BATTERY – closest to well #1

Surface Owner BLM –grazing permit allottee Winston Ballard #77020	Mineral Owner BLM/SWR	Lease No. NMNM1478B/16282

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	11	21S	27E	1980	N	1980	W	EDDY

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release OIL	Volume of Release ~115	Volume Recovered 57
Source of Release HOLE IN TANK	Date and Hour of Occurrence 4/1/09 midnight	Date and Hour of Discovery 4/2/09 10:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD – Mike Bratcher; BLM – Jim Amos	
By Whom? Dawn Howard	Date and Hour 4/2/09 11:30 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A hole in the side of oil stock tank at the battery was discovered when the pumper gauged.
Follow up:
Contaminated caliche has been excavated from the battery and stockpiled on impermeable liners awaiting bioremediation approval. The oil storage tank has been repaired and three oil storage tanks (that were not in service) have been removed and taken to salvage.

Describe Area Affected and Cleanup Action Taken.*
Majority of oil was contained within the firewall. Vacuumed and recovered 57 Bbls of free oil. A backhoe was used to scrape and dust location due to cattle in the area. An environmental expert contacted.
Follow up:
Excavated around tanks and took soil analysis (please see attached excavation plan) Contaminated caliche has been excavated from the battery and stockpiled on impermeable liners awaiting bioremediation approval. The oil storage tank has been repaired and three oil storage tanks (that were not in service) have been removed and taken to salvage.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Dawn M. Howard	OIL CONSERVATION DIVISION	
Printed Name: DAWN M. HOWARD	Approved by District Supervisor	
Title. OPERATIONS ASSISTANT	Approval Date:	Expiration Date:
E-mail Address: DHOWARD@CLAYTONWILLIAMS.COM	Conditions of Approval:	Attached ☐
Date: 8/11/09 Phone: 432/688-3267		

Site Information and Metrics

	NMOCD Notified **04/02/2009**

SITE: Wilderspin Federal Battery	Assigned Site Reference #:
Company: Southwest Royalties, Inc.	
Street Address 6 Desta Drive, Ste 2100	
Mailing Address: 6 Desta Drive, Ste 2100	
City, State, Zip: Midland, Texas 79705	
Representative: Dawn M. Howard	
Representative Telephone: 432.688.3267	
Telephone.	
Fluid volume released (bbls): ~115	Recovered (bbls). ~55
>25 bbls. Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days. (Also applies to unauthorized releases >500 mcf Natural Gas)	
5-25 bbls Submit form C-141 within 15 days (Also applies to unaughorized releases of 50-500 mcf Natural Gas)	
Leak, Spill, or Pit (LSP) Name: Wilderspin Federal Battery	
Source of Contamination: Hole in side of tank	
Land Owner, i e.,BLM, ST, Fee, Other: BLM	
LSP Dimensions·	
LSP Area:	
Location of Reference Point (RP):	
Location distance and direction from RP	
Latitude: 32.496	
Longitude· 104 162667	
Elevation above mean sea level	
Feet from North Section Line: 1980'	
Feet from West Section Line: 1980'	
Location - Unit or ¼¼·	Unit Letter. H
Location - Section: 11	
Location - Township: 21S	
Location - Range: 27E	
Surface water body within 1000' radius of site: **None**	
Surface water body within 1000' radius of site·	
Domestic water wells within 1000' radius of site: **None**	
Domestic water wells within 1000' radius of site:	
Agricultural water wells within 1000' radius of site: **None**	
Agricultural water wells within 1000' radius of site:	
Public water supply wells within 1000' radius of site: **None**	
Depth from land surface to ground water (DG): **186 ft**	
Depth of Contamination (DC): **2 ft**	
Depth to ground water (DG - DC = DtGW): **186-2 = 184 ft**	

1. Ground Water	2. Wellhead Protection Area	3. Distance to Surface Water Body
If Depth to GW <50 feet· *20 points*	If <1000' from water source, or; <200' from private domestic water source: *20 points*	<200 horizontal feet: *20 points*
If Depth to GW 50 to 99 feet: *10 points*		200 to 100 horizontal feet: *10 points*
If Depth to GW >100 feet *0 points*	If >1000' from water source, or; >200' from private domestic water source: *0 points*	>1000 horizontal feet: *0 points*
Ground Water Score = 0	*Wellhead Protection Area Score = 0*	*Surface Water Score = 0*
Site Rank (1+2+3)=		

Total Site Ranking Score and Acceptable Concentrations

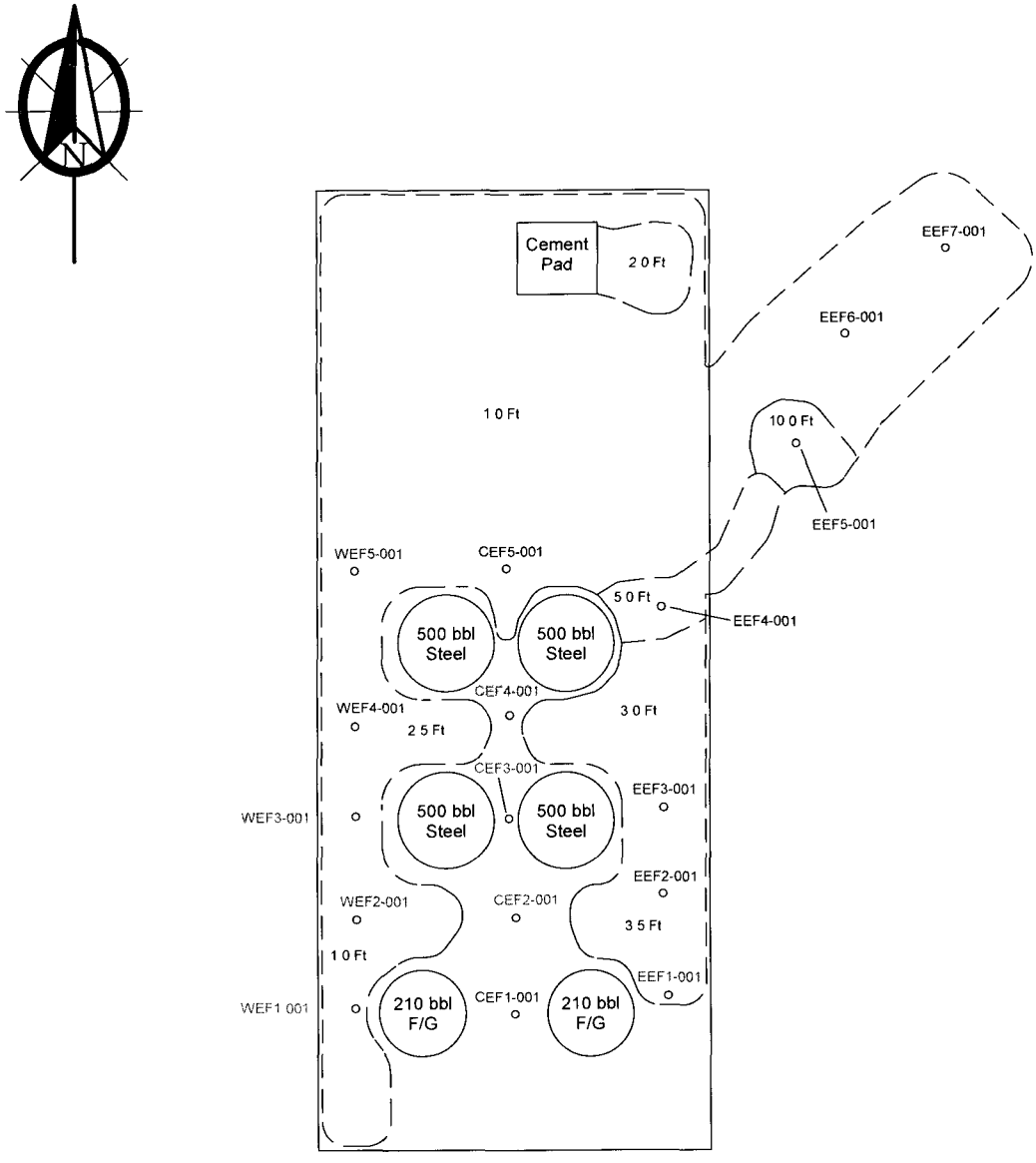
Parameter	>19	10 - 19	0 - 9
Benzene[1]	10 ppm	10 ppm	10 ppm
BTEX[1]	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1000 ppm	5000 ppm

[1]100 ppm field VOC headspace measurement may be substituted for lab analysis

Southwest Royalties, Inc.
Wilderspin Federal Battery
S-11, T-21S, R-27E
Eddy County, New Mexico

SITE PLANS DENOTING SAMPLING LOCATIONS

Wilderspin Federal Battery



0 25 50

FEET

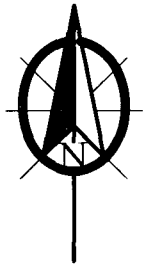
The following denotes one or more elevated contaminants

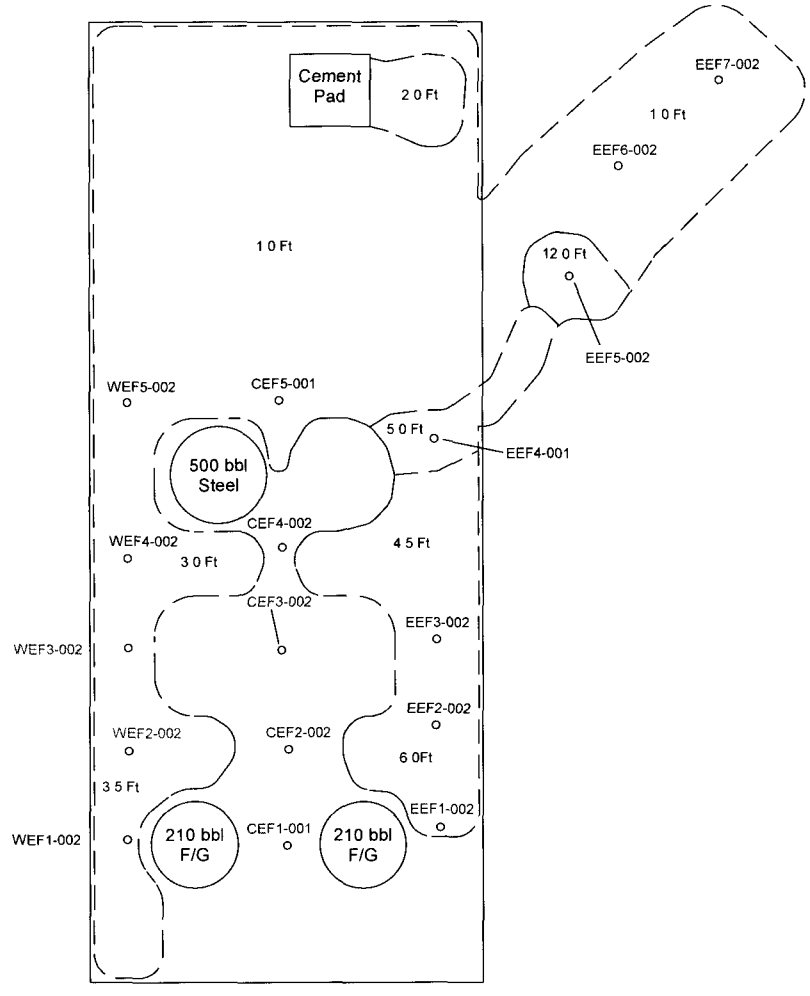
Chlorides only sample ID
BTEX only sample ID
TPH only sample ID
Chlorides and TPH sample ID
TPH and BTEX sample ID

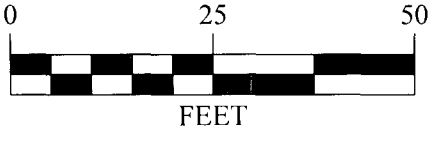
Southwest Royalties, Inc.
Wilderspin Federal Battery
Sec. 11, T-21-S, R-27-E,
Eddy County, New Mexico

Site Excavation

April 9, 2009







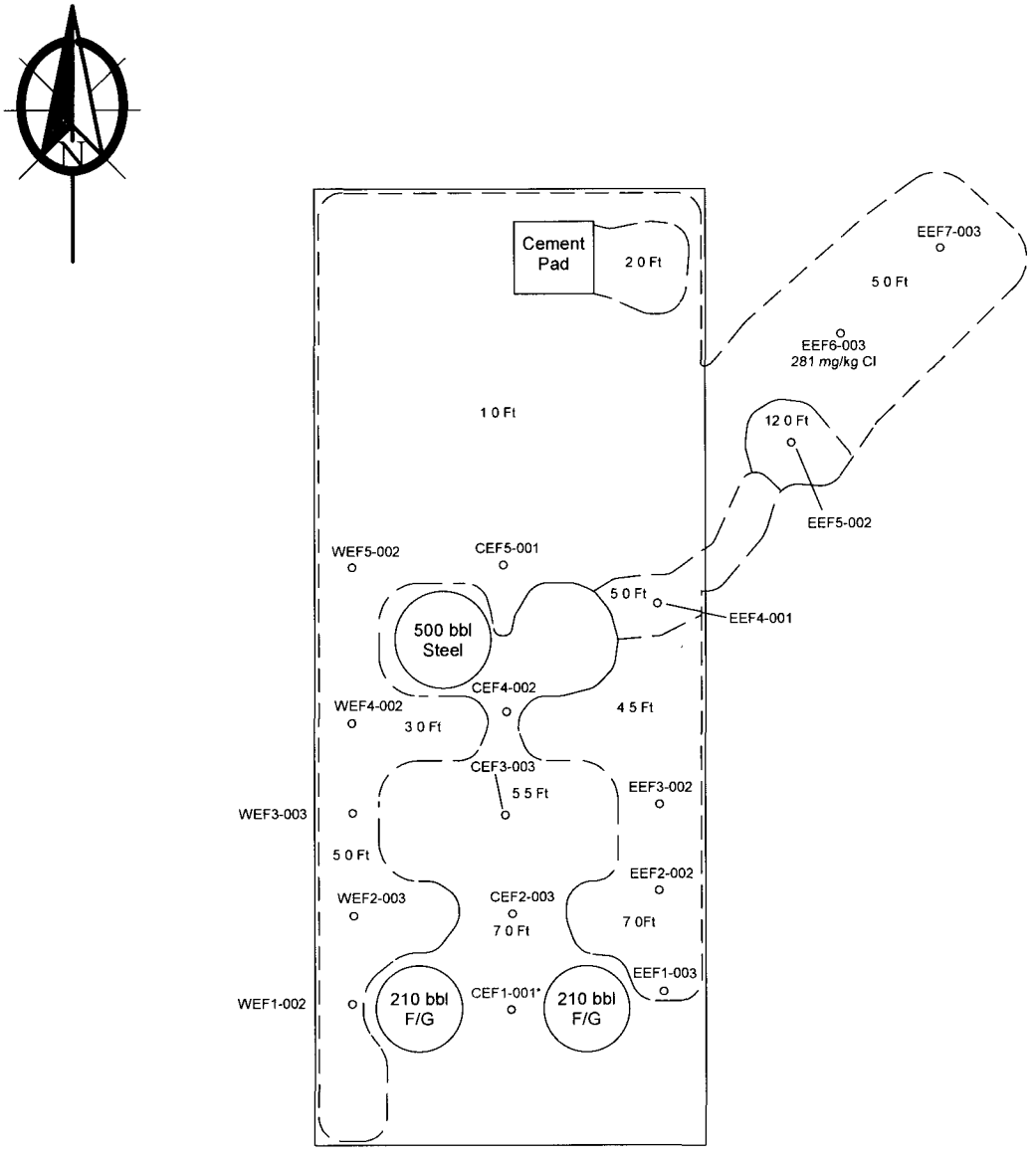
The following denotes one or *more elevated contaminants*

Chlorides only sample ID
BTEX only sample ID
TPH only sample ID
Chlorides and TPH sample ID
TPH and BTEX sample ID

Southwest Royalties, Inc.
Wilderspin Federal Battery
Sec. 11, T-21-S, R-27-E,
Eddy County, New Mexico

Site Excavation

April 27, 2009
Round Two Samples



0 25 50

FEET

*Note Due to production tanks CEF1 could not be excavated deeper

The following denotes one or more elevated contaminants

Chlorides only sample ID
BTEX only sample ID
TPH only sample ID
Chlorides and TPH sample ID
TPH and BTEX sample ID

Southwest Royalties, Inc.
Wilderspin Federal Battery
Sec. 11, T-21-S, R-27-E,
Eddy County, New Mexico

Site Excavation

May 8, 2009
Round Three Samples

Southwest Royalties, Inc.
Wilderspin Federal Battery
S-11, T-21S, R-27E
Eddy County, New Mexico

SAMPLE DATA SUMMARY

Wilderspin Federal Battery

Sample Data Summary

Project Name: Southwest Royalties, Inc. - Wilderspin Federal Battery
Project Location: Eddy County, New Mexico

Analytical Results

Methods: EPA 418.1 (TPH), EPA 8021B (BTEX), EPA 300 (Cl)

Sample ID	Lab ID	Matrix	Sample Depth	Date Sampled	Date Received	Carbon Ranges C6-C12	Carbon Ranges C12-C28	Carbon Ranges C28-C35	TPH Total Petroleum Hydrocarbons	Benzene	Toluene	Ethylbenzene	Xylene (p/m)	Xylene (o)	Total Xylenes	Total BTEX	Chloride (Cl) (mg/kg wet)	% Moisture
Excavation Sampling																		
WF2-001	329402-001	Soil	2 in	4/3/2009 0.00	4/7/2009 7.54				**248000**	2 673	76 02	51 12	180.7	66.24	246 94	**376.753**	**11300**	8.73
WF3-001	329402-002	Soil	2 in	4/3/2009 0 00	4/7/2009 7 54				**189000**	6 463	85.59	40 35	139.3	47 83	187.13	**319.533**	**267**	5 92
CF1-001	329402-003	Soil	2 in	4/3/2009 0:00	4/7/2009 7:54				**278000**	4.728	80.49	53 60	205.4	70 62	276 02	**414.838**	76 0	8 16
CF2-001	329402-004	Soil	2 in	4/3/2009 0:00	4/7/2009 7:54				**39400**	**27.18**	170 8	57 76	198 8	64 85	263.65	**519.39**	**2030**	8 37
ER1-001	329402-005	Soil	2 in	4/3/2009 0.00	4/7/2009 7 54				**98100**	ND	5 225	8 511	34 52	13 29	47 81	**61.546**	**347**	2.98
ER2-001	329402-006	Soil	2 in	4/3/2009 0 00	4/7/2009 7 54				**78300**	ND	2 819	5 108	20.70	7 968	28 668	36 595	125	2 50
ER3-001	329402-007	Soil	2 in	4/3/2009 0.00	4/7/2009 7 54				**82500**	ND	7.287	13 21	51.74	19 05	70.79	**91.287**	137	2 49
ER4-001	329402-008	Soil	2 in	4/3/2009 0.00	4/7/2009 7:54				**582000**	ND	20 61	22 48	85 76	31 83	117.59	**160.68**	69 1	3 40
ER5-001	329402-009	Soil	2 in	4/3/2009 0 00	4/7/2009 7 54				**227000**	ND	41 75	46 48	176.5	70.53	247 03	**335.26**	44 3	5.20
ER6-001	329402-010	Soil	2 in	4/3/2009 0:00	4/7/2009 7 54				**173000**	3 910	111 2	99.11	352 2	129 6	481.8	**696.02**	**9210**	4 23
SF1-001	329402-011	Soil	2 in	4/3/2009 0 00	4/7/2009 7:54				**56500**	5.276	135 1	92 13	312 0	118 5	430 5	**663.006**	45 9	9.60
SF2-001	329402-012	Soil	2 in	4/3/2009 0:00	4/7/2009 7:54				**73300**	0 0022	0 0073	0.0020	0 0051	0.0022	0.0073	0 0188	39 5	7 39
SF3-001	329402-013	Soil	2 in	4/3/2009 0.00	4/7/2009 7 54				**48500**	0 0027	0 0071	0.0018	0.0045	0 0018	0 0063	0.0179	33 3	1 85

Sample Data Summary

Project Name: Southwest Royalties, Inc. - Wilderspin Federal Battery
Project Location: Eddy County, New Mexico

						Analytical Results													
						Methods: EPA 418.1 (TPH), EPA 8021B (BTEX), EPA 300 (Cl)													
Sample ID	Lab ID	Matrix	Sample Depth	Date Sampled	Date Received	Carbon Ranges C6-C12	Carbon Ranges C12-C28	Carbon Ranges C28-C35	TPH, Total Petroleum Hydrocarbons	Benzene	Toluene	Ethylbenzene	Xylene (p/m)	Xylene (o)	Total Xylenes	Total BTEX	Chloride (Cl) (mg/kg wet)	% Moisture
Excavation Sampling																		
NF1-001	329402-014	Soil	2 in	4/3/2009 0:00	4/7/2009 7:54				**253000**	**16.28**	249 3	119.6	432 1	149 2	581 3	**966.48**	23.1	10 65
NF2-001	329402-015	Soil	2 in	4/3/2009 0:00	4/7/2009 7:54				**181000**	**14.45**	207.3	111 7	372.5	126 0	498.5	**831.95**	54 3	7.59
NF3-001	329402-016	Soil	2 in	4/3/2009 0:00	4/7/2009 7:54				**252000**	6 120	136.5	84.20	293 5	97 58	391 08	**617.9**	ND	8 49
EF1-001	329402-017	Soil	2 in	4/3/2009 0.00	4/7/2009 7.54				**169000**	**12.95**	165 8	75.30	256 7	89 95	346 65	**600.7**	185	6 17
EF2-001	329402-018	Soil	2 in	4/3/2009 0 00	4/7/2009 7 54				**282000**	**11.13**	221 0	114.1	397 8	138 4	536.2	**882.43**	74.5	8.79
EF3-001	329402-019	Soil	2 in	4/3/2009 0 00	4/7/2009 7 54				**73000**	0 0032	0 0150	0 0033	0.0115	0 0040	0 0155	0 037	**1960**	ND
WF1-001	329402-020	Soil	2 in	4/3/2009 0.00	4/7/2009 7:54				**219000**	7.214	202.0	119 8	421.1	147 5	568.6	**879.614**	64 8	9 21
WR1-001	329402-021	Soil	2 in	4/3/2009 0:00	4/7/2009 7 54				**230000**	2 074	70.72	57 10	193 6	72 32	265.92	**395.814**	ND	7.41
WR2-001	329402-022	Soil	2 in	4/3/2009 0.00	4/7/2009 7.54				**114000**	ND	51.95	47 55	168.7	63 47	232.17	**331.67**	33.9	4.54
WR3-001	329402-023	Soil	2 in	4/3/2009 0:00	4/7/2009 7:54				**140000**	ND	82 50	64 75	226.2	80 82	307.02	**454.27**	7.24	4 65
WR4-001	329402-024	Soil	2 in	4/3/2009 0.00	4/7/2009 7:54				**148000**	ND	16 34	23 06	89.89	33.74	123 63	**163.03**	20 9	3 34

Sample Data Summary

Project Name: Southwest Royalties, Inc. - Wilderspin Federal Battery
Project Location: Eddy County, New Mexico

						Analytical Results													
						Methods: SW8015 Mod (TPH), EPA 8021B (BTEX), EPA 300 (Cl)													
Sample ID	Lab ID	Matrix	Sample Depth	Date Sampled	Date Received	Carbon Ranges C6-C12 (mg/kg)	Carbon Ranges C12-C28	Carbon Ranges C28-C35	TPH Total Petroleum Hydrocarbons	Benzene	Toluene	Ethylbenzene	Xylene (p/m)	Xylene (o)	Total Xylenes	Total BTEX	Chloride (Cl) (mg/kg wet)	% Moisture
Excavation Sampling																			
WEF1-001	329770-001	Soil	1 ft	4/9/2009 9 28	4/9/2009 16:03	6370	15900	1640	**23910**	0.6117	19 29	19.81	72.65	26 54	99 19	**138.9017**	70 9	4.94
WEF2-001	329770-002	Soil	1 ft	4/9/2009 9:31	4/9/2009 16 03	6600	23700	2270	**32570**	ND	5.832	5.975	23.51	8.523	32.033	43 84	**306**	5 73
WEF3-001	329770-003	Soil	1 ft	4/9/2009 9:37	4/9/2009 16 03	1280	11000	1020	**13300**	0.0014	0 0496	0 1129	0.3965	0 2124	0.6089	0.7728	**497**	5 38
WEF4-001	329770-004	Soil	1 ft	4/9/2009 9 40	4/9/2009 16 03	417	5160	463	**6040**	ND	0 0014	0 0216	0 0492	0.0096	0 0588	0 0845	21 9	4 84
WEF5-001	329770-005	Soil	2.5 ft	4/9/2009 9 44	4/9/2009 16.03	28.4	542	56 0	626 4	ND	0 3587	0 3640	1 399	0.5301	1 9291	2.6518	53.3	5.68
CEF1-001	329770-006	Soil	6 in	4/9/2009 9:48	4/9/2009 16 03	22 3	1970	316	2308 3	ND	ND	ND	ND	ND	ND	ND	31.3	20.19
CEF2-001	329770-007	Soil	6 in	4/9/2009 9:51	4/9/2009 16 03	2610	13700	1470	**17780**	ND	5.991	7.913	29 07	11 63	40 7	**54.604**	122	12 98
CEF3-001	329770-008	Soil	6 in	4/9/2009 9:54	4/9/2009 16 03	13100	19300	2140	**34540**	6.894	75.77	32.38	112 9	36 97	149 87	**264.914**	14.0	12 11
CEF4-001	329770-009	Soil	6 in	4/9/2009 9 57	4/9/2009 16 03	511	5310	538	**6359**	ND	ND	0 6555	2.421	0.7878	3 2088	3.8643	**5390**	13 05
CEF5-001	329770-010	Soil	6 in	4/9/2009 10 00	4/9/2009 16:03	ND	75 6	ND	75 6	ND	0.0028	ND	0 0025	0.0013	0.0038	0.0066	ND	12 53
EEF1-001	329770-011	Soil	3 5 ft	4/9/2009 10.08	4/9/2009 16:03	206	8000	837	**9043**	ND	0 0023	ND	0 0056	0 0012	0.0068	0.0091	**928**	12 07
EEF2-001	329770-012	Soil	3.5 ft	4/9/2009 10:12	4/9/2009 16 03	28.9	491	53 7	573 6	ND	0.0134	0.0073	0 0276	0 0106	0.0382	0 0589	17 6	9 09
EEF3-001	329770-013	Soil	3 ft	4/9/2009 10:16	4/9/2009 16:03	2590	10200	1010	**13800**	ND	ND	ND	ND	ND	ND	ND	117	7 73

Sample Data Summary

Project Name: Southwest Royalties, Inc. - Wilderspin Federal Battery
Project Location: Eddy County, New Mexico

						Analytical Results													
						Methods: SW8015 Mod (TPH), EPA 8021B (BTEX), EPA 300 (Cl)													
Sample ID	Lab ID	Matrix	Sample Depth	Date Sampled	Date Received	Carbon Ranges C6-C12	Carbon Ranges C12-C28	Carbon Ranges C28-C35	TPH, Total Petroleum Hydrocarbons	Benzene	Toluene	Ethylbenzene	Xylene (p/m)	Xylene (o)	Total Xylenes	Total BTEX	Chloride (Cl) (mg/kg wet)	% Moisture
Excavation Sampling (continued)																		
EEF4-001	329770-014	Soil	5 ft	4/9/2009 10 19	4/9/2009 16 03	28.9	486	46 7	561.6	ND	0.0128	0 0232	0.0593	0.0225	0.0818	0 1178	31 9	11 18
EEF5-001	329770-015	Soil	10 ft	4/9/2009 10 22	4/9/2009 16 03	370	8980	1050	**10400**	ND	ND	0 0433	0.0741	0.0031	0 0772	0 1205	47.4	10 91
EEF6-001	329770-016	Soil	6 in	4/9/2009 10 26	4/9/2009 16 03	ND	519	61.8	580.8	ND	ND	ND	ND	ND	ND	ND	**938**	9.37
EEF7-001	329770-017	Soil	6 in	4/9/2009 10 30	4/9/2009 16:03	59 5	1570	91 4	1720 9	ND	ND	ND	ND	ND	ND	ND	**1490**	10.85

Sample Data Summary

Project Name: Southwest Royalties, Inc. - Wilderspin Federal Battery
Project Location: Eddy County, New Mexico

						Analytical Results													
						Methods: SW8015 Mod (TPH), EPA 8021B (BTEX), EPA 300 (Cl)													
Sample ID	Lab ID	Matrix	Sample Depth	Date Sampled	Date Received	Carbon Ranges C6-C12 (mg/kg)	Carbon Ranges C12-C28	Carbon Ranges C28-C35	TPH, Total Petroleum Hydrocarbons	Benzene	Toluene	Ethylbenzene	Xylene (p/m)	Xylene (o)	Total Xylenes	Total BTEX	Chloride (Cl) (mg/kg wet)	% Moisture
Excavation Sampling																		
EEF1-002	331171-001	Soil	6 ft	4/27/2009 0 00	4/27/2009 0:00	55 1	1080	112	1247								**1280**	11.75
EEF2-002	331171-002	Soil	6 ft	4/27/2009 0 00	4/27/2009 0.00	41 3	685	68 6	794.9									11 05
EEF3-002	331171-003	Soil	6 ft	4/27/2009 0:00	4/27/2009 0 00	348	3550	298	4196									9.64
EEF5-001	331171-004	Soil	12 ft	4/27/2009 0 00	4/27/2009 0.00	40 1	399	28.3	467 4									11 54
EEF6-002	331171-005	Soil	1 ft	4/27/2009 0:00	4/27/2009 0 00												**867**	8 03
EEF7-002	331171-006	Soil	1 ft	4/27/2009 0:00	4/27/2009 0:00												**500**	8 81
CEF2-001	331171-007	Soil	6 ft	4/27/2009 0:00	4/27/2009 0:00	1890	10200	784	**12874.0**	ND	0 1497	1.324	1 59	3.912	5 502	6.976		7 07
CEF3-002	331171-008	Soil	4 5 ft	4/27/2009 0:00	4/27/2009 0 00	1220	5180	515	**6915**	ND	ND	2.459	6 151	7 971	14.122	16 581		12 57
CEF4-002	331171-009	Soil	4 5 ft	4/27/2009 0 00	4/27/2009 0.00	406	3970	309	4685	0.0075	0 0251	0 22	0 6489	0 3008	0.9497	1 202		11 81
WEF1-002	331171-010	Soil	3 5 ft	4/27/2009 0.00	4/27/2009 0.00	30 2	138	ND	168	ND	ND	0 0067	0 0183	0 0108	0 0291	0.036		10 57

Sample Data Summary

Project Name: Southwest Royalties, Inc. - Wilderspin Federal Battery
Project Location: Eddy County, New Mexico

						Analytical Results													
						Methods: SW8015 Mod (TPH), EPA 8021B (BTEX), EPA 300 (Cl)													
Sample ID	Lab ID	Matrix	Sample Depth	Date Sampled	Date Received	Carbon Ranges C6-C12	Carbon Ranges C12-C28	Carbon Ranges C28-C35	TPH, Total Petroleum Hydrocarbons	Benzene	Toluene	Ethylbenzene	Xylene (p/m)	Xylene (o)	Total Xylenes	Total BTEX	Chloride (Cl) (mg/kg wet)	% Moisture
Excavation Sampling (continued)																		
WEF2-002	331171-011	Soil	3.5 ft	4/27/2009 0 00	4/27/2009 0 00	1330	3720	283	**5333**								**538**	9 63
WEF3-002	331171-012	Soil	3 5 ft	4/27/2009 0 00	4/27/2009 0.00	853	4310	380	**5543**								**540**	9 69
WEF4-002	331171-013	Soil	3 ft	4/27/2009 0 00	4/27/2009 0.00	500	2500	218	3218									11 15
WEF5-002	331171-014	Soil	3 ft	4/27/2009 0 00	4/27/2009 0 00	ND	43.5	ND	44									11.77

Sample Data Summary

Project Name: Southwest Royalties, Inc. - Wilderspin Federal Battery
Project Location: Eddy County, New Mexico

						Analytical Results												
						Methods: SW8015 Mod (TPH), EPA 8021B (BTEX), EPA 300 (Cl)												
Sample ID	Lab ID	Matrix	Sample Depth	Date Sampled	Date Received	Carbon Ranges C6-C12 (mg/kg)	Carbon Ranges C12-C28	Carbon Ranges C28-C35	TPH, Total Petroleum Hydrocarbons	Benzene	Toluene	Ethylbenzene	Xylene (p/m)	Xylene (o)	Total Xylenes	Total BTEX	Chloride (Cl) (mg/kg wet)	% Moisture
Excavation Sampling																		
EEF1-003	332665-001	Soil	7 ft	5/8/2009 0 00	5/13/2009 0 00												138	9 71
EEF6-003	332665-002	Soil	5 ft	5/8/2009 0 00	5/13/2009 0 00												**281**	11
EEF7-003	332665-003	Soil	5 ft	5/8/2009 0 00	5/13/2009 0 00												229	8.37
WEF2-003	332665-004	Soil	5 ft	5/8/2009 0 00	5/13/2009 0:00	76 3	883	ND	959.3								83 3	8 74
WEF3-003	332665-005	Soil	5 ft	5/8/2009 0 00	5/13/2009 0.00	ND	39.5	ND	40								130	8 1
CEF2-003	332665-006	Soil	7 ft	5/8/2009 0.00	5/13/2009 0 00	1130	3390	193	4713 0									10 88
CEF3-003	332665-007	Soil	5.5 ft	5/8/2009 0.00	5/13/2009 0.00	149	1400	90 7	1639.7									10.47
SP1-001	332665-008	Soil	0 ft	5/8/2009 0 00	5/13/2009 0 00	409	10300	894	**11603**	ND	0.0022	0 0036	0.0122	0 0072	0 0194	0 025	**798**	1.46
SP2-001	332665-009	Soil	0 ft	5/8/2009 0 00	5/13/2009 0 00	740	11100	946	**12786**	ND	0 0423	0.0526	0 2005	0.1017	0 3022	0 397	49 7	2 34
SP3-001	332665-010	Soil	0 ft	5/8/2009 0 00	5/13/2009 0 00	1250	8290	623	**10163**	ND	ND	0.0199	0 0634	0.0916	0 155	0 175	183.0	6 65

Southwest Royalties. Inc.
Wilderspin Federal Battery
S-11, T-21S, R-27E
Eddy County, New Mexico

ANALYTICAL RESULTS
XENCO LABORATORIES
Wilderspin Federal Battery

Analytical Report 329402

for

Sport Environmental Services, PLLC

Project Manager: Debi Moore

Southwest Royalties

Wilderspin Federal Battery

08-APR-09

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Miramar, FL E86349
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

XENCO Laboratories

08-APR-09

Project Manager: **Debi Moore**
Sport Environmental Services, PLLC
502 North Big Spring Street
Midland, TX 79701

Reference: XENCO Report No: **329402**
Southwest Royalties
Project Address:

Debi Moore:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 329402. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 329402 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 329402

Sport Environmental Services, PLLC, Midland, TX

Southwest Royalties

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
WF2-001	S	Apr-03-09 00:00	2 In	329402-001
WF3-001	S	Apr-03-09 00:00	2 In	329402-002
CF1-001	S	Apr-03-09 00:00	2 In	329402-003
CF2-001	S	Apr-03-09 00:00	2 In	329402-004
ER1-001	S	Apr-03-09 00:00	2 In	329402-005
ER2-001	S	Apr-03-09 00:00	2 In	329402-006
ER3-001	S	Apr-03-09 00:00	2 In	329402-007
ER4-001	S	Apr-03-09 00:00	2 In	329402-008
ER5-001	S	Apr-03-09 00:00	2 In	329402-009
ER6-001	S	Apr-03-09 00:00	2 In	329402-010
SF1-001	S	Apr-03-09 00:00	2 In	329402-011
SF2-001	S	Apr-03-09 00:00	2 In	329402-012
SF3-001	S	Apr-03-09 00:00	2 In	329402-013
NF1-001	S	Apr-03-09 00:00	2 In	329402-014
NF2-001	S	Apr-03-09 00:00	2 In	329402-015
NF3-001	S	Apr-03-09 00:00	2 In	329402-016
EF1-001	S	Apr-03-09 00:00	2 In	329402-017
EF2-001	S	Apr-03-09 00:00	2 In	329402-018
EF3-001	S	Apr-03-09 00:00	2 In	329402-019
WF1-001	S	Apr-03-09 00:00	2 In	329402-020
WR1-001	S	Apr-03-09 00:00	2 In	329402-021
WR2-001	S	Apr-03-09 00:00	2 In	329402-022
WR3-001	S	Apr-03-09 00:00	2 In	329402-023
WR4-001	S	Apr-03-09 00:00	2 In	329402-024

Certificate of Analysis Summary 329402

Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Federal Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: Tue Apr-07-09 07 54 am
Report Date: 08-APR-09
Project Manager: Brent Barron, II

Analysis Requested	*Lab Id:*	329402-001		329402-002		329402-003		329402-004		329402-005		329402-006	
	Field Id:	WF2-001		WF3-001		CF1-001		CF2-001		ER1-001		ER2-001	
	Depth:	2- In		2- In		2- In		2- In		2- In		2- In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00	
Anions by EPA 300	*Extracted:*												
	Analyzed:	Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		11300	219	267	10 6	76 0	21 8	2030	54 6	347	10 3	125	5 13
BTEX by EPA 8021B	*Extracted:*	Apr-07-09 08 00		Apr-07-09 08 00		Apr-07-09 08 00		Apr-07-09 10 00		Apr-07-09 08 00		Apr-07-09 08 00	
	Analyzed:	Apr-07-09 10 40		Apr-07-09 11 01		Apr-07-09 11 21		Apr-07-09 22 12		Apr-07-09 12 03		Apr-07-09 12 23	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		2 673	2 191	6 463	2 126	4 728	2 169	27 18	5 413	ND	1 021	ND	1 022
Toluene		76 02	4 383	85 59	4 252	80 49	4 338	170 8	10 83	5 225	2 041	2 819	2 043
Ethylbenzene		51 12	2 191	40 35	2 126	53 60	2 169	57 76	5 413	8 511	1 021	5 108	1 022
m,p-Xylenes		180 7	4 383	139 3	4 252	205 4	4 338	198 8	10 83	34 52	2 041	20 70	2 043
o-Xylene		66 24	2 191	47 83	2 126	70 62	2 169	64 85	5 413	13 29	1 021	7 968	1 022
Total Xylenes		246 94	2 191	187 13	2 126	276 02	2 169	263 65	5 413	47 81	1 021	28 668	1 022
Total BTEX		376 753	2 191	319 533	2 126	414 838	2 169	519 39	5 413	61 546	1 021	36 595	1 022
Percent Moisture	*Extracted:*												
	Analyzed:	Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		8 73	1 00	5 92	1 00	8 16	1 00	8 37	1 00	2 98	1 00	2 50	1 00
TPH by EPA 418.1	*Extracted:*												
	Analyzed:	Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
TPH, Total Petroleum Hydrocarbons		248000	548	189000	531	278000	544	39400	109	98100	103	78300	103

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 329402

Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Federal Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: Tue Apr-07-09 07 54 am
Report Date: 08-APR-09
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	329402-007		329402-008		329402-009		329402-010		329402-011		329402-012	
	Field Id:	ER3-001		ER4-001		ER5-001		ER6-001		SF1-001		SF2-001	
	Depth:	2- In		2- In		2- In		2- In		2- In		2- In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00	
Anions by EPA 300	***Extracted:***												
	Analyzed:	Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		137	5 13	69 1	5 18	44 3	5 27	9210	209	45 9	11 1	39 5	21 6
BTEX by EPA 8021B	***Extracted:***	Apr-07-09 08 00		Apr-07-09 08 00		Apr-07-09 08 00		Apr-07-09 08 00		Apr-07-09 10 00		Apr-07-09 08 00	
	Analyzed:	Apr-07-09 12 44		Apr-07-09 13 04		Apr-07-09 13 25		Apr-07-09 13 46		Apr-07-09 22 53		Apr-07-09 14 48	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	1 023	ND	1 029	ND	1 053	3 910	2 080	5 276	2 217	0 0022	0 0011
Toluene		7 287	2 047	20 61	2 058	41 75	2 105	111 2	4 160	135 1	4 434	0 0073	0 0022
Ethylbenzene		13 21	1 023	22 48	1 029	46 48	1 053	99 11	2 080	92 13	2 217	0 0020	0 0011
m,p-Xylenes		51 74	2 047	85 76	2 058	176 5	2 105	352 2	4 160	312 0	4 434	0 0051	0 0022
o-Xylene		19 05	1 023	31 83	1 029	70 53	1 053	129 6	2 080	118 5	2 217	0 0022	0 0011
Total Xylenes		70 79	1 023	117 59	1 029	247 03	1 053	481 8	2 080	430 5	2 217	0 0073	0 0011
Total BTEX		91 287	1 023	160 68	1 029	335 26	1 053	696 02	2 080	663 006	2 217	0 0188	0 0011
Percent Moisture	***Extracted:***												
	Analyzed:	Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2 49	1 00	3 40	1 00	5 20	1 00	4 23	1 00	9 60	1 00	7 39	1 00
TPH by EPA 418.1	***Extracted:***												
	Analyzed:	Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
TPH, Total Petroleum Hydrocarbons		82500	103	582000	518	227000	527	173000	522	56500	111	73300	540

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 329402

Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Federal Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: Tue Apr-07-09 07 54 am
Report Date: 08-APR-09
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	329402-013		329402-014		329402-015		329402-016		329402-017		329402-018	
	Field Id:	SF3-001		NF1-001		NF2-001		NF3-001		EF1-001		EF2-001	
	Depth:	2- In		2- In		2- In		2- In		2- In		2- In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00	
Anions by EPA 300	***Extracted:***												
	Analyzed:	Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 10 26	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		33 3	10 2	23 1	5 60	54 3	10 8	ND	21 9	185	10 7	74 5	11 0
BTEX by EPA 8021B	***Extracted:***	Apr-07-09 08 00		Apr-08-09 08 00		Apr-08-09 08 00		Apr-08-09 08 00		Apr-08-09 08 00		Apr-08-09 08 00	
	Analyzed:	Apr-07-09 15 08		Apr-08-09 13 40		Apr-08-09 14 01		Apr-08-09 14 22		Apr-08-09 14 42		Apr-08-09 15 03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		0 0027	0 0010	16 28	5 596	14 45	5 411	6 120	5 464	12 95	5 329	11 13	5 482
Toluene		0 0071	0 0020	249 3	11 19	207 3	10 82	136 5	10 93	165 8	10 66	221 0	10 96
Ethylbenzene		0 0018	0 0010	119 6	5 596	111 7	5 411	84 20	5 464	75 30	5 329	114 1	5 482
m,p-Xylenes		0 0045	0 0020	432 1	11 19	372 5	10 82	293 5	10 93	256 7	10 66	397 8	10 96
o-Xylene		0 0018	0 0010	149 2	5 596	126 0	5 411	97 58	5 464	89 95	5 329	138 4	5 482
Total Xylenes		0 0063	0 0010	581 3	5 596	498 5	5 411	391 08	5 464	346 65	5 329	536 2	5 482
Total BTEX		0 0179	0 0010	966 48	5 596	831 95	5 411	617 9	5 464	600 7	5 329	882 43	5 482
Percent Moisture	***Extracted:***												
	Analyzed:	Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		1 85	1 00	10 65	1 00	7 59	1 00	8 49	1 00	6 17	1 00	8 79	1 00
TPH by EPA 418.1	***Extracted:***												
	Analyzed:	Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 12 08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
TPH, Total Petroleum Hydrocarbons		48500	509	253000	560	181000	541	252000	546	169000	533	282000	548

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 329402

Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Federal Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: Tue Apr-07-09 07 54 am
Report Date: 08-APR-09
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	329402-019		329402-020		329402-021		329402-022		329402-023		329402-024	
	Field Id:	EF3-001		WF1-001		WR1-001		WR2-001		WR3-001		WR4-001	
	Depth:	2- In		2- In		2- In		2- In		2- In		2- In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00		Apr-03-09 00 00	
Anions by EPA 300	***Extracted:***												
	Analyzed:	Apr-07-09 10 26		Apr-07-09 10 26		Apr-07-09 21 06		Apr-07-09 21 06		Apr-07-09 21 06		Apr-07-09 21 06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1960	50 4	64 8	22 0	ND	5 40	33 9	10 5	7 24	5 24	20 9	5 17
BTEX by EPA 8021B	***Extracted:***	Apr-07-09 10 00		Apr-08-09 08 00		Apr-07-09 08 00		Apr-07-09 10 00		Apr-07-09 10 00		Apr-07-09 10 00	
	Analyzed:	Apr-07-09 20 50		Apr-08-09 15 23		Apr-07-09 18 05		Apr-07-09 21 10		Apr-07-09 21 31		Apr-07-09 21 52	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		0 0032	0 0010	7 214	5 507	2 074	1 080	ND	1 048	ND	2 098	ND	1 035
Toluene		0 0150	0 0020	202 0	11 01	70 72	2 160	51 95	2 095	82 50	4 195	16 34	2 069
Ethylbenzene		0 0033	0 0010	119 8	5 507	57 10	1 080	47 55	1 048	64 75	2 098	23 06	1 035
m,p-Xylenes		0 0115	0 0020	421 1	11 01	193 6	2 160	168 7	2 095	226 2	4 195	89 89	2 069
o-Xylene		0 0040	0 0010	147 5	5 507	72 32	1 080	63 47	1 048	80 82	2 098	33 74	1 035
Total Xylenes		0 0155	0 0010	568 6	5 507	265 92	1 080	232 17	1 048	307 02	2 098	123 63	1 035
Total BTEX		0 037	0 0010	897 614	5 507	395 814	1 080	331 67	1 048	454 27	2 098	163 03	1 035
Percent Moisture	***Extracted:***												
	Analyzed:	Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00		Apr-07-09 17 00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		ND	1 00	9 21	1 00	7 41	1 00	4 54	1 00	4 65	1 00	3 34	1 00
TPH by EPA 418.1	***Extracted:***												
	Analyzed:	Apr-07-09 12 08		Apr-07-09 12 08		Apr-07-09 13 26		Apr-07-09 13 26		Apr-07-09 13 26		Apr-07-09 13 26	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
TPH, Total Petroleum Hydrocarbons		73000	504	219000	551	230000	540	114000	524	140000	524	148000	517

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

Brent Barron
Odessa Laboratory Director

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329402,

Project ID: Wilderspin Federal Battery

Lab Batch #: 755193 **Sample:** 527900-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/07/09 09:07

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0296	0 0300	99	80-120	
4-Bromofluorobenzene	0 0302	0 0300	101	80-120	

Lab Batch #: 755193 **Sample:** 527900-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/07/09 09:28

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0304	0 0300	101	80-120	
4-Bromofluorobenzene	0 0320	0 0300	107	80-120	

Lab Batch #: 755193 **Sample:** 527900-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/07/09 10:08

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0263	0 0300	88	80-120	
4-Bromofluorobenzene	0 0293	0 0300	98	80-120	

Lab Batch #: 755193 **Sample:** 329402-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 10:40

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0241	0 0300	80	80-120	
4-Bromofluorobenzene	0 0355	0 0300	118	80-120	

Lab Batch #: 755193 **Sample:** 329402-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 11:01

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0224	0 0300	75	80-120	*
4-Bromofluorobenzene	0 0331	0 0300	110	80-120	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329402,

Project ID: Wilderspin Federal Battery

Lab Batch #: 755193 **Sample:** 329402-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 11:21

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0249	0 0300	83	80-120	
4-Bromofluorobenzene	0 0398	0 0300	133	80-120	*

Lab Batch #: 755193 **Sample:** 329402-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 12:03

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0239	0 0300	80	80-120	
4-Bromofluorobenzene	0 0360	0 0300	120	80-120	

Lab Batch #: 755193 **Sample:** 329402-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 12:23

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0247	0 0300	82	80-120	
4-Bromofluorobenzene	0 0350	0 0300	117	80-120	

Lab Batch #: 755193 **Sample:** 329402-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 12:44

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0230	0 0300	77	80-120	*
4-Bromofluorobenzene	0 0384	0 0300	128	80-120	*

Lab Batch #: 755193 **Sample:** 329402-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 13:04

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0238	0 0300	79	80-120	*
4-Bromofluorobenzene	0 0372	0 0300	124	80-120	*

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329402,

Project ID: Wilderspin Federal Battery

Lab Batch #: 755193 **Sample:** 329402-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 13:25

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0238	0 0300	79	80-120	*
4-Bromofluorobenzene	0 0437	0 0300	146	80-120	*

Lab Batch #: 755193 **Sample:** 329402-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 13:46

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0247	0 0300	82	80-120	
4-Bromofluorobenzene	0 0428	0 0300	143	80-120	*

Lab Batch #: 755193 **Sample:** 329402-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 14:48

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0244	0 0300	81	80-120	
4-Bromofluorobenzene	0 0248	0 0300	83	80-120	

Lab Batch #: 755193 **Sample:** 329402-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 15:08

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0270	0 0300	90	80-120	
4-Bromofluorobenzene	0 0194	0 0300	65	80-120	*

Lab Batch #: 755193 **Sample:** 329402-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 18:05

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0215	0 0300	72	80-120	*
4-Bromofluorobenzene	0 0460	0 0300	153	80-120	*

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329402,

Project ID: Wilderspin Federal Battery

Lab Batch #: 755193 **Sample:** 329402-012 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 18:26

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0287	0 0300	96	80-120	
4-Bromofluorobenzene	0 0289	0 0300	96	80-120	

Lab Batch #: 755193 **Sample:** 329402-012 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 18:46

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0273	0 0300	91	80-120	
4-Bromofluorobenzene	0 0276	0 0300	92	80-120	

Lab Batch #: 755198 **Sample:** 527904-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/07/09 19:27

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0313	0 0300	104	80-120	
4-Bromofluorobenzene	0 0339	0 0300	113	80-120	

Lab Batch #: 755198 **Sample:** 527904-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/07/09 19:48

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0308	0 0300	103	80-120	
4-Bromofluorobenzene	0 0347	0 0300	116	80-120	

Lab Batch #: 755198 **Sample:** 527904-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/07/09 20:29

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0254	0 0300	85	80-120	
4-Bromofluorobenzene	0 0296	0 0300	99	80-120	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329402,

Project ID: Wilderspin Federal Battery

Lab Batch #: 755198 **Sample:** 329402-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 20:50

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0247	0 0300	82	80-120	
4-Bromofluorobenzene	0 0150	0 0300	50	80-120	**

Lab Batch #: 755198 **Sample:** 329402-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 21:10

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0238	0 0300	79	80-120	*
4-Bromofluorobenzene	0 0474	0 0300	158	80-120	*

Lab Batch #: 755198 **Sample:** 329402-023 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 21:31

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0232	0 0300	77	80-120	*
4-Bromofluorobenzene	0 0420	0 0300	140	80-120	*

Lab Batch #: 755198 **Sample:** 329402-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 21:52

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0219	0 0300	73	80-120	*
4-Bromofluorobenzene	0 0414	0 0300	138	80-120	*

Lab Batch #: 755198 **Sample:** 329402-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 22:12

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0228	0 0300	76	80-120	**
4-Bromofluorobenzene	0 0310	0 0300	103	80-120	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329402,

Project ID: Wilderspin Federal Battery

Lab Batch #: 755198 **Sample:** 329402-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/09 22:53

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0239	0 0300	80	80-120	
4-Bromofluorobenzene	0 0399	0 0300	133	80-120	**

Lab Batch #: 755198 **Sample:** 329402-019 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/09 04:01

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0275	0 0300	92	80-120	
4-Bromofluorobenzene	0 0164	0 0300	55	80-120	**

Lab Batch #: 755198 **Sample:** 329402-019 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/09 04:22

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0272	0 0300	91	80-120	
4-Bromofluorobenzene	0 0133	0 0300	44	80-120	**

Lab Batch #: 755272 **Sample:** 527956-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/09 09:13

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0299	0 0300	100	80-120	
4-Bromofluorobenzene	0 0322	0 0300	107	80-120	

Lab Batch #: 755272 **Sample:** 527956-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/09 10:58

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0290	0 0300	97	80-120	
4-Bromofluorobenzene	0 0298	0 0300	99	80-120	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329402,

Project ID: Wilderspin Federal Battery

Lab Batch #: 755272 **Sample:** 527956-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/08/09 12:24

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0261	0 0300	87	80-120	
4-Bromofluorobenzene	0 0322	0 0300	107	80-120	

Lab Batch #: 755272 **Sample:** 329402-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/09 13:40

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0209	0 0300	70	80-120	**
4-Bromofluorobenzene	0 0326	0 0300	109	80-120	

Lab Batch #: 755272 **Sample:** 329402-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/09 14:01

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0231	0 0300	77	80-120	**
4-Bromofluorobenzene	0 0338	0 0300	113	80-120	

Lab Batch #: 755272 **Sample:** 329402-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/09 14:22

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0210	0 0300	70	80-120	**
4-Bromofluorobenzene	0 0309	0 0300	103	80-120	

Lab Batch #: 755272 **Sample:** 329402-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/09 14:42

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0210	0 0300	70	80-120	**
4-Bromofluorobenzene	0 0292	0 0300	97	80-120	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329402,

Project ID: Wilderspin Federal Battery

Lab Batch #: 755272 **Sample:** 329402-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/09 15:03

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0245	0 0300	82	80-120	
4-Bromofluorobenzene	0 0338	0 0300	113	80-120	

Lab Batch #: 755272 **Sample:** 329402-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/09 15:23

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0240	0 0300	80	80-120	
4-Bromofluorobenzene	0 0355	0 0300	118	80-120	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

Blank Spike Recovery

Project Name: Southwest Royalties

Work Order #: 329402 **Project ID:** Wilderspin Federal Battery

Lab Batch #: 755139 **Sample:** 755139-1-BKS **Matrix:** Solid

Date Analyzed: 04/07/2009 **Date Prepared:** 04/07/2009 **Analyst:** LATCOR

Reporting Units: mg/kg **Batch #:** 1

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
	BLANK /BLANK SPIKE RECOVERY STUDY					
Chloride	ND	10 0	10 0	100	80-120	

Lab Batch #: 755160 **Sample:** 755160-1-BKS **Matrix:** Solid

Date Analyzed: 04/07/2009 **Date Prepared:** 04/07/2009 **Analyst:** LATCOR

Reporting Units: mg/kg **Batch #:** 1

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
	BLANK /BLANK SPIKE RECOVERY STUDY					
Chloride	ND	10 0	10 4	104	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Southwest Royalties

Work Order #: 329402 **Project ID:** Wilderspin Federal Battery

Analyst: ASA **Date Prepared:** 04/07/2009 **Date Analyzed:** 04/07/2009

Lab Batch ID: 755193 **Sample:** 527900-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 1000	0 0915	92	0 1	0 0930	93	2	70-130	35	
Toluene	ND	0 1000	0 0869	87	0 1	0 0884	88	2	70-130	35	
Ethylbenzene	ND	0 1000	0 0892	89	0 1	0 0919	92	3	71-129	35	
m,p-Xylenes	ND	0 2000	0 1784	89	0 2	0 1840	92	3	70-135	35	
o-Xylene	ND	0 1000	0 0846	85	0 1	0 0883	88	4	71-133	35	

Analyst: ASA **Date Prepared:** 04/07/2009 **Date Analyzed:** 04/07/2009

Lab Batch ID: 755198 **Sample:** 527904-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 1000	0 0959	96	0 1	0 0956	96	0	70-130	35	
Toluene	ND	0 1000	0 0928	93	0 1	0 0926	93	0	70-130	35	
Ethylbenzene	ND	0 1000	0 0993	99	0 1	0 0999	100	1	71-129	35	
m,p-Xylenes	ND	0 2000	0 1985	99	0 2	0 1995	100	1	70-135	35	
o-Xylene	ND	0 1000	0 0965	97	0 1	0 0971	97	1	71-133	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Southwest Royalties

Work Order #: 329402 **Project ID:** Wilderspin Federal Battery

Analyst: ASA **Date Prepared:** 04/08/2009 **Date Analyzed:** 04/08/2009

Lab Batch ID: 755272 **Sample:** 527956-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 2000	0 1911	96	0 2	0 1760	88	8	70-130	35	
Toluene	ND	0 2000	0 1861	93	0 2	0 1705	85	9	70-130	35	
Ethylbenzene	ND	0 2000	0 1939	97	0 2	0 1751	88	10	71-129	35	
m,p-Xylenes	ND	0 4000	0 3941	99	0 4	0 3558	89	10	70-135	35	
o-Xylene	ND	0 2000	0 1878	94	0 2	0 1696	85	10	71-133	35	

Analyst: LATCOR **Date Prepared:** 04/07/2009 **Date Analyzed:** 04/07/2009

Lab Batch ID: 755131 **Sample:** 755131-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by EPA 418.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH, Total Petroleum Hydrocarbons	ND	2500	2230	89	125000	110000	88	192	65-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Southwest Royalties

Work Order #: 329402
Analyst: LATCOR
Lab Batch ID: 755136 **Sample:** 755136-1-BKS
Units: mg/kg

Date Prepared: 04/07/2009
Batch #: 1

Project ID: Wilderspin Federal Battery
Date Analyzed: 04/07/2009
Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by EPA 418.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH, Total Petroleum Hydrocarbons	ND	2500	2510	100	2500	2460	98	2	65-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Southwest Royalties

Work Order #: 329402

Lab Batch #: 755139 **Project ID:** Wilderspin Federal Battery

Date Analyzed: 04/07/2009 **Date Prepared:** 04/07/2009 **Analyst:** LATCOR

QC- Sample ID: 329402-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Inorganic Anions by EPA 300 **Analytes**	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**%R [D]**	**Control Limits %R**	**Flag**
Chloride	11300	4380	16000	107	80-120	

Lab Batch #: 755160

Date Analyzed: 04/07/2009 **Date Prepared:** 04/07/2009 **Analyst:** LATCOR

QC- Sample ID: 329402-021 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Inorganic Anions by EPA 300 **Analytes**	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**%R [D]**	**Control Limits %R**	**Flag**
Chloride	ND	108	124	115	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Southwest Royalties

Work Order #: 329402 **Project ID:** Wilderspin Federal Battery

Lab Batch ID: 755193 **QC- Sample ID:** 329402-012 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/07/2009 **Date Prepared:** 04/07/2009 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0 0022	0 1080	0 0445	39	0 1080	0 0404	35	10	70-130	35	X
Toluene	0 0073	0 1080	0 0355	26	0 1080	0 0322	23	10	70-130	35	X
Ethylbenzene	0 0020	0 1080	0 0164	13	0 1080	0 0152	12	8	71-129	35	X
m,p-Xylenes	0 0051	0 2160	0 0337	13	0 2160	0 0309	12	9	70-135	35	X
o-Xylene	0 0022	0 1080	0 0123	9	0 1080	0 0131	10	6	71-133	35	X

Lab Batch ID: 755198 **QC- Sample ID:** 329402-019 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/08/2009 **Date Prepared:** 04/07/2009 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0 0032	0 5043	0 1323	26	0 5043	0 1513	29	13	70-130	35	X
Toluene	0 0150	0 5043	0 1965	36	0 5043	0 2105	39	7	70-130	35	X
Ethylbenzene	0 0033	0 5043	0 0605	11	0 5043	0 0688	13	13	71-129	35	X
m,p-Xylenes	0 0115	1 009	0 2079	19	1 009	0 2073	19	0	70-135	35	X
o-Xylene	0 0040	0 5043	0 0785	15	0 5043	0 0765	14	3	71-133	35	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Southwest Royalties

Work Order # : 329402 **Project ID:** Wilderspin Federal Battery

Lab Batch ID: 755131 **QC- Sample ID:** 329402-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/07/2009 **Date Prepared:** 04/07/2009 **Analyst:** LATCOR

Reporting Units: mg/kg

TPH by EPA 418.1 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH, Total Petroleum Hydrocarbons	248000	137000	196000	0	137000	182000	0	7	65-135	35	X

Lab Batch ID: 755136 **QC- Sample ID:** 329402-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/07/2009 **Date Prepared:** 04/07/2009 **Analyst:** LATCOR

Reporting Units: mg/kg

TPH by EPA 418.1 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH, Total Petroleum Hydrocarbons	230000	135000	280000	37	135000	243000	10	14	65-135	35	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Sample Duplicate Recovery

Project Name: Southwest Royalties

Work Order #: 329402

Lab Batch #: 755139 **Project ID:** Wilderspin Federal Battery
Date Analyzed: 04/07/2009 **Date Prepared:** 04/07/2009 **Analyst:** LATCOR
QC- Sample ID: 329402-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Anions by EPA 300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	11300	11400	1	20	

Lab Batch #: 755160
Date Analyzed: 04/07/2009 **Date Prepared:** 04/07/2009 **Analyst:** LATCOR
QC- Sample ID: 329402-021 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Anions by EPA 300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	ND	ND	NC	20	

Lab Batch #: 755115
Date Analyzed: 04/07/2009 **Date Prepared:** 04/07/2009 **Analyst:** BEV
QC- Sample ID: 329398-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	24 5	24 7	1	20	

Lab Batch #: 755118
Date Analyzed: 04/07/2009 **Date Prepared:** 04/07/2009 **Analyst:** BEV
QC- Sample ID: 329402-012 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7 39	8 94	19	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Debra Moore
Company Name: Spirit Environmental Services
Company Address:
City/State/Zip:
Telephone No: 683-1100
Sampler Signature: Chuck Daniels
Fax No:
e-mail:
Project Name: Southwest Royalties
Project #: Williamson Federal Battery
Project Loc:
PO #:
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 329402

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: TW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP/TOTAL: TPH 418.1 / 8015M	TPH TX 1005	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N O R M	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs
1	WF2-001		2"	4/3/09			1	X								S	X			X				X			X
2	WF3-001						1																				
3	CF1-001						1																				
4	CF2-001						1																				
5	ER1-001						1																				
6	ER2-001						1																				
7	ER3-001						1																				
8	ER4-001						1																				
9	ER5-001						1																				
10	ER6-001						1																				

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time
Chuck Daniels	4/3/09	5:30			
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by ELOT	4/1/09	7:54

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered by Sampler/Client Rep ?	Y	N
by Couner? UPS DHL FedEx Lone Su		

Temperature Upon Receipt: 2 °C

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765
Phone 432-563-1800
Fax: 432-563-1713

Project Manager: Debbie Moore
Company Name: Spear Environmental Services
Company Address:
City/State/Zip:
Telephone No: Fax No:
Sampler Signature: Chuck Dorroh e-mail:

Project Name: Southwest Royalties
Project #: Wildcat Federal Battery
Project Loc:
PO #:
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 329402

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	Analyze For: TPH 418.1 / 8015M	TPH TX 1005	TX 1006	TCLP: Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	8021B/5030 or BTEX 8260	RCI	NORM	RUSH TAT (Pre-Schedule) (24,48, 72 hrs)
11	SF1-001		2"	4/3/09			1	X									5		X				X					X			X
12	SF2-001						1																								
13	SF3-001						1																								
14	NF1-001						1																								
15	NF2-001						1																								
16	NF3-001						1																								
17	EF1-001						1																								
18	EF2-001						1																								
19	EF3-001						1																								
20	WF1-001						1																								

Special Instructions.

(20) 4/7/09

Relinquished by	Date	Time	Received by	Date	Time
Chuck Dorroh	4/7/09	5:30			
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by ELOT	Date 4/7/09	Time 11:54

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on coolers)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep ?	Y	N
by Courier? UPS DHL FedEx Lone Star		

Temperature Upon Receipt: 2 °C

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Debra Moore
Company Name: Sport Environmental Services
Company Address:
City/State/Zip:
Telephone No: Fax No:
Sampler Signature: Chuck Daniels e-mail:

Project Name: Southwest Royalties
Project #: Wildcat Federal Battery
Project Loc.:
PO #:
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 329402

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: GW=Drinking Water SL=Sludge	GW=Groundwater S=Soil/Solid	NP=Non Potable Specify Other	Analyze For: TCLP TPH 418.1	TPH 1005	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N O R M	RUSH TAT (Pre-Scheduled) 24, 48, 72 hrs
21	WR1-001		2"	4/3/09			1	X									S		X			X							X
22	WR2-001						1																						
23	WR3-001						1																						
24	WR4-001						1																						

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time
Chuck Daniels	4/3/09	5:30			
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				4/1/09	7:54

Laboratory Comments:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N
Labels on container(s) Y N
Custody seals on container(s) Y N
Custody seals on cooler(s) Y N
Sample Hand Delivered by Sampler/Client Rep ? Y N
by Courier? UPS DHL FedEx Lone Star
Temperature Upon Receipt: 2 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Sport Environmental

Date/ Time: 04-07-09 @ 0754

Lab ID #: 329402

Initials: BRB

Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	(Yes)	No	2.0 °C	
#2	Shipping container in good condition? Box	(Yes)	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	(Not Present)	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	(Not Present)	
#5	Chain of Custody present?	(Yes)	No		
#6	Sample instructions complete of Chain of Custody?	(Yes)	No		
#7	Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8	Chain of Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont / Lid	
#9	Container label(s) legible and intact?	(Yes)	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11	Containers supplied by ELOT?	(Yes)	No		
#12	Samples in proper container/ bottle?	(Yes)	No	See Below	
#13	Samples properly preserved?	(Yes)	No	See Below	
#14	Sample bottles intact?	(Yes)	No		
#15	Preservations documented on Chain of Custody?	(Yes)	No		
#16	Containers documented on Chain of Custody?	(Yes)	No		
#17	Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18	All samples received within sufficient hold time?	(Yes)	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	(Not Applicable)	
#20	VOC samples have zero headspace?	(Yes)	No	Not Applicable	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken

Check all that Apply

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

Analytical Report 329770

for

Sport Environmental Services, PLLC

Project Manager: Debi Moore

Southwest Royalties

Wilderspin Battery

13-APR-09

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Miramar, FL E86349
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

13-APR-09

Project Manager: **Debi Moore**
Sport Environmental Services, PLLC
502 North Big Spring Street
Midland, TX 79701

Reference: XENCO Report No: **329770**
Southwest Royalties
Project Address:

Debi Moore:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 329770. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 329770 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 329770

Sport Environmental Services, PLLC, Midland, TX

Southwest Royalties

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
WEF 1-001	S	Apr-09-09 09:28	1 ft	329770-001
WEF 2-001	S	Apr-09-09 09:31	1 ft	329770-002
WEF 3-001	S	Apr-09-09 09:37	1 ft	329770-003
WEF 4-001	S	Apr-09-09 09:40	1 ft	329770-004
WEF 5-001	S	Apr-09-09 09:44	2.5 ft	329770-005
CEF 1-001	S	Apr-09-09 09:48	6 In	329770-006
CEF 2-001	S	Apr-09-09 09:51	6 In	329770-007
CEF 3-001	S	Apr-09-09 09:54	6 In	329770-008
CEF 4-001	S	Apr-09-09 09:57	6 In	329770-009
CEF 5-001	S	Apr-09-09 10:00	6 In	329770-010
EEF 1-001	S	Apr-09-09 10:08	3.5 ft	329770-011
EEF 2-001	S	Apr-09-09 10:12	3.5 ft	329770-012
EEF 3-001	S	Apr-09-09 10:16	3 ft	329770-013
EEF 4-001	S	Apr-09-09 10:19	5 ft	329770-014
EEF 5-001	S	Apr-09-09 10:22	10 ft	329770-015
EEF 6-001	S	Apr-09-09 10:26	6 In	329770-016
EEF 7-001	S	Apr-09-09 10:30	6 In	329770-017

Certificate of Analysis Summary 329770

Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: Thu Apr-09-09 04 03 pm
Report Date: 13-APR-09
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	329770-001		329770-002		329770-003		329770-004		329770-005		329770-006	
	Field Id:	WEF 1-001		WEF 2-001		WEF 3-001		WEF 4-001		WEF 5-001		CEF 1-001	
	Depth:	1 ft		1 ft		1 ft		1 ft		2 5 ft		6 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-09-09 09 28		Apr-09-09 09 31		Apr-09-09 09 37		Apr-09-09 09 40		Apr-09-09 09 44		Apr-09-09 09 48	
Anions by EPA 300	*Extracted:*												
	Analyzed:	Apr-09-09 19 47		Apr-09-09 19 47		Apr-09-09 19 47		Apr-09-09 19 47		Apr-09-09 19 47		Apr-09-09 19 47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		70 9	21 0	306	26 5	497	26 4	21 9	5 25	53 3	26 5	31 3	25 1
BTEX by EPA 8021B	*Extracted:*	Apr-09-09 17 00		Apr-09-09 17 00		Apr-10-09 08 00		Apr-10-09 08 00		Apr-09-09 17 00		Apr-09-09 17 00	
	Analyzed:	Apr-10-09 00 27		Apr-10-09 00 47		Apr-10-09 11 49		Apr-10-09 12 09		Apr-10-09 01 08		Apr-09-09 20 20	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		0 6117	0 5228	ND	0 2652	0 0014	0 0011	ND	0 0011	ND	0 1058	ND	0 0012
Toluene		19 29	1 046	5 832	0 5304	0 0496	0 0021	0 0041	0 0021	0 3587	0 2116	ND	0 0025
Ethylbenzene		19 81	0 5228	5 975	0 2652	0 1129	0 0011	0 0216	0 0011	0 3640	0 1058	ND	0 0012
m,p-Xylenes		72 65	1 046	23 51	0 5304	0 3965	0 0021	0 0492	0 0021	1 399	0 2116	ND	0 0025
o-Xylene		26 54	0 5228	8 523	0 2652	0 2124	0 0011	0 0096	0 0011	0 5301	0 1058	ND	0 0012
Total Xylenes		99 19	0 5228	32 033	0 2652	0 6089	0 0011	0 0588	0 0011	1 9291	0 1058	ND	0 0012
Total BTEX		138 9017	0 5228	43 84	0 2652	0 7728	0 0011	0 0845	0 0011	2 6518	0 1058	ND	0 0012
Percent Moisture	*Extracted:*												
	Analyzed:	Apr-09-09 20 31		Apr-09-09 20 31		Apr-09-09 20 31		Apr-09-09 20 31		Apr-09-09 20 31		Apr-09-09 20 31	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4 94	1 00	5 73	1 00	5 38	1 00	4 84	1 00	5 68	1 00	20 19	1 00
TPH By SW8015 Mod	*Extracted:*	Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00	
	Analyzed:	Apr-09-09 21 56		Apr-09-09 22 21		Apr-09-09 22 47		Apr-09-09 23 12		Apr-09-09 23 37		Apr-10-09 00 02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		6370	158	6600	159	1280	79 3	417	15 8	28 4	15 9	22 3	18 8
C12-C28 Diesel Range Hydrocarbons		15900	158	23700	159	11000	79 3	5160	15 8	542	15 9	1970	18 8
C28-C35 Oil Range Hydrocarbons		1640	158	2270	159	1020	79 3	463	15 8	56 0	15 9	316	18 8
Total TPH		23910	158	32570	159	13300	79 3	6040	15 8	626 4	15 9	2308 3	18 8

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 329770

Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: Thu Apr-09-09 04 03 pm
Report Date: 13-APR-09
Project Manager: Brent Barron, II

Analysis Requested		329770-007		329770-008		329770-009		329770-010		329770-011		329770-012	
	Field Id:	CEF 2-001		CEF 3-001		CEF 4-001		CEF 5-001		EEF 1-001		EEF 2-001	
	Depth:	6 In		6 In		6 In		6 In		3 5 ft		3 5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-09-09 09 51		Apr-09-09 09 54		Apr-09-09 09 57		Apr-09-09 10 00		Apr-09-09 10 08		Apr-09-09 10 12	
Anions by EPA 300	*Extracted:*												
	Analyzed:	Apr-09-09 19 47		Apr-09-09 19 47		Apr-09-09 19 47		Apr-09-09 19 47		Apr-09-09 19 47		Apr-09-09 19 47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		122	28 7	14 0	11 4	5390	57 5	ND	11 4	928	22 7	17 6	5 50
BTEX by EPA 8021B	*Extracted:*	Apr-09-09 17 00		Apr-09-09 17 00		Apr-10-09 08 00		Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00	
	Analyzed:	Apr-10-09 01 29		Apr-10-09 01 49		Apr-10-09 12 30		Apr-09-09 21 02		Apr-09-09 21 22		Apr-09-09 21 43	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0 1145	6 894	2 253	ND	0 5750	ND	0 0011	ND	0 0011	ND	0 0011
Toluene		5 991	0 2289	75 77	4 506	ND	1 150	0 0028	0 0023	0 0023	0 0023	0 0134	0 0022
Ethylbenzene		7 913	0 1145	32 38	2 253	0 6555	0 5750	ND	0 0011	ND	0 0011	0 0073	0 0011
m,p-Xylenes		29 07	0 2289	112 9	4 506	2 421	1 150	0 0025	0 0023	0 0056	0 0023	0 0276	0 0022
o-Xylene		11 63	0 1145	36 97	2 253	0 7878	0 5750	0 0013	0 0011	0 0012	0 0011	0 0106	0 0011
Total Xylenes		40 7	0 1145	149 87	2 253	3 2088	0 5750	0 0038	0 0011	0 0068	0 0011	0 0382	0 0011
Total BTEX		54 604	0 1145	264 914	2 253	3 8643	0 5750	0 0066	0 0011	0 0091	0 0011	0 0589	0 0011
Percent Moisture	*Extracted:*												
	Analyzed:	Apr-09-09 20 31		Apr-09-09 20 31		Apr-09-09 20 31		Apr-09-09 20 37		Apr-09-09 20 37		Apr-09-09 20 37	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		12 98	1 00	12 11	1 00	13 05	1 00	12 53	1 00	12 07	1 00	9 09	1 00
TPH By SW8015 Mod	*Extracted:*	Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00	
	Analyzed:	Apr-10-09 00 27		Apr-10-09 00 52		Apr-10-09 01 43		Apr-10-09 02 07		Apr-10-09 07 36		Apr-10-09 02 58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		2610	86 2	13100	171	511	86 3	ND	17 1	206	85 3	28 9	16 5
C12-C28 Diesel Range Hydrocarbons		13700	86 2	19300	171	5310	86 3	75 6	17 1	8000	85 3	491	16 5
C28-C35 Oil Range Hydrocarbons		1470	86 2	2140	171	538	86 3	ND	17 1	837	85 3	53 7	16 5
Total TPH		17780	86 2	34540	171	6359	86 3	75 6	17 1	9043	85 3	573 6	16 5

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 329770

Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: Thu Apr-09-09 04 03 pm
Report Date: 13-APR-09
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	329770-013		329770-014		329770-015		329770-016		329770-017	
	Field Id:	EEF 3-001		EEF 4-001		EEF 5-001		EEF 6-001		EEF 7-001	
	Depth:	3 ft		5 ft		10 ft		6 In		6 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-09-09 10 16		Apr-09-09 10 19		Apr-09-09 10 22		Apr-09-09 10 26		Apr-09-09 10 30	
Anions by EPA 300	***Extracted:***										
	Analyzed:	Apr-09-09 19 47		Apr-09-09 19 47		Apr-09-09 19 47		Apr-09-09 19 47		Apr-09-09 19 47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		117	10 8	31 9	5 63	47 4	11 2	938	22 1	1490	28 0
BTEX by EPA 8021B	***Extracted:***	Apr-10-09 08 00		Apr-09-09 17 00		Apr-10-09 08 00		Apr-09-09 17 00		Apr-09-09 17 00	
	Analyzed:	Apr-10-09 14 33		Apr-09-09 22 24		Apr-10-09 11 28		Apr-09-09 23 46		Apr-10-09 00 06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0 0542	ND	0 0011	ND	0 0011	ND	0 0011	ND	0 0011
Toluene		ND	0 1084	0 0128	0 0022	ND	0 0022	ND	0 0022	ND	0 0022
Ethylbenzene		ND	0 0542	0 0232	0 0011	0 0433	0 0011	ND	0 0011	ND	0 0011
m,p-Xylenes		ND	0 1084	0 0593	0 0022	0 0741	0 0022	ND	0 0022	ND	0 0022
o-Xylene		ND	0 0542	0 0225	0 0011	0 0031	0 0011	ND	0 0011	ND	0 0011
Total Xylenes		ND	0 0542	0 0818	0 0011	0 0772	0 0011	ND	0 0011	ND	0 0011
Total BTEX		ND	0 0542	0 1178	0 0011	0 1205	0 0011	ND	0 0011	ND	0 0011
Percent Moisture	***Extracted:***										
	Analyzed:	Apr-09-09 20 37		Apr-09-09 20 37		Apr-09-09 20 37		Apr-09-09 20 37		Apr-09-09 20 37	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7 73	1 00	11 18	1 00	10 91	1 00	9 37	1 00	10 85	1 00
TPH By SW8015 Mod	***Extracted:***	Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00		Apr-09-09 17 00	
	Analyzed:	Apr-10-09 03 23		Apr-10-09 03 48		Apr-10-09 08 02		Apr-10-09 04 38		Apr-10-09 05 04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		2590	81 3	28 9	16 9	370	84 2	ND	16 6	59 5	16 8
C12-C28 Diesel Range Hydrocarbons		10200	81 3	486	16 9	8980	84 2	519	16 6	1570	16 8
C28-C35 Oil Range Hydrocarbons		1010	81 3	46 7	16 9	1050	84 2	61 8	16 6	91 4	16 8
Total TPH		13800	81 3	561 6	16 9	10400	84 2	580 8	16 6	1720 9	16 8

Brent Barron
Odessa Laboratory Director

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329770,

Project ID: Wilderspin Battery

Lab Batch #: 755473 **Sample:** 528065-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/09/09 18:17

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0304	0 0300	101	80-120	
4-Bromofluorobenzene	0 0305	0 0300	102	80-120	

Lab Batch #: 755473 **Sample:** 528065-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/09/09 18:37

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0313	0 0300	104	80-120	
4-Bromofluorobenzene	0 0324	0 0300	108	80-120	

Lab Batch #: 755473 **Sample:** 528065-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/09/09 19:18

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0262	0 0300	87	80-120	
4-Bromofluorobenzene	0 0302	0 0300	101	80-120	

Lab Batch #: 755473 **Sample:** 329770-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/09 20:20

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0256	0 0300	85	80-120	
4-Bromofluorobenzene	0 0280	0 0300	93	80-120	

Lab Batch #: 755473 **Sample:** 329770-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/09 21:02

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0255	0 0300	85	80-120	
4-Bromofluorobenzene	0 0168	0 0300	56	80-120	*

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329770,

Project ID: Wilderspin Battery

Lab Batch #: 755473 **Sample:** 329770-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/09 21:22

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0260	0 0300	87	80-120	
4-Bromofluorobenzene	0 0301	0 0300	100	80-120	

Lab Batch #: 755473 **Sample:** 329770-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/09 21:43

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0216	0 0300	72	80-120	*
4-Bromofluorobenzene	0 0310	0 0300	103	80-120	

Lab Batch #: 755473 **Sample:** 329770-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/09 22:24

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0232	0 0300	77	80-120	*
4-Bromofluorobenzene	0 0475	0 0300	158	80-120	*

Lab Batch #: 755473 **Sample:** 329770-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/09 23:46

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0256	0 0300	85	80-120	
4-Bromofluorobenzene	0 0303	0 0300	101	80-120	

Lab Batch #: 755473 **Sample:** 329770-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 00:06

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0254	0 0300	85	80-120	
4-Bromofluorobenzene	0 0304	0 0300	101	80-120	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329770,

Project ID: Wilderspin Battery

Lab Batch #: 755473 **Sample:** 329770-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 00:27

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0239	0 0300	80	80-120	
4-Bromofluorobenzene	0 0422	0 0300	141	80-120	*

Lab Batch #: 755473 **Sample:** 329770-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 00:47

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0236	0 0300	79	80-120	*
4-Bromofluorobenzene	0 0396	0 0300	132	80-120	*

Lab Batch #: 755473 **Sample:** 329770-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 01:08

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0242	0 0300	81	80-120	
4-Bromofluorobenzene	0 0320	0 0300	107	80-120	

Lab Batch #: 755473 **Sample:** 329770-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 01:29

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0219	0 0300	73	80-120	*
4-Bromofluorobenzene	0 0489	0 0300	163	80-120	*

Lab Batch #: 755473 **Sample:** 329770-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 01:49

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0253	0 0300	84	80-120	
4-Bromofluorobenzene	0 0311	0 0300	104	80-120	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329770,

Project ID: Wilderspin Battery

Lab Batch #: 755473 **Sample:** 329770-017 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 02:30

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0292	0 0300	97	80-120	
4-Bromofluorobenzene	0 0300	0 0300	100	80-120	

Lab Batch #: 755473 **Sample:** 329770-017 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 02:51

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0294	0 0300	98	80-120	
4-Bromofluorobenzene	0 0306	0 0300	102	80-120	

Lab Batch #: 755549 **Sample:** 329619-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/09 10:02

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0302	0 0300	101	80-120	
4-Bromofluorobenzene	0 0311	0 0300	104	80-120	

Lab Batch #: 755549 **Sample:** 329619-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/09 10:23

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0311	0 0300	104	80-120	
4-Bromofluorobenzene	0 0320	0 0300	107	80-120	

Lab Batch #: 755549 **Sample:** 329619-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/10/09 11:03

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0260	0 0300	87	80-120	
4-Bromofluorobenzene	0 0305	0 0300	102	80-120	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329770,

Project ID: Wilderspin Battery

Lab Batch #: 755549 **Sample:** 329770-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 11:28

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0252	0 0300	84	80-120	
4-Bromofluorobenzene	0 0575	0 0300	192	80-120	**

Lab Batch #: 755549 **Sample:** 329770-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 11:49

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0234	0 0300	78	80-120	**
4-Bromofluorobenzene	0 1002	0 0300	334	80-120	**

Lab Batch #: 755549 **Sample:** 329770-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 12:09

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0243	0 0300	81	80-120	
4-Bromofluorobenzene	0 0445	0 0300	148	80-120	*

Lab Batch #: 755549 **Sample:** 329770-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 12:30

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0239	0 0300	80	80-120	
4-Bromofluorobenzene	0 0296	0 0300	99	80-120	

Lab Batch #: 755549 **Sample:** 329770-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 14:33

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0254	0 0300	85	80-120	
4-Bromofluorobenzene	0 0289	0 0300	96	80-120	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329770,

Project ID: Wilderspin Battery

Lab Batch #: 755511 **Sample:** 528051-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/09/09 19:52

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98 8	100	99	70-135	
o-Terphenyl	44 4	50 0	89	70-135	

Lab Batch #: 755511 **Sample:** 528051-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/09/09 20:17

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97 2	100	97	70-135	
o-Terphenyl	43 8	50 0	88	70-135	

Lab Batch #: 755511 **Sample:** 528051-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/09/09 20:42

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84 5	100	85	70-135	
o-Terphenyl	47 7	50 0	95	70-135	

Lab Batch #: 755511 **Sample:** 329770-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/09 21:56

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97 9	100	98	70-135	
o-Terphenyl	47 7	50 0	95	70-135	

Lab Batch #: 755511 **Sample:** 329770-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/09 22:21

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	51 1	50 0	102	70-135	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329770,

Project ID: Wilderspin Battery

Lab Batch #: 755511 **Sample:** 329770-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/09 22:47

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90 6	100	91	70-135	
o-Terphenyl	47 2	50 0	94	70-135	

Lab Batch #: 755511 **Sample:** 329770-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/09 23:12

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86 2	100	86	70-135	
o-Terphenyl	45 0	50 0	90	70-135	

Lab Batch #: 755511 **Sample:** 329770-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/09/09 23:37

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83 8	100	84	70-135	
o-Terphenyl	47 1	50 0	94	70-135	

Lab Batch #: 755511 **Sample:** 329770-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 00:02

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85 8	100	86	70-135	
o-Terphenyl	47 0	50 0	94	70-135	

Lab Batch #: 755511 **Sample:** 329770-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 00:27

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97 3	100	97	70-135	
o-Terphenyl	44 5	50 0	89	70-135	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329770,

Project ID: Wilderspin Battery

Lab Batch #: 755511 **Sample:** 329770-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 00:52

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	51 9	50 0	104	70-135	

Lab Batch #: 755511 **Sample:** 329770-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 01:43

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83 0	100	83	70-135	
o-Terphenyl	47 3	50 0	95	70-135	

Lab Batch #: 755511 **Sample:** 329770-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 02:07

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88 4	100	88	70-135	
o-Terphenyl	50 4	50 0	101	70-135	

Lab Batch #: 755511 **Sample:** 329770-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 02:58

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84 3	100	84	70-135	
o-Terphenyl	47 7	50 0	95	70-135	

Lab Batch #: 755511 **Sample:** 329770-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 03:23

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99 5	100	100	70-135	
o-Terphenyl	48 4	50 0	97	70-135	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329770,

Project ID: Wilderspin Battery

Lab Batch #: 755511 **Sample:** 329770-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 03:48

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86 4	100	86	70-135	
o-Terphenyl	48 9	50 0	98	70-135	

Lab Batch #: 755511 **Sample:** 329770-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 04:38

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84 2	100	84	70-135	
o-Terphenyl	47 7	50 0	95	70-135	

Lab Batch #: 755511 **Sample:** 329770-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 05:04

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85 1	100	85	70-135	
o-Terphenyl	47 5	50 0	95	70-135	

Lab Batch #: 755511 **Sample:** 329770-010 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 05:29

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	45 2	50 0	90	70-135	

Lab Batch #: 755511 **Sample:** 329770-010 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 05:55

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	46 8	50 0	94	70-135	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 329770,

Project ID: Wilderspin Battery

Lab Batch #: 755511 **Sample:** 329770-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 07:36

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86 4	100	86	70-135	
o-Terphenyl	50 4	50 0	101	70-135	

Lab Batch #: 755511 **Sample:** 329770-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/10/09 08:02

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82 0	100	82	70-135	
o-Terphenyl	47 6	50 0	95	70-135	

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

Blank Spike Recovery

Project Name: Southwest Royalties

Work Order #: 329770 **Project ID:** Wilderspin Battery

Lab Batch #: 755448 **Sample:** 755448-1-BKS **Matrix:** Solid

Date Analyzed: 04/09/2009 **Date Prepared:** 04/09/2009 **Analyst:** LATCOR

Reporting Units: mg/kg **Batch #:** 1

	BLANK /BLANK SPIKE RECOVERY STUDY					
Anions by EPA 300 **Analytes**	**Blank Result [A]**	**Spike Added [B]**	**Blank Spike Result [C]**	**Blank Spike %R [D]**	**Control Limits %R**	**Flags**
Chloride	ND	10 0	10 5	105	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Southwest Royalties

Work Order #: 329770 **Project ID:** Wilderspin Battery

Analyst: ASA **Date Prepared:** 04/10/2009 **Date Analyzed:** 04/10/2009

Lab Batch ID: 755549 **Sample:** 329619-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 1000	0 0925	93	0 1	0 0988	99	7	70-130	35	
Toluene	ND	0 1000	0 0886	89	0 1	0 0944	94	6	70-130	35	
Ethylbenzene	ND	0 1000	0 0930	93	0 1	0 0983	98	6	71-129	35	
m,p-Xylenes	ND	0 2000	0 1865	93	0 2	0 1974	99	6	70-135	35	
o-Xylene	ND	0 1000	0 0891	89	0 1	0 0941	94	5	71-133	35	

Analyst: ASA **Date Prepared:** 04/09/2009 **Date Analyzed:** 04/09/2009

Lab Batch ID: 755473 **Sample:** 528065-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 1000	0 0952	95	0 1	0 1024	102	7	70-130	35	
Toluene	ND	0 1000	0 0918	92	0 1	0 0988	99	7	70-130	35	
Ethylbenzene	ND	0 1000	0 0968	97	0 1	0 1041	104	7	71-129	35	
m,p-Xylenes	ND	0 2000	0 1942	97	0 2	0 2088	104	7	70-135	35	
o-Xylene	ND	0 1000	0 0927	93	0 1	0 0995	100	7	71-133	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Southwest Royalties

Work Order #: 329770
Analyst: BHW
Lab Batch ID: 755511 **Sample:** 528051-1-BKS **Batch #:** 1
Units: mg/kg

Date Prepared: 04/09/2009

Project ID: Wilderspin Battery
Date Analyzed: 04/09/2009
Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1010	101	1000	997	100	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	972	97	1000	960	96	1	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Southwest Royalties

Work Order #: 329770
Lab Batch #: 755448
Date Analyzed: 04/09/2009
QC- Sample ID: 329770-001 S
Reporting Units: mg/kg

Date Prepared: 04/09/2009
Batch #: 1

Project ID: Wilderspin Battery
Analyst: LATCOR
Matrix: Soil

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	70 9	421	478	97	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Southwest Royalties

Work Order # : 329770 **Project ID:** Wilderspin Battery

Lab Batch ID: 755473 **QC- Sample ID:** 329770-017 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/10/2009 **Date Prepared:** 04/09/2009 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 1119	0 0635	57	0 1111	0 0653	59	3	70-130	35	X
Toluene	ND	0 1119	0 0457	41	0 1111	0 0475	43	4	70-130	35	X
Ethylbenzene	ND	0 1119	0 0313	28	0 1111	0 0328	30	5	71-129	35	X
m,p-Xylenes	ND	0 2239	0 0601	27	0 2221	0 0621	28	3	70-135	35	X
o-Xylene	ND	0 1119	0 0280	25	0 1111	0 0281	25	0	71-133	35	X

Lab Batch ID: 755511 **QC- Sample ID:** 329770-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/10/2009 **Date Prepared:** 04/09/2009 **Analyst:** BHW

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1140	1200	105	1140	1240	109	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	75 6	1140	1200	99	1140	1230	101	2	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Southwest Royalties

Work Order #: 329770

Lab Batch #: 755448 **Project ID:** Wilderspin Battery
Date Analyzed: 04/09/2009 **Date Prepared:** 04/09/2009 **Analyst:** LATCOR
QC- Sample ID: 329770-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Anions by EPA 300 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	70 9	41 2	53	20	F

Lab Batch #: 755418
Date Analyzed: 04/09/2009 **Date Prepared:** 04/09/2009 **Analyst:** BEV
QC- Sample ID: 329774-006 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	6 22	9 01	37	20	F

Lab Batch #: 755419
Date Analyzed: 04/09/2009 **Date Prepared:** 04/09/2009 **Analyst:** BEV
QC- Sample ID: 329770-010 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	12 5	13 5	7	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes

PAGE 1 of 2

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone. 432-563-1800
Fax: 432-563-1713

Project Manager: Debi S Moore

Company Name: Scott Environmental

Company Address:

City/State/Zip:

Telephone No:

Fax No:

Sampler Signature: [signature]

e-mail:

Project Name: Southwest Royalties -

Project #: Wilderspin Battery

Project Loc:

PO #:

Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 329770

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix (DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other)	TPH 418.1 (8015M) 8015B	TPH TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX (8021B/5030) or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) (24), 48, 72 hrs	Standard TAT
01	WEF1-001		1'	4/9/09	928		1	X								S	X			X					X			X	
02	WEF2-001		1'	↓	931		↓	↓								↓	↓			↓					↓			↓	
03	WEF3-001		1'	↓	937		↓	↓								↓	↓			↓					↓			↓	
04	WEF4-001		1'	↓	940		↓	↓								↓	↓			↓					↓			↓	
05	WEF5-001		2.5'	↓	944		↓	↓								↓	↓			↓					↓			↓	
06	CEF1-001		6'	↓	948		↓	↓								↓	↓			↓					↓			↓	
07	CEF2-001		6"	↓	951		↓	↓								↓	↓			↓					↓			↓	
08	CEF3-001		6"	↓	954		↓	↓								↓	↓			↓					↓			↓	
09	CEF4-001		6"	↓	957		↓	↓								↓	↓			↓					↓			↓	
10	CEF5-001		6"	↓	1000		↓	↓								↓	↓			↓					↓			↓	

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time
[signature]	4/9/09	1603			
			Received by ELOT: Andrea Lom[illegible]	4.9.09	16:03

Laboratory Comments:

- Sample Containers Intact? (Y) N
- VOCs Free of Headspace? (Y) N
- Labels on container(s) (Y) N
- Custody seals on container(s) Y (N)
- Custody seals on cooler(s) Y (N)
- Sample Hand Delivered (Y) N
- by Sampler/Client Rep.? (Y) N
- by Courier? UPS DHL FedEx Lone Star
- 4 oz glass
- Temperature Upon Receipt: 2.0 °C

Page 25 of 26

Xenco Laboratories

The Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765

Phone 432-563-1800
Fax 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Debi S Moore

Company Name: Sport Environmental

Company Address:

City/State/Zip:

Telephone No:

Fax No:

Sampler Signature: [signature]

e-mail:

Project Name: Southwest Royalties -

Project #: Witherspoon Battery

Project Loc:

PO #:

Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 329770

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH 418.1 8015M (8015B)	TPH TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.				RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
11	SSF1-001		3.5'	4/9/09	1008		1	X								S	X			X					X						X	
12	SSF2-001		3.5'	↓	1012		↓	↓								↓	↓			↓					↓						↓	
13	SSF3-001		3'	↓	1016		↓	↓								↓	↓			↓					↓						↓	
14	SSF4-001		5'	↓	1019		↓	↓								↓	↓			↓					↓						↓	
15	SSF5-001		10'	↓	1022		↓	↓								↓	↓			↓					↓						↓	
16	SSF6-001		6"	↓	1026		↓	↓								↓	↓			↓					↓						↓	
17	SSF7-001		6"	↓	1030		↓	↓								↓	↓			↓					↓						↓	

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time
[signature]	4/9/09	16:03			
Relinquished by			Received by		
Relinquished by			Received by ELOT: Andrea Sam	4.9.09	16:03

Laboratory Comments:
Sample Containers Intact? (Y) N
VOCs Free of Headspace? (Y) N
Labels on container(s) (Y) N
Custody seals on container(s) Y (N)
Custody seals on cooler(s) Y (N)
Sample Hand Delivered (Y) N
by Sampler/Client Rep ? (Y) N
by Courier? UPS DHL FedEx Lone Star
4oz glass
Temperature Upon Receipt 2.0 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Spot Env.

Date/ Time: 4.9.09 16:03

Lab ID # : 329770

Initials: AL

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	(Yes)	No	2.0 °C	
#2	Shipping container in good condition?	(Yes)	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	(Not Present)	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	(Not Present)	
#5	Chain of Custody present?	(Yes)	No		
#6	Sample instructions complete of Chain of Custody?	(Yes)	No		
#7	Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont / Lid	
#9	Container label(s) legible and intact?	Yes	No	(Not Applicable)	
#10	Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11	Containers supplied by ELOT?	(Yes)	No		
#12	Samples in proper container/ bottle?	(Yes)	No	See Below	
#13	Samples properly preserved?	(Yes)	No	See Below	
#14	Sample bottles intact?	(Yes)	No		
#15	Preservations documented on Chain of Custody?	(Yes)	No		
#16	Containers documented on Chain of Custody?	(Yes)	No		
#17	Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18	All samples received within sufficient hold time?	(Yes)	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	(Not Applicable)	
#20	VOC samples have zero headspace?	(Yes)	No	Not Applicable	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken

_____

_____

_____

Check all that Apply

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

Analytical Report 331171

for

Sport Environmental Services, PLLC

Project Manager: Debi Moore

Southwest Royalties

Wilderspin Battery

01-MAY-09

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Miramar, FL E86349
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

01-MAY-09

Project Manager: **Debi Moore**
Sport Environmental Services, PLLC
502 North Big Spring Street
Midland, TX 79701

Reference: XENCO Report No: **331171**
Southwest Royalties
Project Address:

Debi Moore:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 331171. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 331171 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 331171

Sport Environmental Services, PLLC, Midland, TX

Southwest Royalties

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
EEF 1-002	S	Apr-27-09 00:00	6 ft	331171-001
EEF 2-002	S	Apr-27-09 00:00	6 ft	331171-002
EEF 3-002	S	Apr-27-09 00:00	6 ft	331171-003
EEF 5-002	S	Apr-27-09 00:00	12 ft	331171-004
EEF 6-002	S	Apr-27-09 00:00	1 ft	331171-005
EEF 7-002	S	Apr-27-09 00:00	1 ft	331171-006
CEF 2-002	S	Apr-27-09 00:00	6 ft	331171-007
CEF 3-002	S	Apr-27-09 00:00	4.5 ft	331171-008
CEF 4-002	S	Apr-27-09 00:00	4.5 ft	331171-009
WEF 1-002	S	Apr-27-09 00:00	3.5 ft	331171-010
WEF 2-002	S	Apr-27-09 00:00	3.5 ft	331171-011
WEF 3-002	S	Apr-27-09 00:00	3.5 ft	331171-012
WEF 4-002	S	Apr-27-09 00:00	3 ft	331171-013
WEF 5-002	S	Apr-27-09 00:00	3 ft	331171-014

Certificate of Analysis Summary 331171

Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: Tue Apr-28-09 09 30 am
Report Date: 04-JUN-09
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	331171-001		331171-002		331171-003		331171-004		331171-005		331171-006	
	Field Id:	EEF 1-002		EEF 2-002		EEF 3-002		EEF 5-002		EEF 6-002		EEF 7-002	
	Depth:	6 ft		6 ft		6 ft		12 ft		1 ft		1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-27-09 00 00		Apr-27-09 00 00		Apr-27-09 00 00		Apr-27-09 00 00		Apr-27-09 00 00		Apr-27-09 00 00	
Anions by EPA 300	*Extracted:*												
	Analyzed:	Apr-28-09 13 21								Apr-28-09 13 21		Apr-28-09 13 21	
	Units/RL:	mg/kg	RL							mg/kg	RL	mg/kg	RL
Chloride		1280	28 3							867	21 7	500	11 0
Percent Moisture	*Extracted:*												
	Analyzed:	Apr-28-09 17 00		Apr-28-09 17 00		Apr-28-09 17 00		Apr-28-09 17 00		Apr-28-09 17 00		Apr-28-09 17 00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		11 75	1 00	11 05	1 00	9 64	1 00	11 54	1 00	8 03	1 00	8 81	1 00
TPH By SW8015 Mod	*Extracted:*	Apr-29-09 11 56		Apr-29-09 11 56		Apr-29-09 11 56		Apr-29-09 11 56					
	Analyzed:	Apr-30-09 02 21		Apr-30-09 02 46		Apr-30-09 03 12		Apr-30-09 03 37					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		55 1	17 0	41 3	16 9	348	83 0	40 1	17 0				
C12-C28 Diesel Range Hydrocarbons		1080	17 0	685	16 9	3550	83 0	399	17 0				
C28-C35 Oil Range Hydrocarbons		112	17 0	68 6	16 9	298	83 0	28 3	17 0				
Total TPH		1247 1	17 0	794 9	16 9	4196	83 0	467 4	17 0				

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 331171

Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: Tue Apr-28-09 09 30 am
Report Date: 04-JUN-09
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	331171-007		331171-008		331171-009		331171-010		331171-011		331171-012	
	Field Id:	CEF 2-002		CEF 3-002		CEF 4-002		WEF 1-002		WEF 2-002		WEF 3-002	
	Depth:	6 ft		4 5 ft		4 5 ft		3 5 ft		3 5 ft		3 5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-27-09 00 00		Apr-27-09 00 00		Apr-27-09 00 00		Apr-27-09 00 00		Apr-27-09 00 00		Apr-27-09 00 00	
Anions by EPA 300	*Extracted:*												
	Analyzed:									Apr-28-09 13 21		Apr-28-09 13 21	
	Units/RL:									mg/kg	RL	mg/kg	RL
Chloride										538	22 1	540	27 7
BTEX by EPA 8021B	*Extracted:*	Apr-28-09 09 45		Apr-30-09 17 00		Apr-28-09 09 45		Apr-28-09 09 45					
	Analyzed:	Apr-28-09 16 36		Apr-30-09 21 13		Apr-28-09 17 18		Apr-28-09 15 53					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		ND	0 0054	ND	0 0571	0 0075	0 0057	ND	0 0011				
Toluene		0 1497	0 0107	ND	0 1141	0 0251	0 0113	ND	0 0022				
Ethylbenzene		1 324	0 0054	2 459	0 0571	0 2200	0 0057	0 0067	0 0011				
m,p-Xylenes		1 590	0 0107	6 151	0 1141	0 6489	0 0113	0 0183	0 0022				
o-Xylene		3 912 D	0 0535	7 971	0 0571	0 3008	0 0057	0 0108	0 0011				
Total Xylenes		5 5020	0 0107	14 122	0 0571	0 9497	0 0057	0 0291	0 0011				
Total BTEX		6 9760	0 0054	16 581	0 0571	1 2023	0 0057	0 0358	0 0011				
Percent Moisture	*Extracted:*												
	Analyzed:	Apr-28-09 17 00		Apr-28-09 17 00		Apr-28-09 17 00		Apr-28-09 17 00		Apr-28-09 17 00		Apr-28-09 17 00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7 07	1 00	12 57	1 00	11 81	1 00	10 57	1 00	9 63	1 00	9 69	1 00
TPH By SW8015 Mod	*Extracted:*	Apr-29-09 11 56		Apr-29-09 11 56		Apr-29-09 11 56		Apr-29-09 11 56		Apr-29-09 11 56		Apr-29-09 11 56	
	Analyzed:	Apr-30-09 04 02		Apr-30-09 04 26		Apr-30-09 04 52		Apr-30-09 05 17		Apr-30-09 05 43		Apr-30-09 06 08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		1890	80 7	1220	85 8	406	17 0	30 2	16 8	1330	83 0	853	83 0
C12-C28 Diesel Range Hydrocarbons		10200	80 7	5180	85 8	3970	17 0	138	16 8	3720	83 0	4310	83 0
C28-C35 Oil Range Hydrocarbons		784	80 7	515	85 8	309	17 0	ND	16 8	283	83 0	380	83 0
Total TPH		12874	80 7	6915	85 8	4685	17 0	168 2	16 8	5333	83 0	5543	83 0

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 331171

Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: Tue Apr-28-09 09 30 am
Report Date: 04-JUN-09
Project Manager: Brent Barron, II

Analysis Requested								
	Lab Id:	331171-013		331171-014				
	Field Id:	WEF 4-002		WEF 5-002				
	Depth:	3 ft		3 ft				
	Matrix:	SOIL		SOIL				
	Sampled:	Apr-27-09 00 00		Apr-27-09 00 00				
Percent Moisture	***Extracted:***							
	Analyzed:	Apr-28-09 17 00		Apr-28-09 17 00				
	Units/RL:	%	RL	%	RL			
Percent Moisture		11 15	1 00	11 77	1 00			
TPH By SW8015 Mod	***Extracted:***	Apr-29-09 11 56		Apr-29-09 11 56				
	Analyzed:	Apr-30-09 06 57		Apr-30-09 07 23				
	Units/RL:	mg/kg	RL	mg/kg	RL			
C6-C12 Gasoline Range Hydrocarbons		500	16 9	ND	17 0			
C12-C28 Diesel Range Hydrocarbons		2500	16 9	43 5	17 0			
C28-C35 Oil Range Hydrocarbons		218	16 9	ND	17 0			
Total TPH		3218	16 9	43 5	17 0			

Brent Barron
Odessa Laboratory Director

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit. **RL** Reporitng Limit

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 331171,

Project ID: Wilderspin Battery

Lab Batch #: 757210 **Sample:** 528981-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/28/09 10:31

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0310	0 0300	103	80-120	
4-Bromofluorobenzene	0 0320	0 0300	107	80-120	

Lab Batch #: 757210 **Sample:** 528981-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/28/09 10:53

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0310	0 0300	103	80-120	
4-Bromofluorobenzene	0 0318	0 0300	106	80-120	

Lab Batch #: 757210 **Sample:** 528981-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/28/09 11:45

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0262	0 0300	87	80-120	
4-Bromofluorobenzene	0 0300	0 0300	100	80-120	

Lab Batch #: 757210 **Sample:** 331171-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/28/09 15:53

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0256	0 0300	85	80-120	
4-Bromofluorobenzene	0 0465	0 0300	155	80-120	**

Lab Batch #: 757210 **Sample:** 331171-010 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/28/09 16:14

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0297	0 0300	99	80-120	
4-Bromofluorobenzene	0 0413	0 0300	138	80-120	**

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

*Surrogate Recovery [D] = 100 * A / B*

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 331171,

Project ID: Wilderspin Battery

Lab Batch #: 757210 **Sample:** 331171-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/28/09 16:36

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0220	0 0300	73	80-120	**
4-Bromofluorobenzene	0 2646	0 0300	882	80-120	**

Lab Batch #: 757210 **Sample:** 331171-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/28/09 17:18

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0236	0 0300	79	80-120	**
4-Bromofluorobenzene	0 1086	0 0300	362	80-120	**

Lab Batch #: 757210 **Sample:** 331171-010 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/28/09 20:55

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0292	0 0300	97	80-120	
4-Bromofluorobenzene	0 0525	0 0300	175	80-120	**

Lab Batch #: 757589 **Sample:** 529182-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/09 16:34

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0307	0 0300	102	80-120	
4-Bromofluorobenzene	0 0325	0 0300	108	80-120	

Lab Batch #: 757589 **Sample:** 529182-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/09 16:55

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0308	0 0300	103	80-120	
4-Bromofluorobenzene	0 0311	0 0300	104	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 331171,

Project ID: Wilderspin Battery

Lab Batch #: 757589 **Sample:** 529182-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/09 17:39

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0262	0 0300	87	80-120	
4-Bromofluorobenzene	0 0282	0 0300	94	80-120	

Lab Batch #: 757589 **Sample:** 331171-007 / DL **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 20:30

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0250	0 0300	83	80-120	
4-Bromofluorobenzene	0 0808	0 0300	269	80-120	**

Lab Batch #: 757589 **Sample:** 331171-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 21:13

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0239	0 0300	80	80-120	
4-Bromofluorobenzene	0 1706	0 0300	569	80-120	**

Lab Batch #: 757589 **Sample:** 331229-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/01/09 00:47

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0308	0 0300	103	80-120	
4-Bromofluorobenzene	0 0327	0 0300	109	80-120	

Lab Batch #: 757589 **Sample:** 331229-005 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/01/09 01:08

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0302	0 0300	101	80-120	
4-Bromofluorobenzene	0 0317	0 0300	106	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 331171,

Project ID: Wilderspin Battery

Lab Batch #: 757491 **Sample:** 529110-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/09 01:06

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	48 2	50 0	96	70-135	

Lab Batch #: 757491 **Sample:** 529110-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/09 01:31

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	47 5	50 0	95	70-135	

Lab Batch #: 757491 **Sample:** 529110-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/09 01:56

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89 0	100	89	70-135	
o-Terphenyl	51 5	50 0	103	70-135	

Lab Batch #: 757491 **Sample:** 331171-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 02:21

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96 8	100	97	70-135	
o-Terphenyl	55 5	50 0	111	70-135	

Lab Batch #: 757491 **Sample:** 331171-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 02:46

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88 5	100	89	70-135	
o-Terphenyl	51 4	50 0	103	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 331171,

Project ID: Wilderspin Battery

Lab Batch #: 757491 **Sample:** 331171-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 03:12

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86 6	100	87	70-135	
o-Terphenyl	51 7	50 0	103	70-135	

Lab Batch #: 757491 **Sample:** 331171-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 03:37

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88 3	100	88	70-135	
o-Terphenyl	51 1	50 0	102	70-135	

Lab Batch #: 757491 **Sample:** 331171-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 04:02

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98 8	100	99	70-135	
o-Terphenyl	54 6	50 0	109	70-135	

Lab Batch #: 757491 **Sample:** 331171-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 04:26

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90 7	100	91	70-135	
o-Terphenyl	51 1	50 0	102	70-135	

Lab Batch #: 757491 **Sample:** 331171-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 04:52

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92 0	100	92	70-135	
o-Terphenyl	54 0	50 0	108	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits, data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 331171,

Project ID: Wilderspin Battery

Lab Batch #: 757491 **Sample:** 331171-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 05:17

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88 3	100	88	70-135	
o-Terphenyl	51 3	50 0	103	70-135	

Lab Batch #: 757491 **Sample:** 331171-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 05:43

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95 3	100	95	70-135	
o-Terphenyl	49 7	50 0	99	70-135	

Lab Batch #: 757491 **Sample:** 331171-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 06:08

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91 9	100	92	70-135	
o-Terphenyl	51 5	50 0	103	70-135	

Lab Batch #: 757491 **Sample:** 331171-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 06:57

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93 1	100	93	70-135	
o-Terphenyl	52 9	50 0	106	70-135	

Lab Batch #: 757491 **Sample:** 331171-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 07:23

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90 7	100	91	70-135	
o-Terphenyl	52 9	50 0	106	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits, data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 331171,

Project ID: Wilderspin Battery

Lab Batch #: 757491 **Sample:** 331229-006 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 11:09

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	46 7	50 0	93	70-135	

Lab Batch #: 757491 **Sample:** 331229-006 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/09 11:34

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	46 7	50 0	93	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

Blank Spike Recovery

Project Name: Southwest Royalties

Work Order #: 331171 **Project ID:** Wilderspin Battery

Lab Batch #: 757296 **Sample:** 757296-1-BKS **Matrix:** Solid

Date Analyzed: 04/28/2009 **Date Prepared:** 04/28/2009 **Analyst:** LATCOR

Reporting Units: mg/kg **Batch #:** 1

	BLANK /BLANK SPIKE RECOVERY STUDY					
Anions by EPA 300 **Analytes**	**Blank Result [A]**	**Spike Added [B]**	**Blank Spike Result [C]**	**Blank Spike %R [D]**	**Control Limits %R**	**Flags**
Chloride	ND	10 0	9 44	94	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Southwest Royalties

Work Order #: 331171 **Project ID:** Wilderspin Battery

Analyst: BRB **Date Prepared:** 04/28/2009 **Date Analyzed:** 04/28/2009

Lab Batch ID: 757210 **Sample:** 528981-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 1000	0 1079	108	0 1	0 1087	109	1	70-130	35	
Toluene	ND	0 1000	0 1063	106	0 1	0 1066	107	0	70-130	35	
Ethylbenzene	ND	0 1000	0 1116	112	0 1	0 1124	112	1	71-129	35	
m,p-Xylenes	ND	0 2000	0 2286	114	0 2	0 2296	115	0	70-135	35	
o-Xylene	ND	0 1000	0 1078	108	0 1	0 1083	108	0	71-133	35	

Analyst: ASA **Date Prepared:** 04/30/2009 **Date Analyzed:** 04/30/2009

Lab Batch ID: 757589 **Sample:** 529182-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 1000	0 1012	101	0 1	0 0985	99	3	70-130	35	
Toluene	ND	0 1000	0 1026	103	0 1	0 0995	100	3	70-130	35	
Ethylbenzene	ND	0 1000	0 1045	105	0 1	0 1009	101	4	71-129	35	
m,p-Xylenes	ND	0 2000	0 2236	112	0 2	0 2150	108	4	70-135	35	
o-Xylene	ND	0 1000	0 1102	110	0 1	0 1056	106	4	71-133	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name: Southwest Royalties

Work Order #: 331171
Analyst: BHW
Lab Batch ID: 757491
Sample: 529110-1-BKS
Units: mg/kg

Date Prepared: 04/29/2009
Batch #: 1

Project ID: Wilderspin Battery
Date Analyzed: 04/30/2009
Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1020	102	1000	1030	103	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	994	99	1000	985	99	1	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Southwest Royalties

Work Order #: 331171
Lab Batch #: 757296
Date Analyzed: 04/28/2009
QC- Sample ID: 331171-001 S
Reporting Units: mg/kg

Date Prepared: 04/28/2009
Batch #: 1

Project ID: Wilderspin Battery
Analyst: LATCOR
Matrix: Soil

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1280	567	1900	109	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Southwest Royalties

Work Order # : 331171 **Project ID:** Wilderspin Battery

Lab Batch ID: 757210 **QC- Sample ID:** 331171-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/28/2009 **Date Prepared:** 04/28/2009 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 1114	0 0921	83	0 1118	0 0980	88	6	70-130	35	
Toluene	ND	0 1114	0 0886	80	0 1118	0 0937	84	6	70-130	35	
Ethylbenzene	0 0067	0 1114	0 0903	75	0 1118	0 0999	83	10	71-129	35	
m,p-Xylenes	0 0183	0 2227	0 1851	75	0 2236	0 1993	81	7	70-135	35	
o-Xylene	0 0108	0 1114	0 1016	82	0 1118	0 1145	93	12	71-133	35	

Lab Batch ID: 757589 **QC- Sample ID:** 331229-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/01/2009 **Date Prepared:** 04/30/2009 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 1023	0 0798	78	0 1025	0 0768	75	4	70-130	35	
Toluene	ND	0 1023	0 0764	75	0 1025	0 0732	71	4	70-130	35	
Ethylbenzene	0 0010	0 1023	0 0678	65	0 1025	0 0639	61	6	71-129	35	X
m,p-Xylenes	ND	0 2046	0 1417	69	0 2050	0 1340	65	6	70-135	35	X
o-Xylene	0 0011	0 1023	0 0689	66	0 1025	0 0655	63	5	71-133	35	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Southwest Royalties

Work Order # : 331171 **Project ID:** Wilderspin Battery

Lab Batch ID: 757491 **QC- Sample ID:** 331229-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/30/2009 **Date Prepared:** 04/29/2009 **Analyst:** BHW

Reporting Units: mg/kg

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod **Analytes**	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**Spiked Sample %R [D]**	**Spike Added [E]**	**Duplicate Spiked Sample Result [F]**	**Spiked Dup. %R [G]**	**RPD %**	**Control Limits %R**	**Control Limits %RPD**	**Flag**
C6-C12 Gasoline Range Hydrocarbons	ND	1020	1200	118	1020	1210	119	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	48 3	1020	1200	113	1020	1220	115	2	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Southwest Royalties

Work Order #: 331171

Lab Batch #: 757296 **Project ID:** Wilderspin Battery
Date Analyzed: 04/28/2009 **Date Prepared:** 04/28/2009 **Analyst:** LATCOR
QC- Sample ID: 331171-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Anions by EPA 300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	1280	1280	0	20	

Lab Batch #: 757260
Date Analyzed: 04/28/2009 **Date Prepared:** 04/28/2009 **Analyst:** BEV
QC- Sample ID: 331171-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	11.8	11.4	3	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes

Environmental Lab of Texas

A Xenco Laboratories Company

12600 West I-20 East
Odessa, Texas 79765

Phone 432-563-1800
Fax. 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

1 of 2

Project Manager: Debi Sport Moore
Company Name: Sport Environmental Services
Company Address: 502 N Big Spring Street
City/State/Zip: Midland Texas 79701
Telephone No: 432-683-1100
Fax No: 888-500-0622
Sampler Signature: [signature]
e-mail: debi@sportenvironmental.com

Project Name: Southwest Royalties
Project #: Wilderspin Battery
Project Loc:
PO #:
Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 331171

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix (DW=Drinking Water, SL=Sludge, GW=Groundwater, S=Soil/Solid, NP=Non-Potable, Specify Other)	TPH 418.1 (8015M circled) 8015B	TPH TX 1005 TX 1006	Cations (Ca Mg Na K)	Anions (Cl circled) SO4 Alkalinity)	SAR / ESP / CEC	Metals As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX (8021B/5030 circled) or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre Schedule) 24, 48, 72 hrs (72 hrs circled)	Standard TAT
01	EEF1-002		6'	4/27/09			1	X								S	X			X								X	
02	EEF2-002		6'				1	X								S	X											X	
03	EEF3-002		6'				1	X								S	X											X	
04	EEF5-001		12'				1	X								S	X											X	
05	EEF6-002		1'				1	X								S				X								X	
06	EEF7-002		1'				1	X								S				X								X	
07	CEF2-001		6'				1	X								S	X								X			X	
08	CEF3-002		4.5				1	X								S	X								X			X	
09	CEF4-002		4.5				1	X								S	X								X			X	

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time
[signature]	4/28/09	9:30			
			Received by ELOT: Andrea Lam	4-28-09	9:30

Laboratory Comments:

- Sample Containers Intact? (Y) N
- VOCs Free of Headspace? (Y) N
- Labels on container(s) ID on lid (Y) N
- Custody seals on container(s) Y (N)
- Custody seals on cooler(s) Y (N)
- Sample Hand Delivered (Y) N
  - by Sampler/Client Rep? (Y) N
  - by Courier? UPS DHL FedEx Lone Star
- 4 oz glass
- Temperature Upon Receipt 2.0 °C

Environmental Lab of Texas

A Xenco Laboratories Company

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST 2 of 2

12600 West I-20 East
Odessa, Texas 79765

Phone 432-563-1800
Fax 432-563-1713

Project Manager: Debi Sport Moore
Company Name: Sport Environmental Services
Company Address: 502 N Big Spring Street
City/State/Zip: Midland Texas 79701
Telephone No: 432-683-1100
Fax No: 888-500-0622
Sampler Signature: [signature]
e-mail: debi@sportenvironmental.com

Project Name: Southwest Royalties
Project #: Wilderspin Battery
Project Loc:
PO #:
Report Format: ☑ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 331171

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix (DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other)	TPH 418.1 (8015M) 8015B	TPH TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
10	WEF1-002		3.5'	4/27/09			1	X								S	X								x			X	
11	WEF2-002		3.5'				1	X								S	X			X								X	
12	WEF3-002		3.5'				1	X								S	X			X								X	
13	WEF4-002		3'				1	X								S	X											X	
14	WEF5-002		3'				1	X								S	X											X	

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time
[signature]	4/28/09	9:30			
			Received by ELOT: Andrea Lam	4 28 09	9:30

Laboratory Comments:
Sample Containers Intact? (Y) N
VOCs Free of Headspace? (Y) N
Labels on container(s) I.D. on lid (Y) N
Custody seals on container(s) Y (N)
Custody seals on cooler(s) Y (N)
Sample Hand Delivered (Y) N
by Sampler/Client Rep ? (Y) N
by Courier? UPS DHL FedEx Lone Star
4 oz glass
Temperature Upon Receipt 2.0 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Sport Env.

Date/ Time: 4.28.09 9:30

Lab ID #: 331171

Initials: CL

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	(Yes)	No	2.0 °C	
#2	Shipping container in good condition?	(Yes)	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes.	No	(Not Present)	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	(Not Present)	
#5	Chain of Custody present?	(Yes)	No		
#6	Sample instructions complete of Chain of Custody?	(Yes)	No		
#7	Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	(ID written on Cont./ Lid)	
#9	Container label(s) legible and intact?	Yes	No	(Not Applicable)	
#10	Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11	Containers supplied by ELOT?	(Yes)	No		
#12	Samples in proper container/ bottle?	(Yes)	No	See Below	
#13	Samples properly preserved?	(Yes)	No	See Below	
#14	Sample bottles intact?	(Yes)	No		
#15	Preservations documented on Chain of Custody?	(Yes)	No		
#16	Containers documented on Chain of Custody?	(Yes)	No		
#17	Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18	All samples received within sufficient hold time?	(Yes)	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	(Not Applicable)	
#20	VOC samples have zero headspace?	(Yes)	No	Not Applicable	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that Apply.

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

Analytical Report 332665

for

Sport Environmental Services, PLLC

Project Manager: Debi Moore

Southwest Royalties

Wilderspin Battery

20-MAY-09

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Miramar, FL E86349
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

20-MAY-09

Project Manager: **Debi Moore**
Sport Environmental Services, PLLC
502 North Big Spring Street
Midland, TX 79701

Reference: XENCO Report No: **332665**
Southwest Royalties
Project Address:

Debi Moore:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 332665. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 332665 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

CASE NARRATIVE

Client Name: Sport Environmental Services, PLLC
Project Name: Southwest Royalties

Project ID:	*Wilderspin Battery*	*Report Date:*	*20-MAY-09*
Work Order Number:	*332665*	*Date Received:*	*05/13/2009*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch:	*LBA-759032*	*BTEX-MTBE EPA 8021B*

SW8021BM

Batch 759032, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 332665-010,332665-008.
4-Bromofluorobenzene recovered below QC limits Data confirmed by re-analysis. Samples affected are: 530032-1-BLK.

SW8021BM

Batch 759032, m,p-Xylenes recovered below QC limits in the Matrix Spike. Ethylbenzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 332665-008, -009, -010.
The Laboratory Control Sample for m,p-Xylenes , Ethylbenzene is within laboratory Control Limits

Batch:	*LBA-759347*	*TX1005*

SW8015MOD_NM

Batch 759347, C6-C12 Gasoline Range Hydrocarbons detected in the blank below the MQL but above the SQL; possible laboratory contamination.
Samples affected are: 332665-007, -009, -008, -010, -004, -005, -006.

Certificate of Analysis Summary 332665
Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: May-13-09 03:40 pm
Report Date: 20-MAY-09
Project Manager: Brent Barron, II

Analysis Requested												
	Lab Id:	332665-005		332665-006		332665-007		332665-008	
	Field Id:	WEF3-003		CEF2-003		CEF3-003		SP1-001	
	Depth:	5 ft		7 ft		5 5 ft		0 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-08-09 00 00		May-08-09 00 00		May-08-09 00 00		May-08-09 00 00	
Anions by EPA 300	***Extracted:***								
	Analyzed:	May-14-09 14 10						May-14-09 14 10	
	Units/RL:	mg/kg	RL					mg/kg	RL
Chloride		130	21 8					798	50 7
BTEX by EPA 8021B	***Extracted:***							May-14-09 15 45	
	Analyzed:							May-15-09 00 07	
	Units/RL:							mg/kg	RL
Benzene								ND	0 0010
Toluene								0 0022	0 0020
Ethylbenzene								0 0036	0 0010
m,p-Xylenes								0 0122	0 0020
o-Xylene								0 0072	0 0010
Total Xylenes								0 0194	0 0010
Total BTEX								0 0252	0 0010
Percent Moisture	***Extracted:***								
	Analyzed:	May-15-09 08 42		May-15-09 08 42		May-15-09 08 42		May-15-09 08 42	
	Units/RL:	%	RL	%	RL	%	RL	%	RL
Percent Moisture		8 10	1 00	10 88	1 00	10 47	1 00	1 46	1 00
TPH By SW8015 Mod	***Extracted:***	May-18-09 12 04		May-18-09 12 04		May-18-09 12 04		May-18-09 12 04	
	Analyzed:	May-18-09 17 22		May-18-09 18 12		May-18-09 18 37		May-19-09 10 50	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	16 3	1130	168	149	16 8	409	76 1
C12-C28 Diesel Range Hydrocarbons		39 5	16 3	3390	168	1400	16 8	10300	76 1
C28-C35 Oil Range Hydrocarbons		ND	16 3	193	168	90 7	16 8	894	76 1
Total TPH		39 5	16 3	4713	168	1639 7	16 8	11603	76 1

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 332665

Sport Environmental Services, PLLC, Midland, TX

Project Name: Southwest Royalties

Project Id: Wilderspin Battery
Contact: Debi Moore
Project Location:

Date Received in Lab: May-13-09 03:40 pm
Report Date: 20-MAY-09
Project Manager: Brent Barron, II

Analysis Requested						
	Lab Id:	332665-009		332665-010		
	Field Id:	SP2-001		SP3-001		
	Depth:	0 ft		0 ft		
	Matrix:	SOIL		SOIL		
	Sampled:	May-08-09 00 00		May-08-09 00 00		
Anions by EPA 300	***Extracted:***					
	Analyzed:	May-14-09 14 10		May-14-09 14 10		
	Units/RL:	mg/kg	RL	mg/kg	RL	
Chloride		49 7	20 5	183	21 4	
BTEX by EPA 8021B	***Extracted:***	May-14-09 15 45		May-14-09 15 45		
	Analyzed:	May-15-09 00 29		May-15-09 00 50		
	Units/RL:	mg/kg	RL	mg/kg	RL	
Benzene		ND	0 0010	ND	0 0011	
Toluene		0 0423	0 0020	ND	0 0021	
Ethylbenzene		0 0526	0 0010	0 0199	0 0011	
m,p-Xylenes		0 2005	0 0020	0 0634	0 0021	
o-Xylene		0 1017	0 0010	0 0916	0 0011	
Total Xylenes		0 3022	0 0010	0 155	0 0011	
Total BTEX		0 3971	0 0010	0 1749	0 0011	
Percent Moisture	***Extracted:***					
	Analyzed:	May-15-09 08 42		May-15-09 08 42		
	Units/RL:	%	RL	%	RL	
Percent Moisture		2 34	1 00	6 65	1 00	
TPH By SW8015 Mod	***Extracted:***	May-18-09 12 04		May-18-09 12 04		
	Analyzed:	May-18-09 19 27		May-19-09 11 14		
	Units/RL:	mg/kg	RL	mg/kg	RL	
C6-C12 Gasoline Range Hydrocarbons		740	76 8	1250	80 3	
C12-C28 Diesel Range Hydrocarbons		11100	76 8	8290	80 3	
C28-C35 Oil Range Hydrocarbons		946	76 8	623	80 3	
Total TPH		12786	76 8	10163	80 3	

Brent Barron
Odessa Laboratory Director

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 332665,

Project ID: Wilderspin Battery

Lab Batch #: 759032 **Sample:** 530032-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/14/09 21:36

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0300	0 0300	100	80-120	
4-Bromofluorobenzene	0 0309	0 0300	103	80-120	

Lab Batch #: 759032 **Sample:** 530032-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/14/09 21:58

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0299	0 0300	100	80-120	
4-Bromofluorobenzene	0 0294	0 0300	98	80-120	

Lab Batch #: 759032 **Sample:** 530032-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/14/09 22:41

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0261	0 0300	87	80-120	
4-Bromofluorobenzene	0 0198	0 0300	66	80-120	**

Lab Batch #: 759032 **Sample:** 332665-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/15/09 00:07

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0214	0 0300	71	80-120	**
4-Bromofluorobenzene	0 0272	0 0300	91	80-120	

Lab Batch #: 759032 **Sample:** 332665-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/15/09 00:29

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0239	0 0300	80	80-120	
4-Bromofluorobenzene	0 0641	0 0300	214	80-120	**

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

Version 1 007

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 332665,

Project ID: Wilderspin Battery

Lab Batch #: 759032 **Sample:** 332665-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/15/09 00:50

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0231	0 0300	77	80-120	**
4-Bromofluorobenzene	0 1657	0 0300	552	80-120	**

Lab Batch #: 759032 **Sample:** 332747-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/15/09 06:54

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0296	0 0300	99	80-120	
4-Bromofluorobenzene	0 0322	0 0300	107	80-120	

Lab Batch #: 759032 **Sample:** 332747-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/15/09 07:16

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0 0298	0 0300	99	80-120	
4-Bromofluorobenzene	0 0323	0 0300	108	80-120	

Lab Batch #: 759347 **Sample:** 530230-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/18/09 12:24

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	46 2	50 0	92	70-135	

Lab Batch #: 759347 **Sample:** 530230-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/18/09 12:48

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	45 3	50 0	91	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

Version 1 007

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 332665,

Project ID: Wilderspin Battery

Lab Batch #: 759347 **Sample:** 530230-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/18/09 13:13

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91 0	100	91	70-135	
o-Terphenyl	51 2	50 0	102	70-135	

Lab Batch #: 759347 **Sample:** 332665-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/09 16:57

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91 3	100	91	70-135	
o-Terphenyl	51 6	50 0	103	70-135	

Lab Batch #: 759347 **Sample:** 332665-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/09 17:22

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89 1	100	89	70-135	
o-Terphenyl	50 7	50 0	101	70-135	

Lab Batch #: 759347 **Sample:** 332665-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/09 18:12

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88 5	100	89	70-135	
o-Terphenyl	49 9	50 0	100	70-135	

Lab Batch #: 759347 **Sample:** 332665-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/09 18:37

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90 8	100	91	70-135	
o-Terphenyl	52 6	50 0	105	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

Version 1 007

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Southwest Royalties

Work Orders : 332665,

Project ID: Wilderspin Battery

Lab Batch #: 759347 **Sample:** 332665-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/09 19:27

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85 6	100	86	70-135	
o-Terphenyl	48 2	50 0	96	70-135	

Lab Batch #: 759347 **Sample:** 332562-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/09 20:17

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	45 8	50 0	92	70-135	

Lab Batch #: 759347 **Sample:** 332562-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/09 20:42

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	45 7	50 0	91	70-135	

Lab Batch #: 759347 **Sample:** 332665-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/19/09 10:50

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89 8	100	90	70-135	
o-Terphenyl	54 5	50 0	109	70-135	

Lab Batch #: 759347 **Sample:** 332665-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/19/09 11:14

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98 1	100	98	70-135	
o-Terphenyl	54 2	50 0	108	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits, data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes

Version 1 007

XENCO Laboratories

Blank Spike Recovery

Project Name: Southwest Royalties

Work Order #: 332665 **Project ID:** Wilderspin Battery

Lab Batch #: 759013 **Sample:** 759013-1-BKS **Matrix:** Solid

Date Analyzed: 05/14/2009 **Date Prepared:** 05/14/2009 **Analyst:** BEV

Reporting Units: mg/kg **Batch #:** 1

Anions by EPA 300 Analytes	Blank Result [A]	BLANK /BLANK SPIKE RECOVERY STUDY Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10 0	9 40	94	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes
BRL - Below Reporting Limit

Version 1 007

BS / BSD Recoveries

Project Name: Southwest Royalties

Work Order #: 332665 **Project ID:** Wilderspin Battery

Analyst: ASA **Date Prepared:** 05/14/2009 **Date Analyzed:** 05/14/2009

Lab Batch ID: 759032 **Sample:** 530032-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 1000	0 1032	103	0 1	0 1006	101	3	70-130	35	
Toluene	ND	0 1000	0 1053	105	0 1	0 1031	103	2	70-130	35	
Ethylbenzene	ND	0 1000	0 1073	107	0 1	0 1049	105	2	71-129	35	
m,p-Xylenes	ND	0 2000	0 2286	114	0 2	0 2231	112	2	70-135	35	
o-Xylene	ND	0 1000	0 1133	113	0 1	0 1104	110	3	71-133	35	

Analyst: BHW **Date Prepared:** 05/18/2009 **Date Analyzed:** 05/18/2009

Lab Batch ID: 759347 **Sample:** 530230-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1070	107	1000	1080	108	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1030	103	1000	1030	103	0	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version 1 007

Form 3 - MS Recoveries

Project Name: Southwest Royalties

Work Order #: 332665
Lab Batch #: 759013
Date Analyzed: 05/14/2009
QC- Sample ID: 332660-001 S
Reporting Units: mg/kg

Date Prepared: 05/14/2009
Batch #: 1

Project ID: Wilderspin Battery
Analyst: BEV
Matrix: Soil

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	5290	2190	7270	90	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Version 1.007

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Southwest Royalties

Work Order # : 332665 **Project ID:** Wilderspin Battery

Lab Batch ID: 759032 **QC- Sample ID:** 332747-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/15/2009 **Date Prepared:** 05/14/2009 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0 1017	0 0785	77	0 1017	0 0816	80	4	70-130	35	
Toluene	ND	0 1017	0 0721	71	0 1017	0 0775	76	7	70-130	35	
Ethylbenzene	ND	0 1017	0 0490	48	0 1017	0 0637	63	27	71-129	35	X
m,p-Xylenes	0 0035	0 2033	0 1438	69	0 2033	0 1638	79	14	70-135	35	X
o-Xylene	0 0067	0 1017	0 0788	71	0 1017	0 0885	80	12	71-133	35	

Lab Batch ID: 759347 **QC- Sample ID:** 332562-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/18/2009 **Date Prepared:** 05/18/2009 **Analyst:** BHW

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1010	1010	100	1010	1020	101	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1010	988	98	1010	1010	100	2	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Version 1 007

Sample Duplicate Recovery

Project Name: Southwest Royalties

Work Order #: 332665

Lab Batch #: 759013 **Project ID:** Wilderspin Battery

Date Analyzed: 05/14/2009 **Date Prepared:** 05/14/2009 **Analyst:** BEV

QC- Sample ID: 332660-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by EPA 300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	5290	5070	4	20	

Lab Batch #: 759004

Date Analyzed: 05/15/2009 **Date Prepared:** 05/15/2009 **Analyst:** BEV

QC- Sample ID: 332666-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	19.1	19.3	1	20	

Spike Relative Difference RPD 200 * |(B-A)/(B+A)|
All Results are based on MDL and validated for QC purposes
BRL - Below Reporting Limit

Version 1.007

Xenco Laboratories

The Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765

Phone 432-563-1800
Fax 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Debi Moore

Company Name: Sport Environmental

Company Address:

City/State/Zip:

Telephone No:

Fax No:

Sampler Signature: Chuck Daniels

e-mail:

Project Name: Southwest Royalties

Project #: Winkerson Battery

Project Loc:

PO #:

Report Format: ☑ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 332665

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix (DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other)	TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX (8021B/5030) or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	FEF1-003		7'	5/8/08			1	X								S				X									X
02	FEF0-003		5'																	X									
03	EEF-7-003		5'																	X									
04	WEF2-003		5'														X			X									
05	WEF3-003		5'														X			X									
06	AEF2-003		5.5														X												
07	AEF3-003		5.5														X												
08	SP1-001		0														X			X					X				
09	SP2-001		0														X			X					X				
10	SP3-001		0														X			X					X				

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time
Chuck Daniels	5/12/05	3:40			
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by ELOT:	Date	Time
			Andrea Lam	5-13-09	15:40

Laboratory Comments:

Sample Containers Intact?	(Y)	N
VOCs Free of Headspace?	(Y)	N
Labels on container(s) 10 on lid	(Y)	N
Custody seals on container(s)	Y	(N)
Custody seals on cooler(s)	Y	(N)
Sample Hand Delivered	(Y)	N
by Sampler/Client Rep ?	(Y)	N
by Courier? UPS DHL FedEx Lone Star		

4 oz glass

Temperature Upon Receipt: 3.0 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Sport Env.

Date/ Time: 5 13 09 15 40

Lab ID #: 332665

Initials: AL

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	(Yes)	No	3.0 °C	
#2	Shipping container in good condition?	(Yes)	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	(Not Present)	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	(Not Present)	
#5	Chain of Custody present?	(Yes)	No		
#6	Sample instructions complete of Chain of Custody?	(Yes)	No		
#7	Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont / Lid (Not Applicable)	
#9	Container label(s) legible and intact?	Yes	No		
#10	Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11	Containers supplied by ELOT?	(Yes)	No		
#12	Samples in proper container/ bottle?	(Yes)	No	See Below	
#13	Samples properly preserved?	(Yes)	No	See Below	
#14	Sample bottles intact?	(Yes)	No		
#15	Preservations documented on Chain of Custody?	(Yes)	No		
#16	Containers documented on Chain of Custody?	(Yes)	No		
#17	Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18	All samples received within sufficient hold time?	(Yes)	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	(Not Applicable)	
#20	VOC samples have zero headspace?	(Yes)	No	Not Applicable	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken:

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

Gracie Avalos

From: Chuck Daniels [chuck@sportenvironmental com]
Sent: Wednesday, May 20, 2009 9:39 AM
To: gracie avalos@xenco com
Subject: SWR Wilderspin

I confirm that sample point CEF2-003, sample depth needs to be changed to 7 feet

Chuck Daniels
432-661-5969

Southwest Royalties, Inc.
Wilderspin Federal Battery
S-11, T-21S, R-27E
Eddy County, New Mexico

HYDROGEOLOGICAL REPORT

Wilderspin Federal Battery

Southwest Royalties Inc.
Wilderspin Federal Battery Oil Spill
S-11, T-21S, R-27E
32.496, -104.162667
Eddy County, NM

Amigo Input Parameters		
Model Parameter	**Value**	**Source of Value**
Climate	Arid, Hot	Pearl, NM Station (1946 – 1992)
Distance (ft) to potential receptor (water well)	NA	No water well within 1 mile of site (NMOSE & USGS Databases)
Source Width	64 ft	Site Data (conservatively used Maximum diameter of site)
Maximum Length of Spill in Direction of Groundwater Flow	128 ft	Site Data (conservatively used Maximum diameter of site)
Background Chloride Concentration in Aquifer	712 mg/L	Average of 30 closest samples (New Mexico Water and Infrastructure Data System)
Aquifer Porosity	25 %	Sandy soils typically range 25-50%; Lower value is more conservative
Depth to Groundwater	147 ft	Depth to groundwater (interpolation between two nearest water wells)
Aquifer Thickness	10 ft	Unknown. Conservative value as thinner aquifers allow less dilution.
Slope of Water Table	0.001 ft/ft	Unknown. Conservative value as a flatter water table allows less dilution.
Hydraulic Conductivity	10 ft/d	Unknown. Conservative value as a smaller hydraulic conductivity allows less dilution.
Longitudinal Dispersivity	12.8	Professional Judgment; 10% of spill length
Transverse Dispersivity	1.28	Professional Judgment; 10% of longitudinal value
Average Chloride Load	1.63 kg/m^2	Calculated from site data using Massload spreadsheet
Plant Uptake Trigger	1%	Professional Judgment Conservative Assumption
Surface Layer Lithology	Med. Sand	Lithology observed on site
Soil Profile at Depth (Ratio - Caliche : Medium Sand)	1 : 5	Closest lithologic match to Quaternary Alluvial Deposits

References: Office of State Engineers for well logs within a 5 mi radius.

Mass load calculated using MASSLOAD for AMIGO.

Amigo Output Chart 7-24-09

Wilderspin Federal Battery

Units

○ Metric (m) ◉ English (inches)

Climate

Arid Hot (NM/W.Texas, Hobbs)

Input for a Distant Well

Distance to Well	5280	[ft]
Source Width	64	[ft]
Longitudinal Dispersivity	12.8	[-]
Transverse Dispersivity	1.28	[-]

Groundwater Characterictics

Background Cl Concentration in Aquifer	cGW =	712	[mg/L]
Aquifer porosity	n =	0.25	[-]
Groundwater Table Depth	D =	100	[ft]
Aquifer Thickness	H =	10	[ft]
Slope of Water Table	i =	0.001	[-]
Hydraulic Conductivity	Ks =	10	[ft/d]
Groundwater Flux	Q =	0.1	[ft2/d]

Source Characteristics

Chloride Load: M = 1.63 [kg/m2]

Max. length of the spill in direction of GW flow: L = 128 [ft]

Plant Uptake Trigger

◉ 1% Input Concentration

○ 10% Input Concentration

Soil Profiles

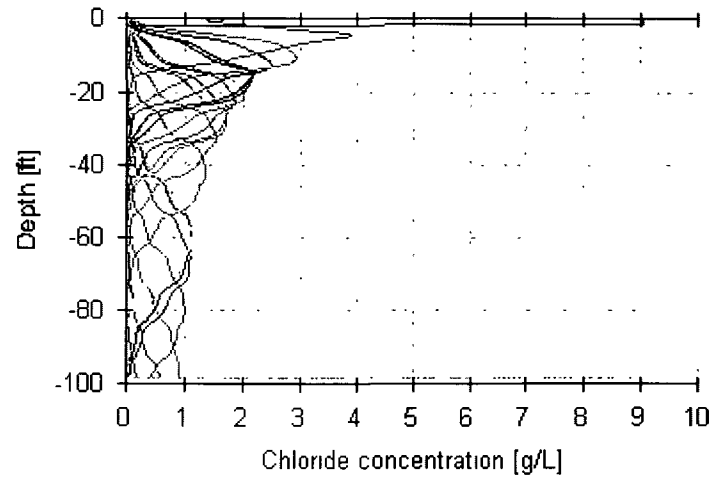
Surface Layer: Medium Sand

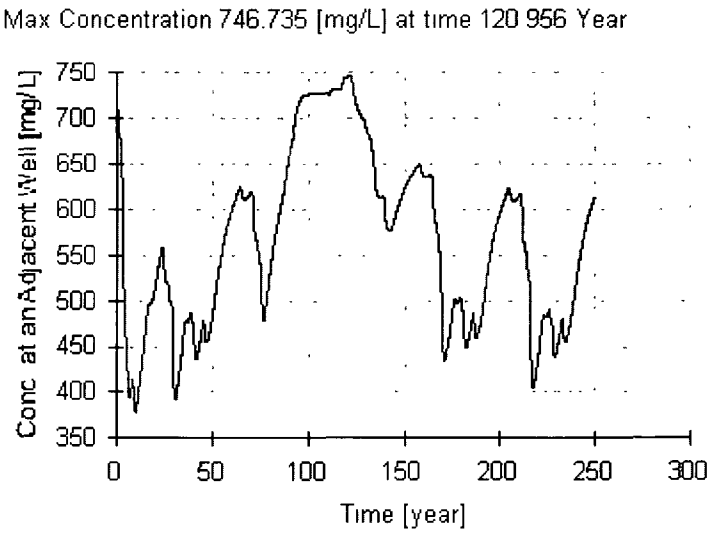
Soil Profile: P5 - Sandy Clay (1) + Medium Sand (2)

Output Charts

Quantity 1: Chloride concentration [g/L]

Quantity 2: Conc. at an Adjacent Well [mg/L]





Reduce | Display All | ☐ Legend | Export | Export All | Refresh | ☐ Auto-Refresh | Export | Export All

User Input (not both)	Depth to Water	Meters		Feet	147	4480 56
User Input (optional)	User provided moist bulk density (rho_m)				kg/M^3	
User Inputs (optional)	Dry Bulk Density (rho, 1415 is default value) =				1415 kg/m^3	1550 kg/m^3 - **Moist bulk density used in calculations**
	Vol Moist Content (Theta_v, 0 135 is default value) =				0 135	
	Calculated moist bulk density (rho_m) =				1550 kg/m^3	

	Boring 1	Boring ID	Stockpile								
		If a Composite Sample from a Depth Interval						Grab Samples			
	Sample Number (increasing depth)	Feet Top of Sample	Feet Bottom of Sample	Feet Ave Depth	Meters Top of Sample	Meters Bottom of Sample	Meters Ave Depth	z Feet	z Meters	Z Assigned depth in cm	Chl Conc. mg/kg
User Inputs	1			0			0	0 1		3 048	343 6
	2			0			0	10		304 8	172
	3			0			0			0	
	4			0			0			0	
	5			0			0			0	
	6			0			0			0	
	7			0			0			0	
	8			0			0			0	
	9			0			0			0	
For Depths, use feet or meters **(not both)**	10			0			0			0	
	11			0			0			0	
	12			0			0			0	
	13			0			0			0	
	14			0			0			0	
	15			0			0			0	
Up to 10 Borings are allowed	16			0			0			0	
	17			0			0			0	
	18			0			0			0	
	19			0			0			0	
	20			0			0			0	
	21			0			0			0	
	22			0			0			0	
	23			0			0			0	
	24			0			0			0	
	25			0			0			0	
	26			0			0			0	
	27			0			0			0	
	28			0			0			0	
	29			0			0			0	
	30			0			0			0	
									Chloride load for Boring 1 in kg/m^2 =		1 63

		Proportional Area Weights	Chl Load of each Borehole	Equal Area Weights	
User Input (Optional)	Boring 1	100 00	1 63	1 00	
	Boring 2		0 00	0 00	
	Boring 3		0 00	0 00	
	Boring 4		0 00	0 00	
	Boring 5		0 00	0 00	
Pro Area Weights must sum to between 0 975 and 1 025	Boring 6		0 00	0 00	
	Boring 7		0 00	0 00	
	Boring 8		0 00	0 00	
	Boring 9		0 00	0 00	
	Boring 10		0 00	0 00	
	Sum of weights	100		1	
Output for AMIGO	**Averaged Chloride Load of All Boreholes**			1 63	kg/m^2

Introduction

A review of available literature regarding the geology and hydrology in the area was performed to characterize the local and regional hydrogeology of the Wilderspin Federal tank battery site operated by Southwest Royalties. The land use in the area is primarily used for oil and gas exploration as well as mining of potash and other salts containing high levels of chloride which are present on the surface and at shallow depths.

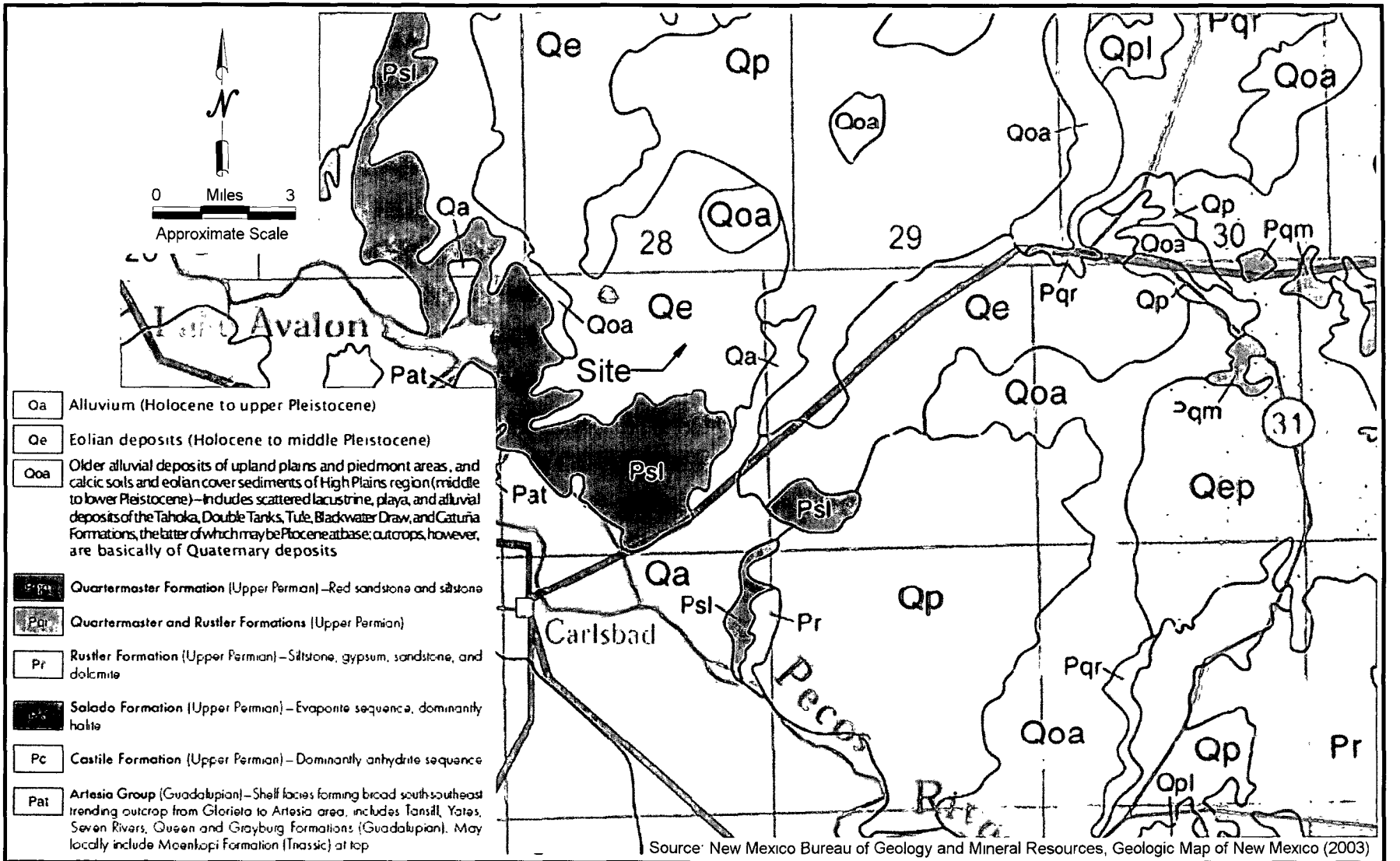
Geologic Setting

The geologic map depicted as Figure 1 shows the surface geology of the site to consist of Quaternary eolian (Qe) sands which were deposited in topographically low areas. Beneath the Quaternary Eolian sand are Quaternary Alluvium (Qa) and/or older alluvial deposits (Qoa). The older alluvial deposits include scattered lacustrine, playa, and alluvial deposits of the Gatuna Formation. An unconformity exists at the base of the Quaternary deposits as they are underlain by Permian-aged Salado Formation (Psl). The Salado Formation consists of evaporate sequences (mostly halite and potash) which have been commercially mined in this area of Eddy County. It is important to note that the Wilderspin Federal Tank Battery site is close to surficial salt deposits of the Salado Formation where it outcrops less than a mile to the south and west of the site. Alkali Lake, a natural playa lake within the Salado Formation, is located less than two miles northwest of the site.

Hydrologic Setting

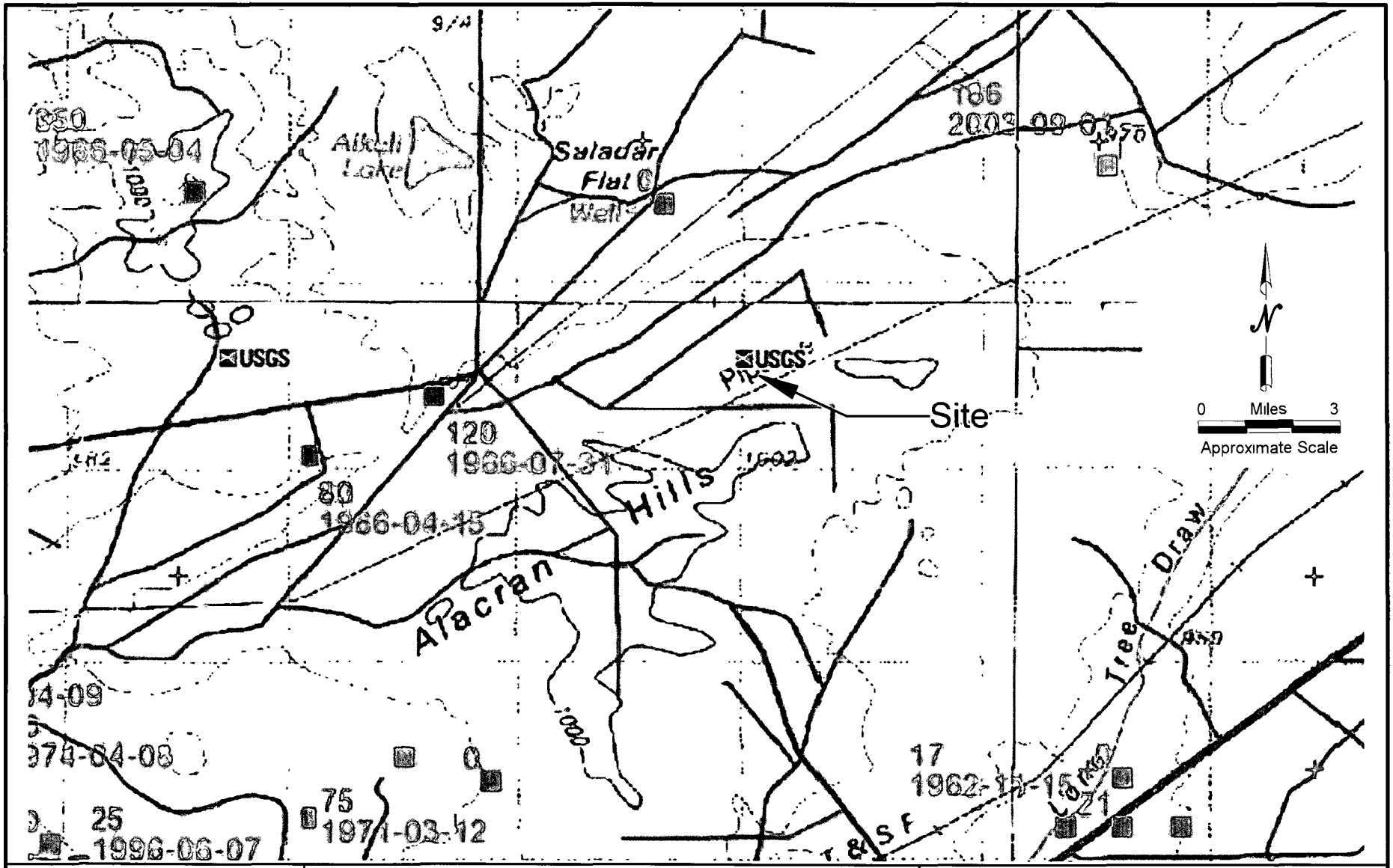
Based on database information obtained from the New Mexico State Engineer Office (NMSEO) website, there are no water supply wells located within one mile from the site. A water well located approximately 1.6 miles west and another 2 miles northeast appear to be completed within the Alluvial Deposits (Qoa) with reported water table depths of 120 ft and 186 ft, respectively, as shown in Figure 2. Linear interpolation of those values results in a water table depth of approximately 147 ft beneath the site.

No water quality data for the site is available but, based on the proximity of the Salado Formation as an outcrop and immediately underlying any water-bearing alluvium, dissolved solids are likely excessive such that the groundwater is not suitable for human consumption, livestock watering or irrigation use, which may explain the lack of water wells in the area. Well yields are also expected to be low. Some wells exist because they were initially drilled for oil and gas exploration and later converted for brine water supply for drilling operations which would be the only beneficial use for shallow groundwater in the area. Water well records of nearby wells are included in Attachment A.



Source: New Mexico Bureau of Geology and Mineral Resources, Geologic Map of New Mexico (2003)

SPORT ENVIRONMENTAL SERVICES	Southwest Royalties Inc. Wilderspin Federal Tank Battery Sec 11, T21S, R27E Eddy County, New Mexico	FIGURE 1 Geologic Map



Southwest Royalties Inc.
Wilderspin Federal Tank Battery
Sec 11, T21S, R27E
Eddy County, New Mexico

FIGURE 2

Water Well Location Map

References

Hendrickson, G. E., 1952, *Geology and Ground-Water Resources of Eddy County, New Mexico*, New Mexico Bureau of Mines and Mineral Resources, Ground-Water Report 3.

Kelley, Vincent C., 1971, *Geology of the Pecos country, southeastern, New Mexico*, New Mexico Bureau of Mines and Mineral Resources, Memoir 24.

New Mexico Bureau of Geology and Mineral Resources, 2003, *Geologic Map of New Mexico*, 1:500,000

Richey, Steven F., 1985, *Geohydrology of the Delaware Basin and Vicinity, Texas and New Mexico*, U. S. Geological Survey Water-Resources Investigations Report 84-4077.

ATTACHMENT A

WATER WELL RECORDS OBTAINED FROM

NEW MEXICO OFFICE OF THE STATE ENGINEER DATABASE

Form WR-23 STATE ENGINEER OFFICE

North Cedar Hills Unit No. 1

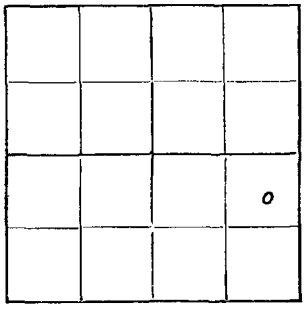
P4387

SANTA FE

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Humble Oil and Refining Co.
Street and Number P. O. Box 1650
City Hobbs State New Mexico
Well was drilled under Permit No. C-1333 and is located in the NW ¼ NW ¼ SE ¼ of Section 5 Twp. 21S Rge. 27E
(B) Drilling Contractor Abbott Brothers License No. WD-46
Street and Number P. O. Box 637
City Hobbs State New Mexico
Drilling was commenced May 4 19 66
Drilling was completed May 11 19 66

Elevation at top of casing in feet above sea level ..... Total depth of well 400
State whether well is shallow or artesian shallow Depth to water upon completion 350

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1	350	363	13	anhydrite, broken lime
2				
3				
4				
5				

1966 JUN -7 AM 9:05 STATE ENGINEER OFFICE SANTA FE, N. M.

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
7	20	10	0	312	312	Open	none	

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used

Section 5 PLUGGING RECORD

Name of Plugging Contractor ..... License No. .....
Street and Number ..... City ..... State .....
Tons of Clay used ..... Tons of Roughage used ..... Type of roughage .....
Plugging method used ..... Date Plugged ..... 19 .....
Plugging approved by:

..... Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

Date Received MAY 26 1966 AM 8:51 STATE ENGINEER OFFICE DISTRICT ✓

File No. C-1333 Use Owd Location No. 21.27.5.411

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	1	1		soil
1	30	29		caliche
30	180	150		gravel and lime
180	181	1		water sand, light
181	250	69	red	shale and gravel
250	300	50	red	shale
300	310	50	grey	lime
310	350	40		lime, broken
350	363	13		anhydrite, broken lime
363	400	37		broken lime

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

Murrell Abbott

Well Driller

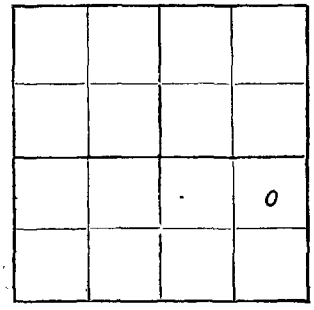
Form WR-23 STATE ENGINEER OFFICE North Ced[illegible] Hills Unit No. 1 194389

SANTA FE

WELL RECORD, PLUGGING

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Humble Oil & Refining Company

Street and Number P. O. Box 1650

City Hobbs State New Mexico

Well was drilled under Permit No. C-1333 and is located in the ¼ NE ¼ SE ¼ of Section 5 Twp. 21S. Rge. 27E.

(B) Drilling Contractor License No.

Street and Number

City State

Drilling was commenced 19

Drilling was completed 19

Elevation at top of casing in feet above sea level Total depth of well

State whether well is shallow or artesian Depth to water upon completion

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1				
2				
3				
4				
5				

1961 FEB 17 AM 9:45 STATE ENGINEER OFFICE SANTA FE, N. M.

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used

Section 5 PLUGGING RECORD

Name of Plugging Contractor Abbott Brothers License No. WD-46

Street and Number P. O. Box 637 City Hobbs State New Mexico

Tons of Clay used Tons of Roughage used Type of roughage

Plugging method used Wet concrete plug over rubble fill. Date Plugged January 17 19 67

Plugging approved by: James Hughes Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used
1	3	6	4

FOR USE OF STATE ENGINEER ONLY

Date Received JAN 20 1967 AM 8 30

File No. C-1333 Use O & D Location No. 21.27.5.411

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

Murrell Abbott
Well Driller

Ck
1310

IMPORTANT—READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM

SEP 15 A. 8:58

APPLICATION FOR PERMIT

To Appropriate the Underground Waters of the State of New Mexico

Trn 197363

CARLSBAD UNDERGROUND WATER BASIN

Application No. C-507 Book C-3 Date Received September 4, 1953

1. Name of applicant R. O. Dinwiddie,
   Postoffice address P. O. Box 689 - Road, Carlsbad,
   County of Chaves, State of New Mexico

2. Source of water supply Artesian from Yates Sand Horizon,
   (state whether artesian or shallow ground water basin)
   located in Carlsbad Ground Water Basin,
   (name of underground stream, valley, artesian basin, etc.)

3. The well is ~~XXXX~~ located in the SW ¼, NE ¼, NW ¼,
   of section 14, Township 21 South, Range 27 East, N.M.P.M.
   on land owned by State of New Mexico

4. Description of well: driller Beadle & Yates; depth ~~XXXX~~ drilled feet;
   diamenter (outside) of casing 7 inches; type of pump and power plant to be used
   Electric Powered Turbine

5. Quantity of water to be appropriated and beneficially used 3 acre feet per annum
   (feet depth or acre feet per acre)
   for Domestic purposes.

6. Acreage to be irrigated 1 acre maximum acres
   located and described as follows (describe only lands to be irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
Does not apply					

(Note: location of well and acreage to be irrigated must be shown on plat on reverse side.)

7. Time required to commence construction None;
   Time required to complete the works 1 Year;
   Time required to fully apply water to beneficial use 1 Year

8. Additional statements or explanations (including data on any other water rights appurtenant to above lands)
   This well was drilled for the purpose of obtaining oil. No production was encountered however, and it is desired to retain said well for domestic use on the oil Lease.

FILED
SEP
OFFICE
ARTESIAN WELL SUPERVISOR
ROSWELL, NEW MEXICO

I, Robt. W. Atha, being first duly sworn upon my oath, depose and say that I have carefully read the foregoing statement and each and all of the items contained therein, and that the same are true to the best of my knowledge and belief.

Robt. W. Atha
R. O. Dinwiddie applicant

Subscribed and sworn to before me this 2nd day of September, A. D., 1953

My Commission expires 3-7-54

Thedal Smith
Notary Public.

APPROVAL OF THE STATE ENGINEER

Number of this permit C-507 Date received corrected

Recorded in Book C-3 Publication of notice ordered

Page 507 Name of paper

Application received [illegible], 1957 Affidavit of publication filed

Date returned for correction Date of approval April 11, 1957

This application is approved for 3 acre feet of water subject to all prior valid and existing rights to the use of the waters of said underground source and provided that the applicant complies with all rules and regulations of the State Engineer pertaining to the drilling of wells

Appropriation of water to be limited at all times to 3 acre feet per annum for domestic purposes and the irrigation of not more than 1 acre of non-commercial garden.

Works shall be completed and proofs filed on or before April 30, 1958

Water shall be applied to beneficial use and proofs filed on or before

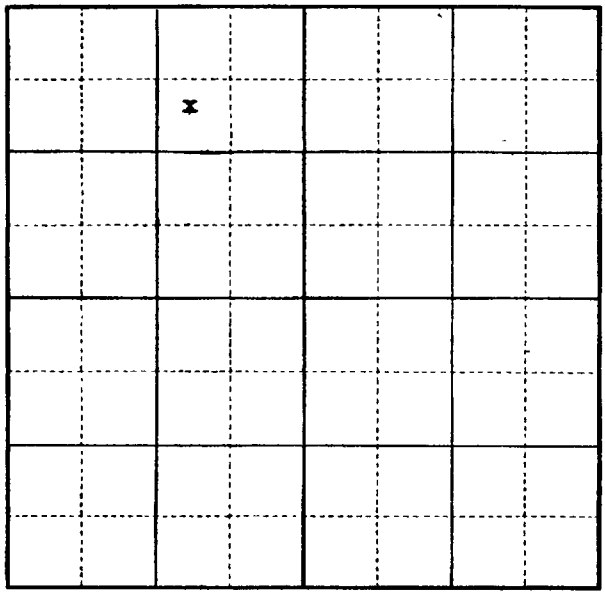
This is to certify that I have examined the above application for permit to appropriate the underground waters of the State of New Mexico and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 11th day of April, A. D., 1957.

S. E. Reynolds
State Engineer

LOCATE WELL AND ACREAGE TO BE IRRIGATED AS ACCURATELY AS POSSIBLE ON FOLLOWING PLAT:

Section (s) 14, Township 21 South, Range 27 East, N.M.P.M.



By Fred H. Hennighausen
Fred H. Hennighausen
District Supervisor

INSTRUCTIONS

This form shall be executed, preferably typewritten, in triplicate and shall be accompanied by a filing fee of $5.00. Each of triplicate copies must be properly signed and attested.

A separate application for permit must be filed for each well used.

Secs. 1-4—Fill out all blanks fully and accurately.

Sec. 5—Irrigation use shall be stated in feet depth or acre feet of water per acre to be applied on the land. If for domestic, municipal, or other purposes, state total quantity in acre feet to be used annually. Domestic use may include the irrigation of not more than one acre of lawn and garden for noncommercial use.

Sec. 6—Describe only the lands to be irrigated. If on unsurveyed lands describe by legal subdivision "as projected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some permanent, easily located natural object.

Sec. 7—Estimate time reasonably required to commence and to complete project.

Sec. 8—If lands are irrigated from any other source, explain in this section. Give any other data necessary to fully describe water right sought.

If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

SOUTHWESTERN PUBLISHING CO., SANTA FE, N. M.

File Number: _____

2-16838
55

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

1. APPLICANT

Name: UNIT PETROLEUM Work Phone: 505-885-4195
Contact: MIKE BURTON Home Phone: _____
Address: 1108 WEST PIERCE
CARLSBAD
City: _____ State: NM Zip: 88220

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SW 1/4 NW 1/4 SE 1/4 Section: 3 Township: 21S Range: 27E N.M.P.M.
in _____ County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: _____d _____m _____s Longitude: _____d _____m _____s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD ___ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Is this well within a municipality? ___ if yes, where? _____

H. Give State Engineer File Number if existing well: C-1142

I. On land owned by (required): BLM

3. USE OF WATER (check use applied for)

___ One household, non-commercial trees, lawn and garden not to exceed a total of one acre.

METER REQUIRED
SEE CONDITION OF APPROVAL No. 3,5A

___ Livestock watering.

Note: If any of the following items are marked, give the name and nature of business or use under item 5 of the additional statements or explanations section.

___ More than one household, non-commercial trees, lawns and gardens not to exceed a total of one acre.

___ Drinking and sanitary purposes and the irrigation of non-commercial trees, shrubs and lawns not to exceed one acre in conjunction with a commercial operation.

X Prospecting, mining or drilling operations to discover or develop natural resources.

___ Construction of public works, highways and roads.

Trn Desc: _____ File Number: C-1142 (T-1)
Log Due Date: _____ Trn Number: 289731

File Number: _____

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

4. WELL INFORMATION (Change, Repair, Drill, Test, Supplement)

Name of well driller and driller license number:

_____.

Approximate depth ____ feet; Outside diameter of casing ___ inches.

___ Change Location of existing well or replacement well

___ Repair or Deepen:
- ___ Clean out well to original depth
- ___ Deepen well from _____ to _____ feet
- ___ Other _____

___ Drill and test a well for _____ use.

___ Supplemental well

5. ADDITIONAL STATEMENTS OR EXPLANATIONS: Project is Yates State #2

ACKNOWLEDGEMENT FOR NATURAL PERSONS

(I, We) MIKE BURTON affirm that the
(Please Print)
foregoing statements are true to the best of (my, our) knowledge and belief.

Mike Burton _____.
Applicant Signature Applicant Signature

Trn Desc: _____ File Number: _____
Log Due Date: _____ Trn Number: _____
Form: wr-01

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (A thru I)

A The maximum amount of water that may be appropriated under this permit is 3 acre-feet in any year.

B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-12 New Mexico Statutes Annotated. A licensed driller shall not be required for the construction of a driven well; provided, that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter (Section 72-12-12).

C Driller's well record must be filed with the State Engineer within 10 days after the well is drilled or driven. Well record forms will be provided by the State Engineer upon request.

D The casing shall not exceed 7 inches outside diameter except under specific conditions in which reasons satisfactory to the State Engineer are shown.

E If the well under this permit is used at any time to serve more than one household or livestock in a commercial feed lot operation, or for drinking and sanitation purposes in conjunction with a commercial operation, the permittee shall notify the State Engineer Office in writing.

F In the event this well is combined with other wells permitted under Section 72-12-1 New Mexico Statutes Annotated, the total outdoor use shall not exceed the irrigation of one acre of non-commercial trees, lawn, and garden, or the equivalent outside consumptive use, and the total appropriation for household and outdoor use from the entire water distribution system shall not exceed 3 acre-feet in any year.

G If artesian water is encountered, all rules and regulations pertaining to the drilling and casing of artesian wells shall be complied with.

H The amount and uses of water permitted under this Application are subject to such limitations as may be imposed by the courts or by lawful municipal and county ordinances which are more restrictive than applicable State Engineer Regulations and the conditions of this permit.

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (Continued)

I The permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

SPECIFIC CONDITIONS OF APPROVAL

3 Appropriation and use of water under this permit shall not exceed a period of one year from the date of approval.

5A A totalizing meter shall be installed before the first branch of the discharge line from the well and the installation shall be acceptable to the State Engineer; the Engineer shall be advised of the make, model, serial number, date of installation, and initial reading of the meter prior to appropriation of water; pumping records shall be submitted to the District Supervisor for each calendar month on or before the 10th day of the following month.

Meter report will be submitted when project is terminated if less than thirty days and upon completion of the project.

ACTION OF STATE ENGINEER

This application is approved for the use indicated, subject to all general conditions and to specific conditions listed above.

Witness my hand and seal this 09 day of Dec A.D., 2003

John R. D Antonio, Jr., P.E. , State Engineer

By: Mike Stapleton

The amount, uses and locations of domestic water wells permitted under 72-12-1 (NMSA) are subject to such limitations as may be imposed by the courts or by lawful municipal and county ordinances which are more restrictive than applicable State Engineer Regulations and the conditions of this permit.

Trn Desc: C 01142 (T-1)
Log Due Date:
Form: wr-01

File Number: C 01142
Trn Number: 289731

John R. D Antonio, Jr., P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 289731
File Nbr: C 01142 (T-1)
Well File Nbr: C 01142

Dec. 09, 2003

UNIT PETROLEUM
C/O MIKE BURTON
1108 WEST PIERCE
CARLSBAD, NM 88220

Greetings:

The well driller's record for the above numbered well has been received in this office indicating your well has been completed.

Your permit was granted with the condition that a meter be installed and meter readings submitted to this office. A copy of your permit is enclosed for your information.

Per Condition 5A, please advise this office within 30 days, on the attached form, of the make, model, serial number, date of installation, and initial reading of the meter prior to appropriation of the water.

If you have any questions, please feel free to contact us.

Sincerely,

M. Chavez
for Mike Stapleton
(505)622-6467

Enclosure
cc: Santa Fe Office

wellcon5

19997 WR—46

APPLICATION TO APPROPRIATE UNDERGROUND WATERS IN ACCORDANCE WITH SECTION 75-11-1 NEW MEXICO STATUTES

(Three Acre Feet Per Annum)

1. Name and Address of Applicant: File No. C-1142

Gerald Elmore

Box 696

Carlsbad, New Mexico

2. Describe well location under one of the following subheadings:

a. ____ ¼ NW ¼ SE ¼ of Sec. 3 Twp. 21 S. Rge. 27 E. N M. P. M., in ____ County

b. Tract No. ____ of Map No ____ of the ____ District.

c Lot No. ____ of Block No. ____ of the ____ Subdivision, of record in ____ County.

d. (Describe location by direction and distance from known land marks)

3 Give street address or route and box No. of property upon which well is to be located, if possible: ____

4 Name of driller, if known: ____

5 Approximate depth of well (if known) 100 feet; outside diameter of casing 7 inches

6 Use of water (check appropriate box or boxes):

- [ ] Household, trees, lawn and non-commercial garden not to exceed 1 acre.
- [X] Livestock watering.
- [ ] Drinking and sanitary purposes or the irrigation of non-commercial trees, shrubs and lawns in conjunction with a commercial operation
- [ ] Prospecting, mining or drilling operations to discover or develop natural resources.
- [ ] Construction of public works, highways and roads.

If any of the last three were marked, give name and nature of business under Remarks. (Item 7)

1963 JUL 10 AM 8:41 STATE ENGINEER OFFICE SANTA FE, N. M.

7 Remarks: ____

I, Gerald Elmore affirm that the foregoing statements are true to the best of my knowledge and belief and that development shall not commence until approval of the permit has been obtained.

Gerald Elmore, Applicant

By: ____ Date: July 8, 1963

ACTION OF STATE ENGINEER

This application is approved for the use indicated, subject to all general conditions and to the specific conditions numbered 1 & 4 on the reverse side hereof. This permit will automatically expire unless this well is drilled or driven and the well record filed on or before July 8, 1964.

S E Reynolds, State Engineer

By: Delbert W. Nelson
Office Supervisor, District II

Date: July 8, 1963

1963 JUL -8 PM 3:08

GENERAL CONDITIONS OF APPROVAL

A. The maximum amount of water that may be appropriated under this permit is 3 acre feet in any period of one year.

B. Well shall be drilled only by a driller licensed in the State of New Mexico in accordance with Section 75-11-13 New Mexico Statutes. A licensed driller shall not be required for the construction of a driven well; provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter (Section 75-11-13).

C. Driller's log must be filed in office of the State Engineer within 10 days after well is drilled or driven. Failure to file log within that time shall result in automatic cancellation of the permit. Upon request of the permittee, log forms will be provided by the State Engineer.

D. Diameter of casing limited to 7 inch outside diameter except under specific conditions in which reasons satisfactory to the State Engineer are shown.

E. Any use of water from the well other than as indicated shall automatically cancel this permit unless prior approval is obtained from the State Engineer.

SPECIFIC CONDITIONS OF APPROVAL (Applicable only when so indicated on the other side of this form)

1. Depth of well in no event to exceed the thickness of the valley fill or Ogallala formation.
2. Well to be constructed to artesian well specifications and State Engineer Office to be notified before casing is landed or cemented
3. Appropriation and use of water under this permit limited for a definite period of not to exceed one year from the date of approval.
4. Limited to household, trees, lawn and non-commercial garden not to exceed one acre
5. A totalizing meter approved by the State Engineer shall be installed on the discharge line before the first branch line prior to the appropriation of water and pumping records shall be submitted to the District Supervisor (a) for each calendar month, on or before the 30th day of the following month (b) on the 10th of January, April, July and October of each year for the three preceding calendar months (c) for each calendar year on or before the 30th day of January of the following year.
6. Well to be plugged upon completion of permitted use and plugging report filed within 10 days.
7. Final approval for the use of said well dependent upon a leakage test to be made by the State Engineer Office

GENERAL INSTRUCTIONS

Application shall be executed in triplicate and forwarded with a $1.00 filing fee to the appropriate office of the State Engineer

A separate application must be filed for each well to be drilled or used.

If well to be used is an existing well to be retained for uses as indicated, an explanation (and file number, if possible) should be given under Remarks. (Item 7).

Applications for appropriation, well logs and request for information in the following basins should be addressed to the State Engineer at the office indicated:

Rio Grande, Bluewater and Estancia Basins
District No. 1, 1841 Lomas Blvd., N.E., Albuquerque, New Mexico

Roswell, Lea, Portales, Carlsbad, Hondo, Penasco and Jal Basins
District No. 2, Box 1717, Roswell, New Mexico

Mimbres, Hot Springs, Virden Valley, Animas, Playas, Gila-San Francisco, San Simon, Lordsburg and Nutt-Hockett Basins
District No. 3, Box 844, Deming, New Mexico

2-19597
22

Revised May 1993

IMPORTANT — READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM.

Declaration of Owner of Underground Water Right

Eddy County Carlsbad

BASIN NAME

Declaration No. C-3268 Date received April 27, 2005

STATEMENT

1. Name of Declarant Winston Ballard
   Mailing Address 1819-2 North Canal
   County of Eddy, State of New Mexico
2. Source of water supply shallow (artesian or shallow water aquifer)
3. Describe well location under one of the following subheadings:
   a. SE ¼ NE ¼ SE ¼ of Sec. 1 Twp. 21S Rge. 22E N.M.P.M., in
   b. Tract No. ______ of Map No. ______ of the ______.
   c. X = ______ feet, Y = ______ feet, N.M. Coordinate System ______ Zone in the ______ Grant.
   On land owned by Winston Ballard / Private
4. Description of well date drilled 1905 driller ______ depth 48 feet.
   outside diameter of casing ______ inches; original capacity ______ gal. per min.; present capacity ______ gal. per min.; pumping lift ______ feet; static water level 13 feet (above) (below) land surface;
   make and type of pump sub pump
   make, type, horsepower, etc., of power plant ______
   Fractional or percentage interest claimed in well ______
5. Quantity of water appropriated and beneficially used ______ (acre feet per acre) 3 acre per Annual (acre feet per annum)
   for watering & Household use for cattle purposes.
6. Acreage actually irrigated 0 acres, located and described as follows (describe only lands actually irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner

(Note: location of well and acreage actually irrigated must be shown on plat on reverse side.)

7. Water was first applied to beneficial use ______ (month) ______ (day) 1905 (year) and since that time has been used fully and continuously on all of the above described lands or for the above described purposes except as follows: ______
8. Additional statements or explanations ______

I, Winston Ballard being first duly sworn upon my oath, depose and say that the above is a full and complete statement prepared in accordance with the instructions on the reverse side of this form and submitted in evidence of ownership of a valid underground water right, that I have carefully read each and all of the items contained therein and that the same are true to the best of my knowledge and belief.

by: [signature], declarant.

Subscribed and sworn to before me this 27th day of April, A.D. 2005

My commission expires 03/05/07 Margaret Wolf Notary Public

T 352257

John R. D Antonio, Jr., P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

Trn Nbr: 352257
File Nbr: C 03268

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Feb. 16, 2006

WINSTON BALLARD
1819 2 N CANAL
CARLSBAD, NM 88220

Greetings:

Enclosed is your copy of Declaration of Owner of the Water Right numbered above, which has been accepted for filing.

Under New Mexico Law, a Declaration is only a statement of declarant's claim. Acceptance for filing does not constitute approval or rejection of the claim.

Sincerely,

Mike Stapleton
(505)622-6521

Enclosure
cc: Santa Fe Office

declare

File Number: _____

2-16939

20-

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

1. APPLICANT

Name: MEWBOURNE OIL Work Phone: 505-885-4195

Contact: SCOTT GREGORY Home Phone: _____

Address: 1108 WEST PIERCE

CARLSBAD

City: _____ State: NM Zip: 88220

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SW 1/4 NW 1/4 SE 1/4 Section: 3 Township: 21S Range: 27E N.M.P.M.
in _____ County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: _____d _____m _____s Longitude: _____d _____m _____s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD ___ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Is this well within a municipality? ___ if yes, where? _____

H. Give State Engineer File Number if existing well: C-1142

I. On land owned by (required): BLM

3. USE OF WATER (check use applied for)

___ One household, non-commercial trees, lawn and garden not to exceed a total of one acre.

___ Livestock watering.

Note: If any of the following items are marked, give the name and nature of business or use under item 5 of the additional statements or explanations section.

___ More than one household, non-commercial trees, lawns and gardens not to exceed a total of one acre.

___ Drinking and sanitary purposes and the irrigation of non-commercial trees, shrubs and lawns not to exceed one acre in conjunction with a commercial operation.

X Prospecting, mining or drilling operations to discover or develop natural resources.

___ Construction of public works, highways and roads.

Trn Desc: _____ File Number: C-1142 (T-2)

Log Due Date: _____ Trn Number: 291801

Form: wr-01

File Number: _____

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

4. WELL INFORMATION (Change, Repair, Drill, Test, Supplement)

Name of well driller and driller license number:

_____.

Approximate depth ____ feet; Outside diameter of casing ___ inches.

___ Change Location of existing well or replacement well

___ Repair or Deepen:
- ___ Clean out well to original depth
- ___ Deepen well from _____ to _____ feet
- ___ Other _____

___ Drill and test a well for _____ use.

___ Supplemental well

5. ADDITIONAL STATEMENTS OR EXPLANATIONS:

Project is Esperanza 1 Fed com 1. located in Sec 1 T21S R29E 660FSL 1550 FEL
Applicant agrees to have agent letter, land & well owner permission on file with NMSEO prior to any diversion if permit is approved.

ACKNOWLEDGEMENT FOR NATURAL PERSONS

(I, We) SCOTT GREGORY affirm that the
(Please Print)
foregoing statements are true to the best of (my, our) knowledge and belief.

_____ _____.
Applicant Signature Applicant Signature

Trn Desc: _____ File Number: _____
Log Due Date: _____ Trn Number: _____
Form: wr-01

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (Continued)

I The permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

SPECIFIC CONDITIONS OF APPROVAL

3 Appropriation and use of water under this permit shall not exceed a period of one year from the date of approval.

5A A totalizing meter shall be installed before the first branch of the discharge line from the well and the installation shall be acceptable to the State Engineer; the Engineer shall be advised of the make, model, serial number, date of installation, and initial reading of the meter prior to appropriation of water; pumping records shall be submitted to the District Supervisor for each calendar month on or before the 10th day of the following month.

5(d) METER REPORT WILL BE SUBMITTED WHEN PROJECT IS TERMINATED IF LESS THAN THIRTY DAYS AND UPON COMPLETION OF THE PROJECT.

ACTION OF STATE ENGINEER

This application is approved for the use indicated, subject to all general conditions and to specific conditions listed above.

Witness my hand and seal this 05 day of Jan A.D., 2004

John R. D Antonio, Jr., P.E. , State Engineer

By: Mike Stapleton

The amount, uses and locations of domestic water wells permitted under 72-12-1 (NMSA) are subject to such limitations as may be imposed by the courts or by lawful municipal and county ordinances which are more restrictive than applicable State Engineer Regulations and the conditions of this permit.

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (A thru I)

A The maximum amount of water that may be appropriated under this permit is 3 acre-feet in any year.

B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-12 New Mexico Statutes Annotated. A licensed driller shall not be required for the construction of a driven well; provided, that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter (Section 72-12-12).

C Driller's well record must be filed with the State Engineer within 10 days after the well is drilled or driven. Well record forms will be provided by the State Engineer upon request.

D The casing shall not exceed 7 inches outside diameter except under specific conditions in which reasons satisfactory to the State Engineer are shown.

E If the well under this permit is used at any time to serve more than one household or livestock in a commercial feed lot operation, or for drinking and sanitation purposes in conjunction with a commercial operation, the permittee shall notify the State Engineer Office in writing.

F In the event this well is combined with other wells permitted under Section 72-12-1 New Mexico Statutes Annotated, the total outdoor use shall not exceed the irrigation of one acre of non-commercial trees, lawn, and garden, or the equivalent outside consumptive use, and the total appropriation for household and outdoor use from the entire water distribution system shall not exceed 3 acre-feet in any year.

G If artesian water is encountered, all rules and regulations pertaining to the drilling and casing of artesian wells shall be complied with.

H The amount and uses of water permitted under this Application are subject to such limitations as may be imposed by the courts or by lawful municipal and county ordinances which are more restrictive than applicable State Engineer Regulations and the conditions of this permit.

John R. D Antonio, Jr., P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 291801
File Nbr: C 01142

Jan. 05, 2004

MEWBOURNE OIL
C/O SCOTT GREGORY
1108 WEST PIERCE
CARLSBAD, NM 88220

Greetings:

Enclosed is your copy of the 72-12-1 Permit which has been approved. Your attention is called to the Specific and the General Conditions of Approval of this permit.

Sincerely,

M. Charles

for Mike Stapleton
(505)622-6467

Enclosure

cc: Santa Fe Office

wr_01app

Results of query for chloride content in the Oal, T21S-R27E, T20S-R27E, and T21S-R28E

Section	T	R	Formation	Date	Chlorides (mg/L)	Location (qtr/qtr)
19	21S	27E	OAL	04/20/60	920	21S.27E.19.43142A
19	21S	27E	OAL	11/10/54	1090	21S.27E.19.32444
26	21S	27E	OAL	06/14/71	549	21S.27E.26.232442
29	21S	27E	OAL	09/08/59	170	21S.27E.29.43413
30	21S	27E	OAL	07/01/87	290	21S.27E.30.33332
30	21S	27E	OAL	05/01/92	329	21S.27E.30.33332
31	21S	27E	OAL	01/26/54	455	21S.27E.31.333343
31	21S	27E	OAL	06/27/62	561	21S.27E.31.421114
32	21S	27E	OAL	04/07/55	1110	21S.27E.32.112243
14	20S	27E	OAL	10/27/55	4	20S.27E.14.24434
14	20S	27E	OAL	11/21/85	10	20S.27E.14.24434
14	20S	27E	OAL	06/21/55	14	20S.27E.14.24434
18	21S	28E	OAL	08/27/87	46	21S.28E.18.13333
18	21S	28E	OAL	07/18/97	90	21S.28E.18.13333
18	21S	28E	OAL	04/02/92	110	21S.28E.18.13333
15	22S	28E	OAL	07/17/87	396	22S.28E.15.3413334
15	22S	28E	OAL	07/17/97	410	22S.28E.15.3413334
15	22S	28E	OAL	12/17/85	460	22S.28E.15.341333
15	22S	28E	OAL	07/17/97	590	22S.28E.15.341333
15	22S	28E	OAL	04/22/92	690	22S.28E.15.3413334
15	22S	28E	OAL	04/22/92	1030	22S.28E.15.341333
29	22S	28E	OAL	07/17/97	610	22S.28E.29.13322
29	22S	28E	OAL	05/12/92	780	22S.28E.29.13322
30	22S	28E	OAL	05/12/92	1130	22S.28E.30.44333A
30	22S	28E	OAL	08/19/87	1210	22S.28E.30.44333A
30	22S	28E	OAL	08/19/87	1704	22S.28E.30.12243
30	22S	28E	OAL	07/17/97	1750	22S.28E.30.12243
30	22S	28E	OAL	05/12/92	2600	22S.28E.30.12243
32	22S	28E	OAL	07/21/53	948	22S.28E.32.14121
32	22S	28E	OAL	05/14/81	1310	22S.28E.32.33333A

http://octane.nmt.edu/waterquality/data/gwatersearch.asp

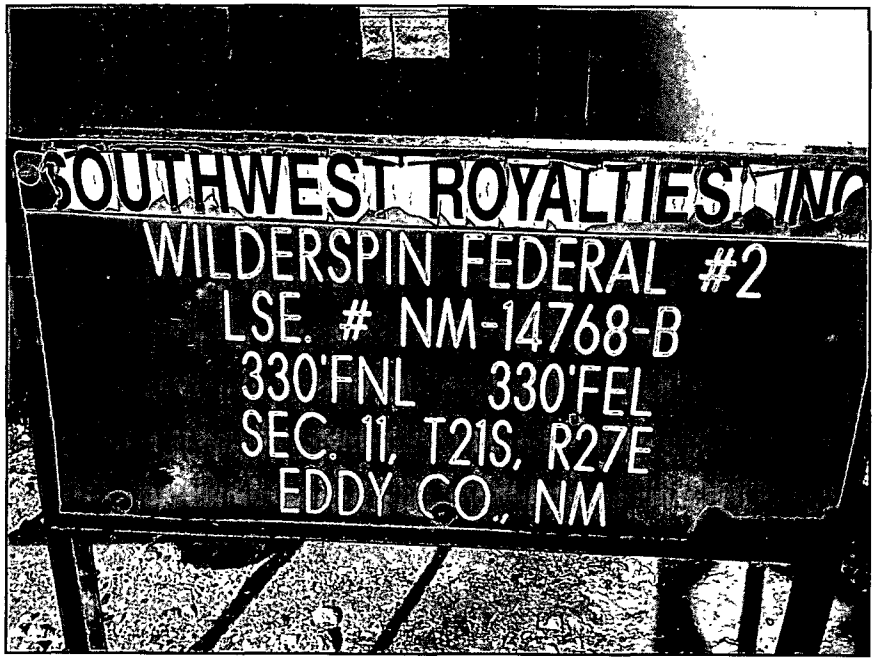
Southwest Royalties, Inc.
Wilderspin Federal Battery
S-11, T-21S, R-27E
Eddy County, New Mexico

SITE PHOTOGRAPHS

Taken April 2, April 6, 7, 8, 27 and May 8, 2009

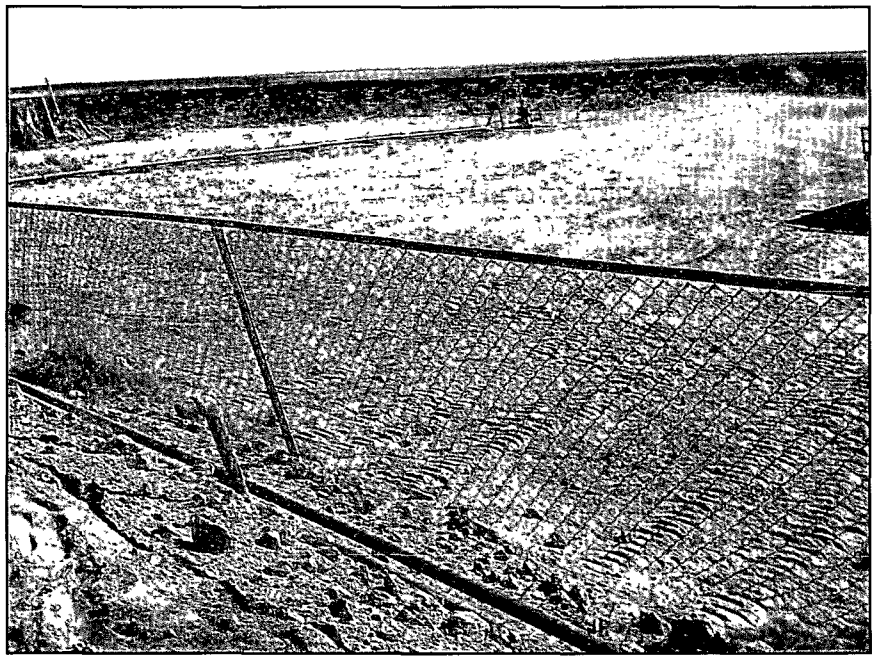
Wilderspin Federal Battery

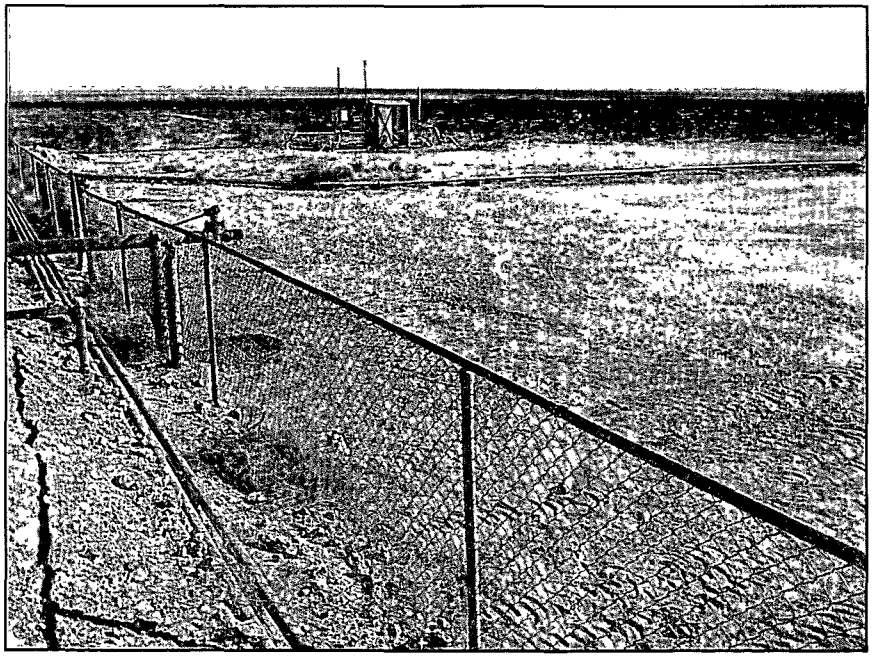
Southwest Royalties, Inc. – Wilderspin Federal Battery
Initial Site Visit Photographs taken April 2, 2009



Southwest Royalties, Inc. – Wilderspin Federal Battery

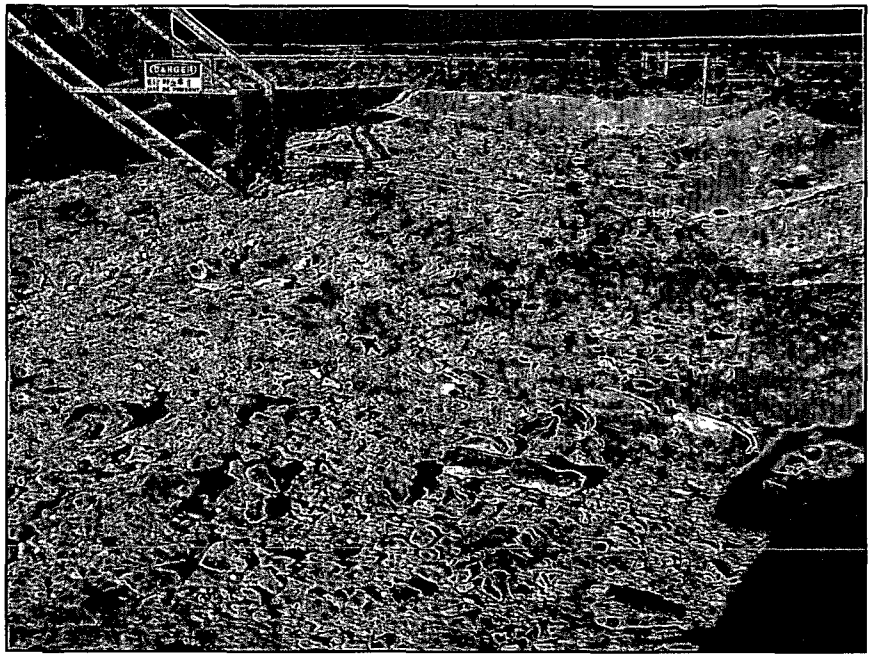
Initial Site Visit Photographs taken April 2, 2009

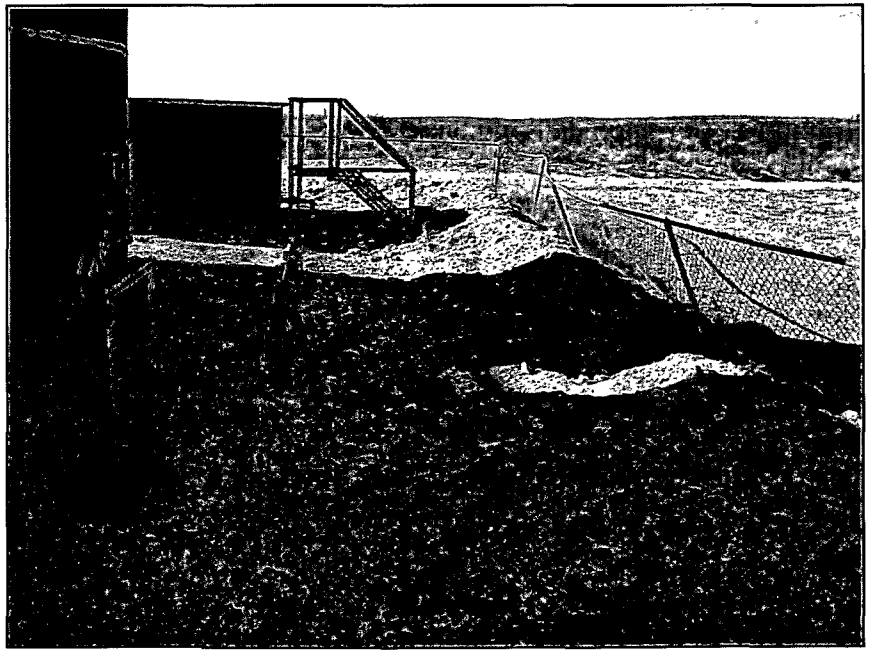




Southwest Royalties, Inc. – Wilderspin Federal Battery

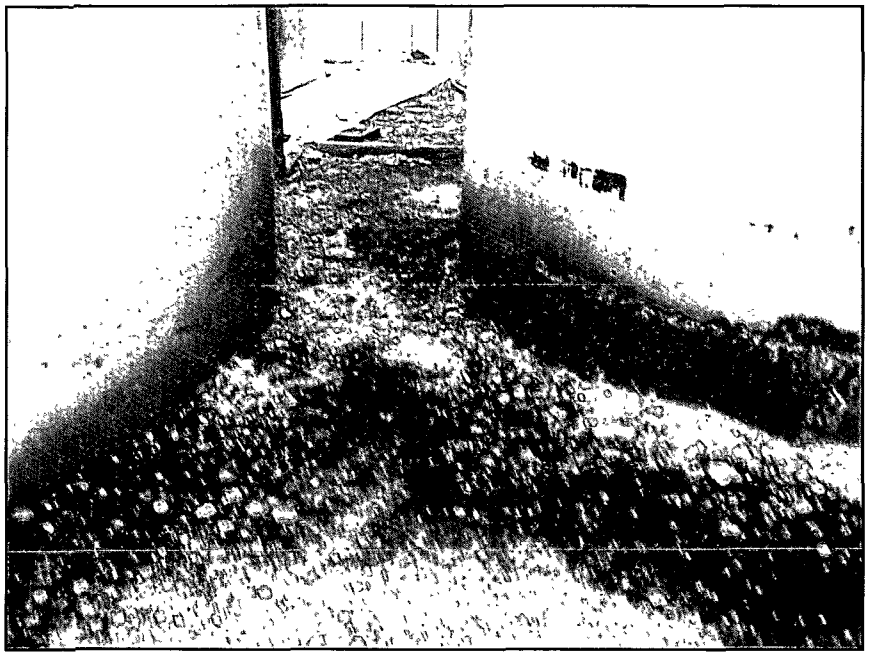
Initial Site Visit Photographs taken April 2, 2009

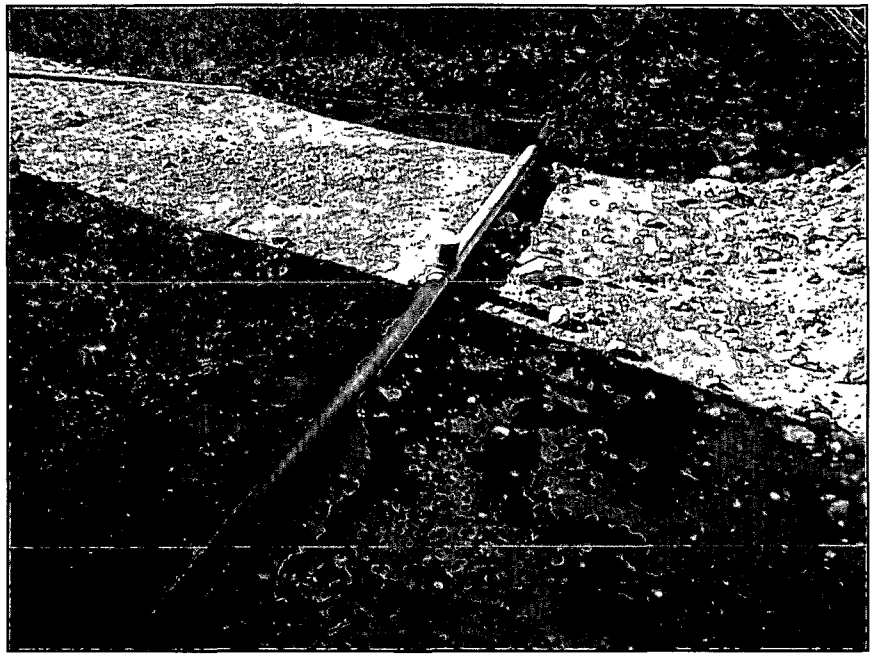


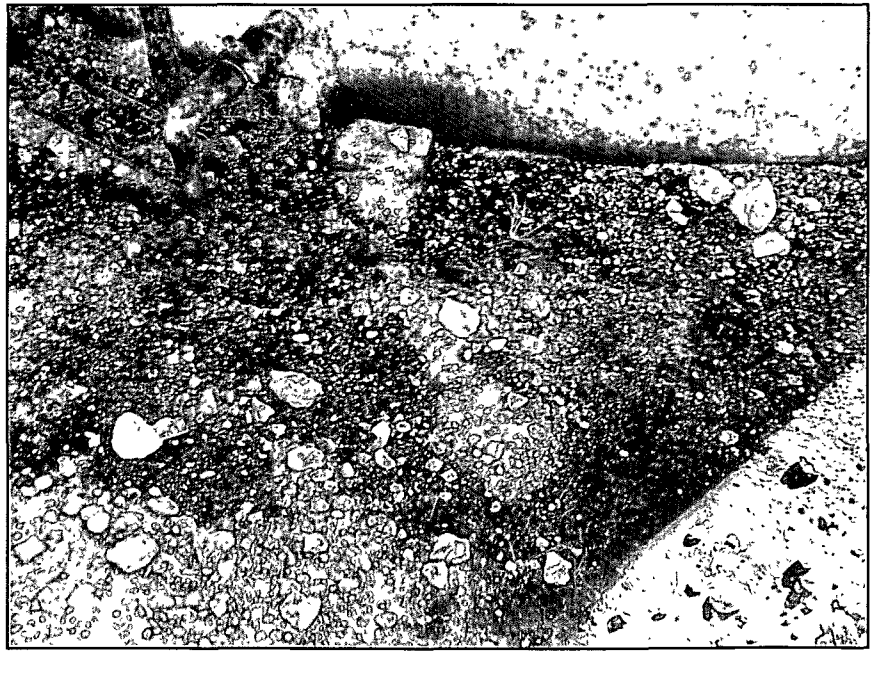


Southwest Royalties, Inc. – Wilderspin Federal Battery

Initial Site Visit Photographs taken April 2, 2009

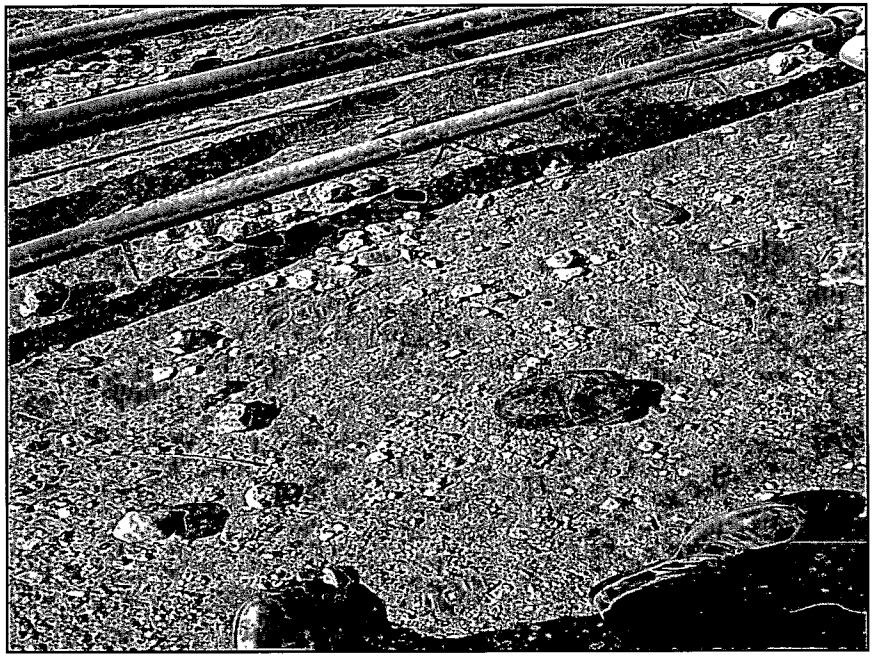






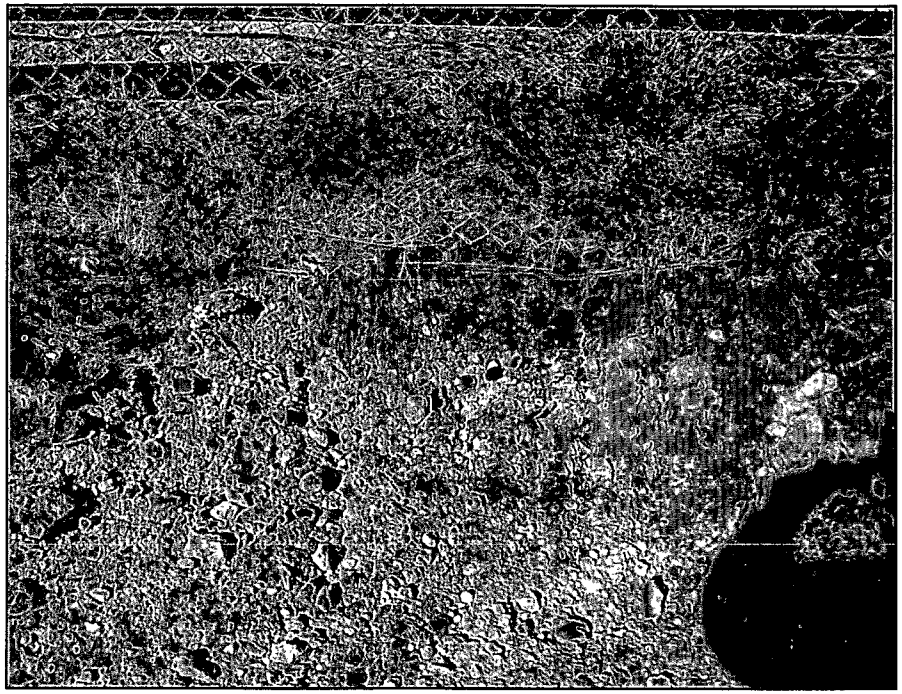
Southwest Royalties, Inc. – Wilderspin Federal Battery

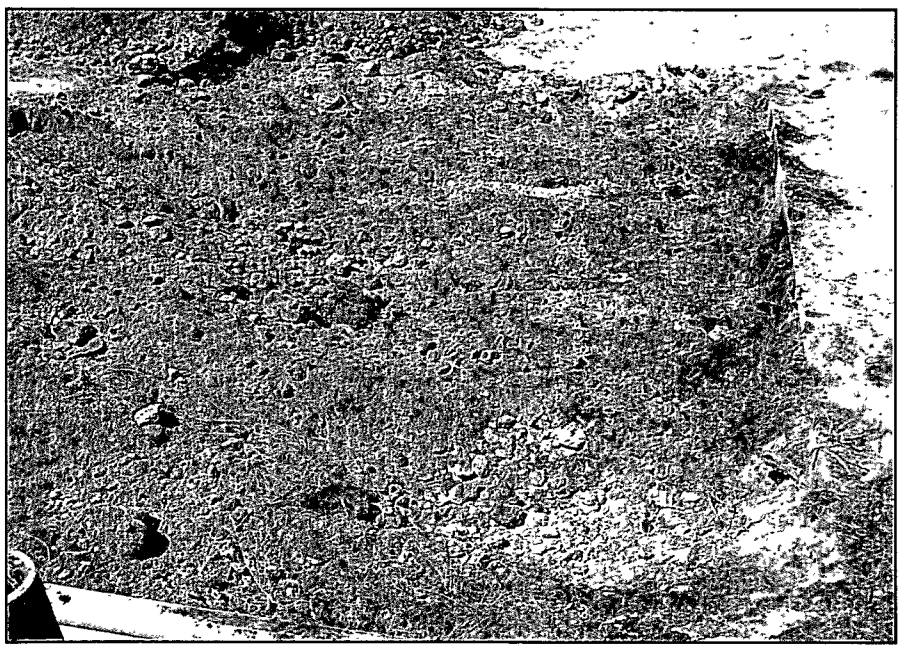
Initial Site Visit Photographs taken April 2, 2009



Southwest Royalties, Inc. – Wilderspin Federal Battery

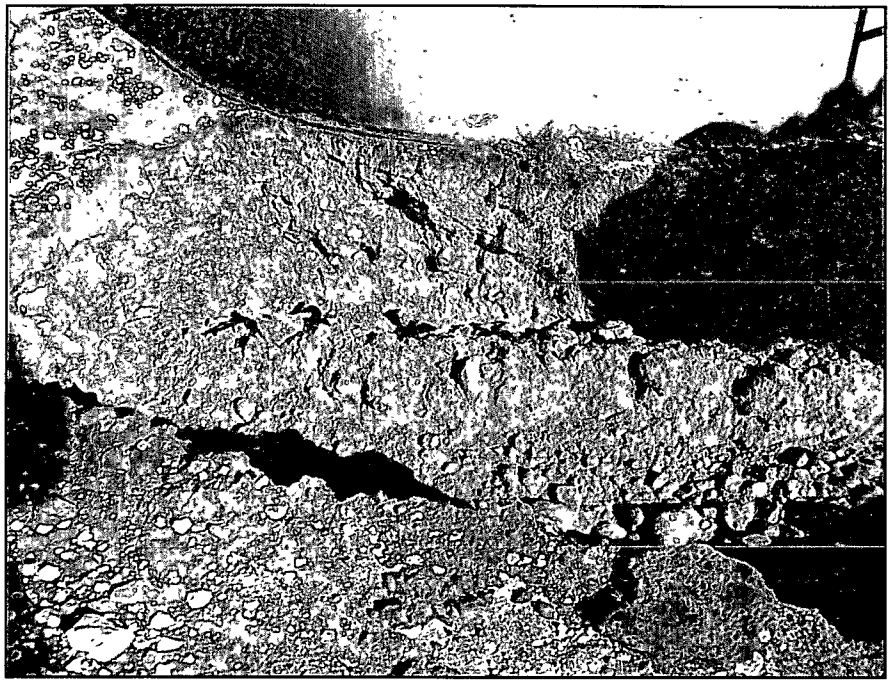
Photographs taken April 6-7, 2009

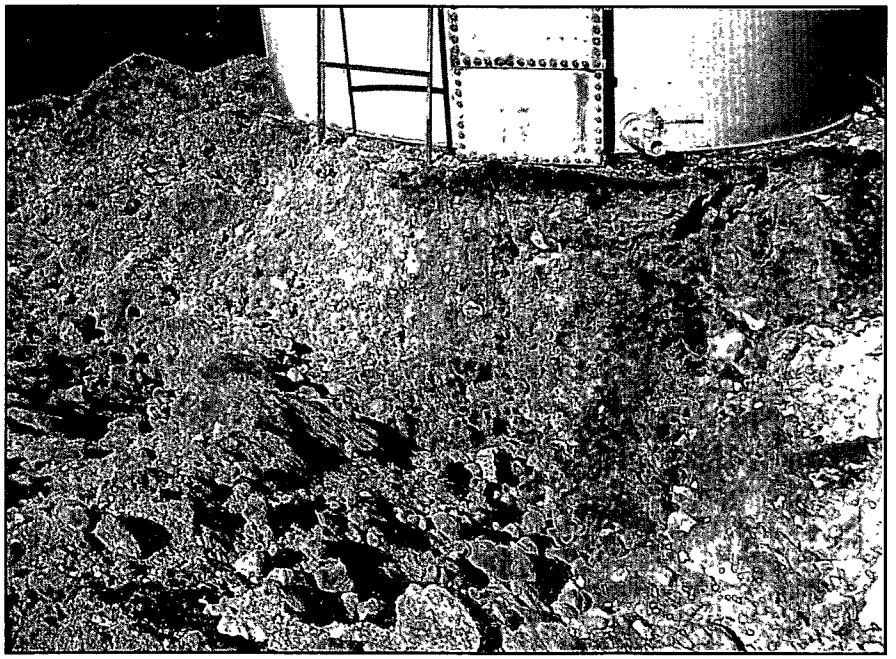




Southwest Royalties, Inc. – Wilderspin Federal Battery

Initial Site Visit Photographs taken April 6-7, 2009



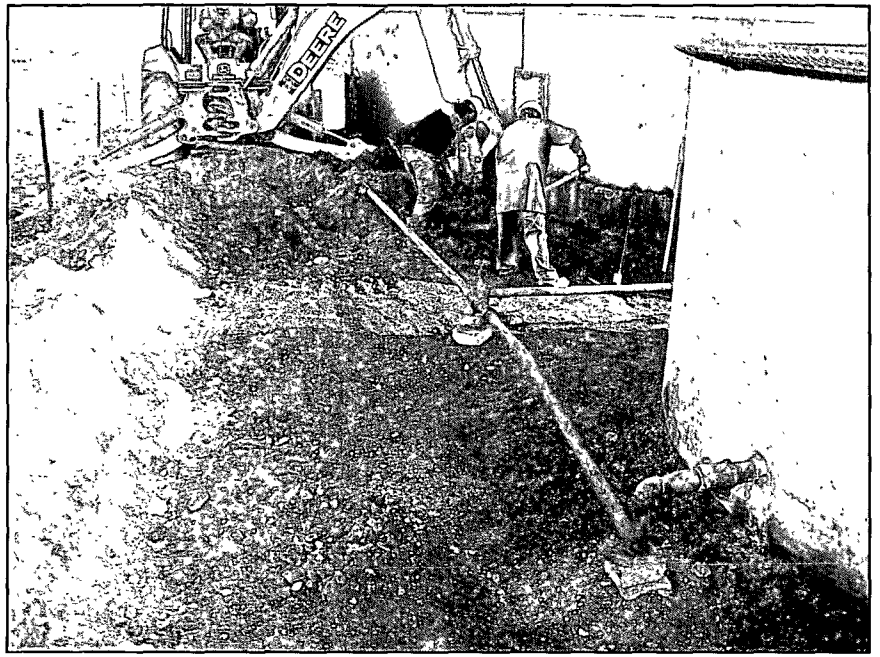


Southwest Royalties, Inc. – Wilderspin Federal Battery

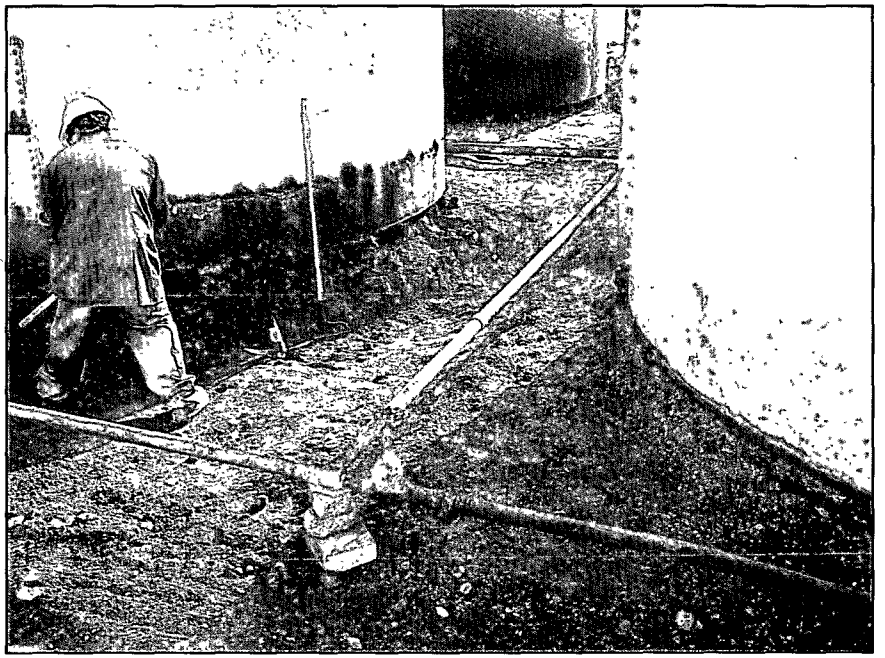
Photographs taken April 6-7, 2009

Southwest Royalties, Inc. – Wilderspin Federal Battery

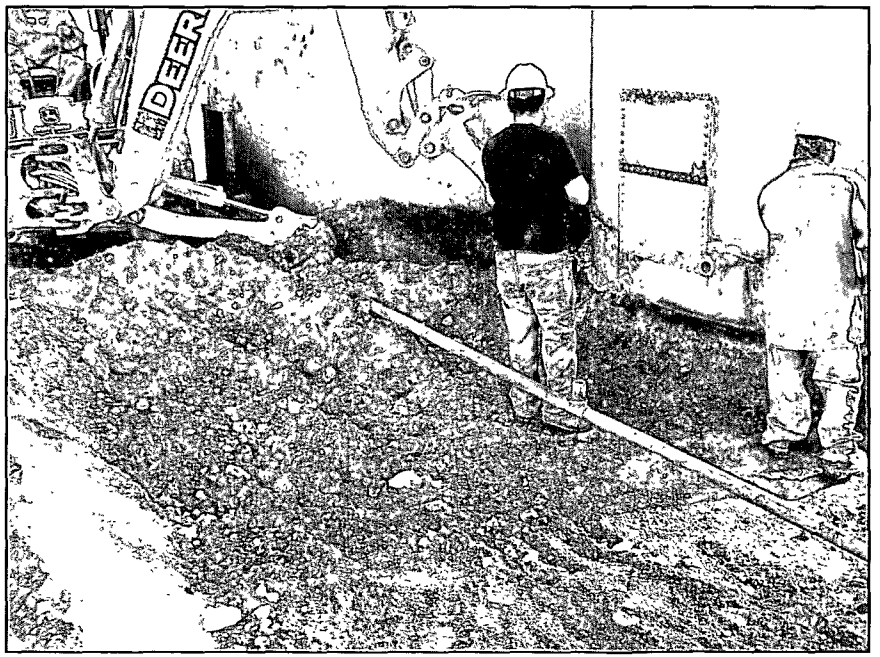
Excavation Site Photographs taken April 8, 2009



West side of battery looking north.



West side of battery.

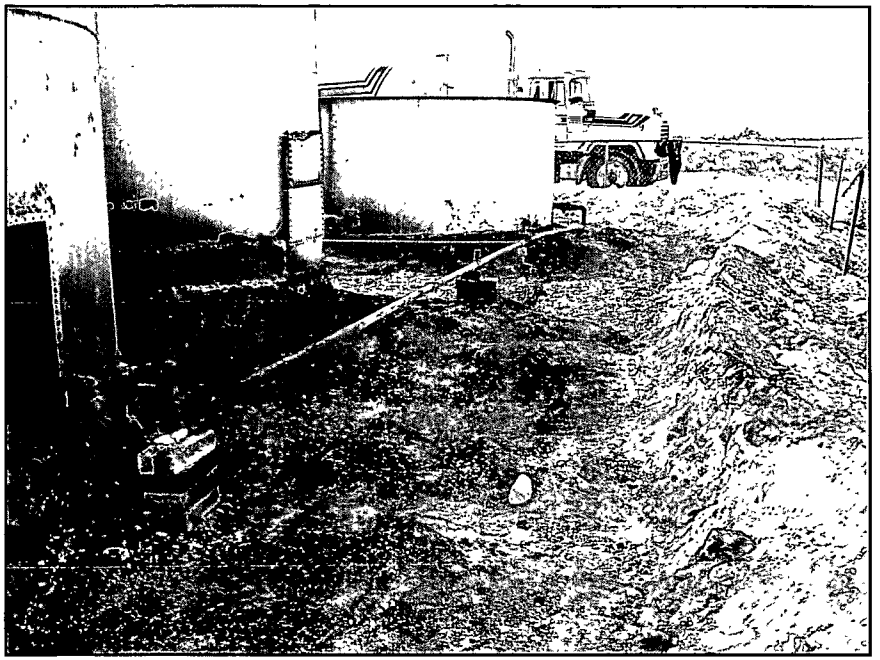


Back side of battery.

Looking west in between tanks.

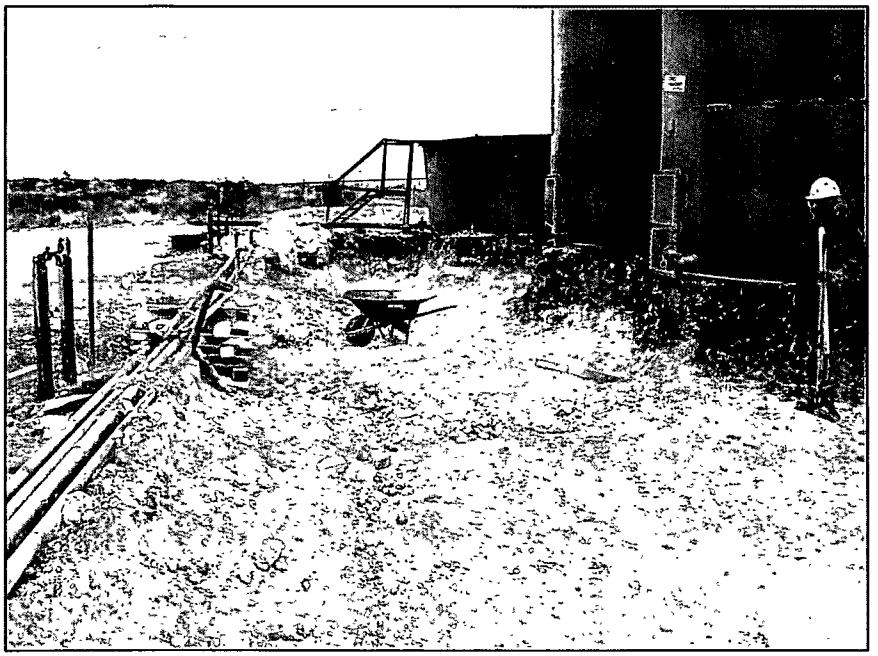
Southwest Royalties, Inc. – Wilderspin Federal Battery

Excavation Site Photographs taken April 8, 2009

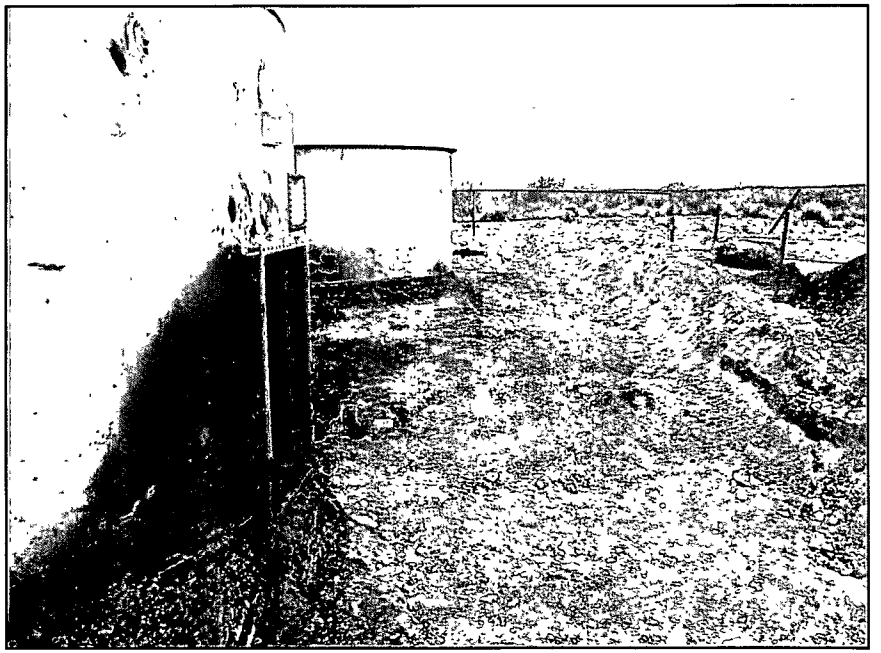


West side of battery.

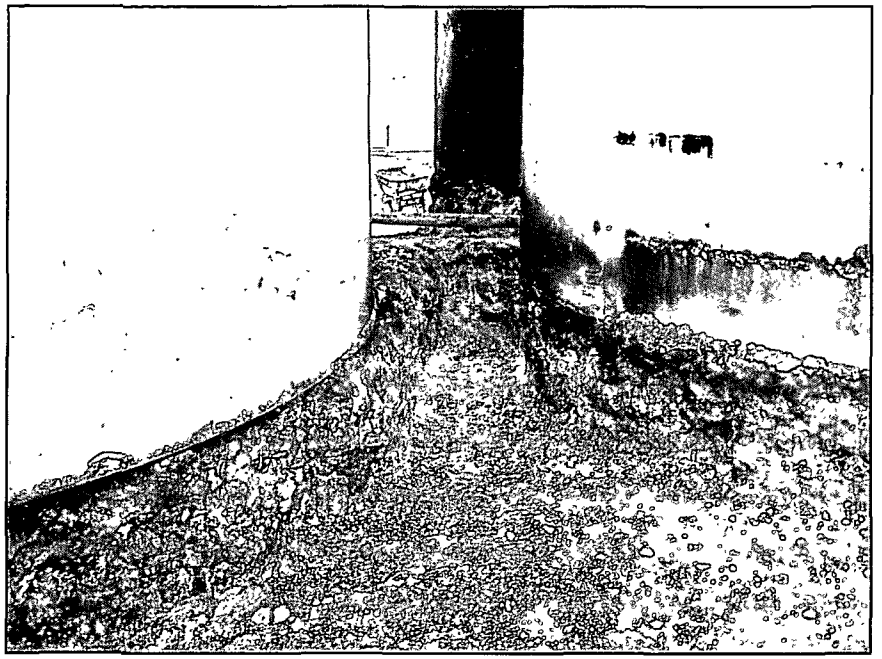
Looking south in between tanks.



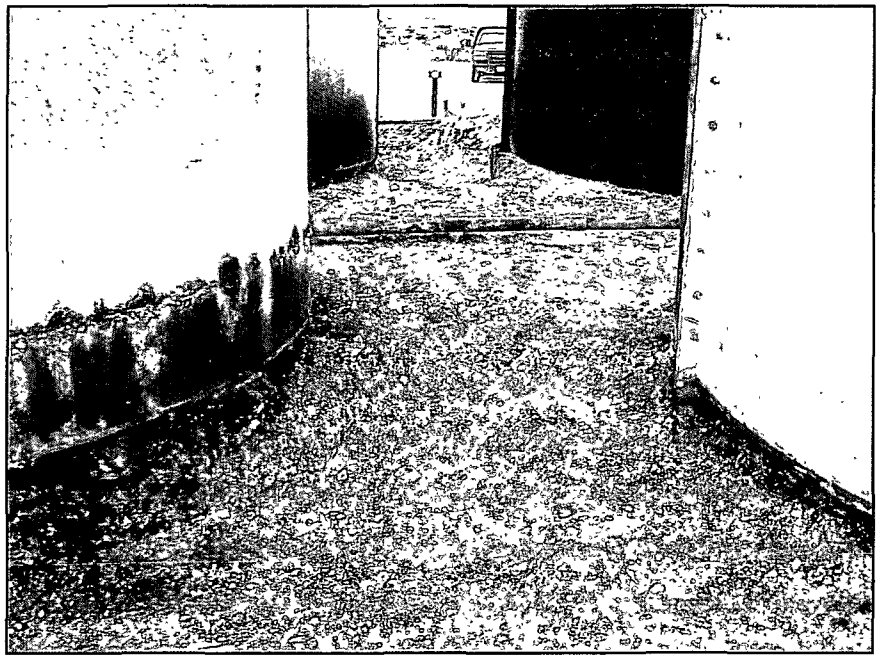
East side of battery looking south.



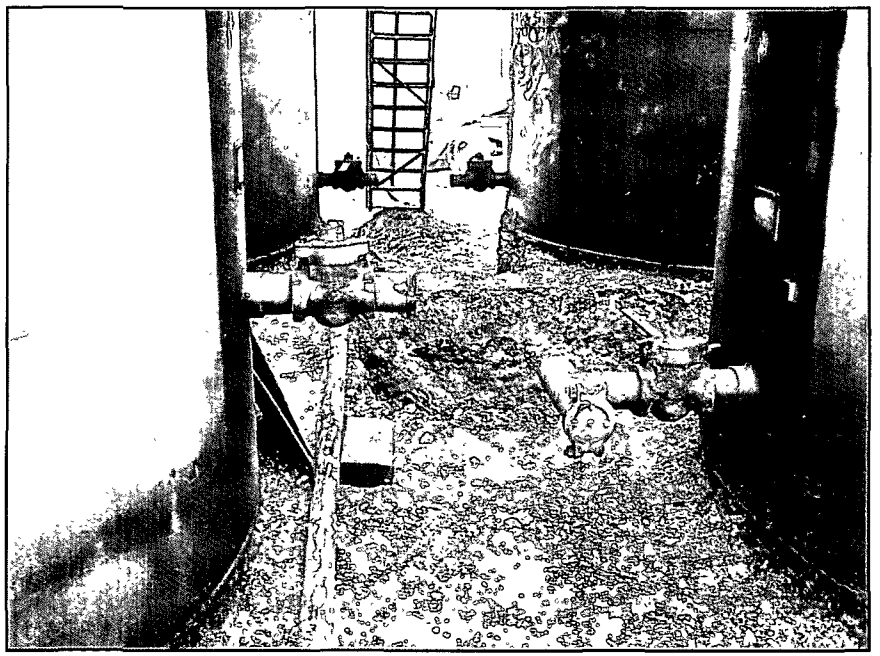
West side of battery.



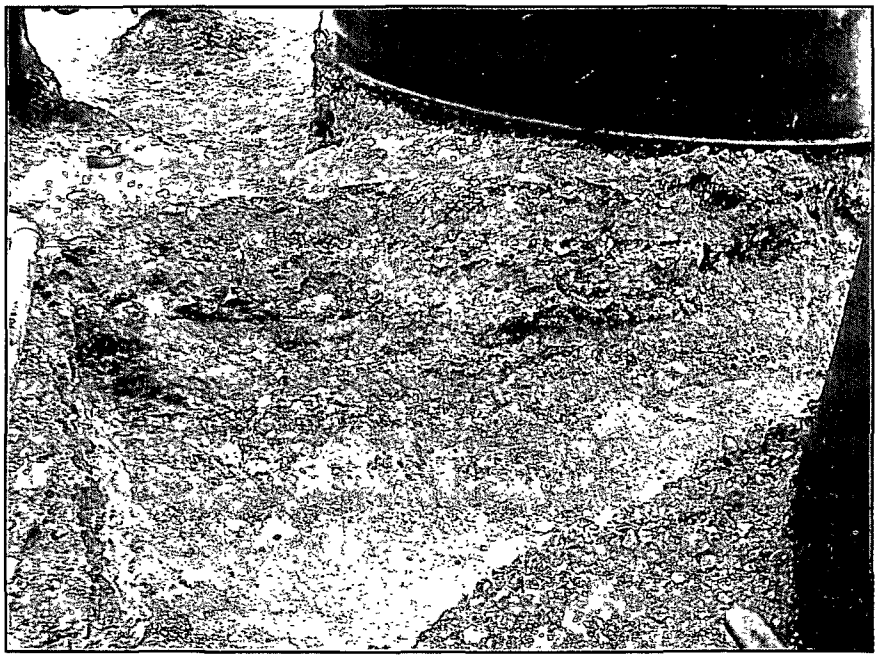
Looking east between tanks.



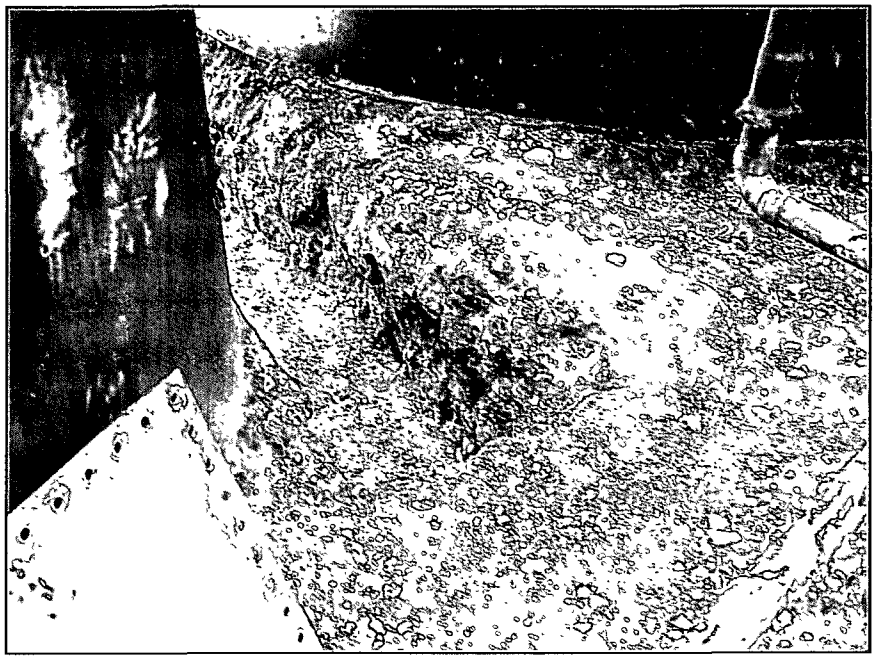
Looking east between tanks.



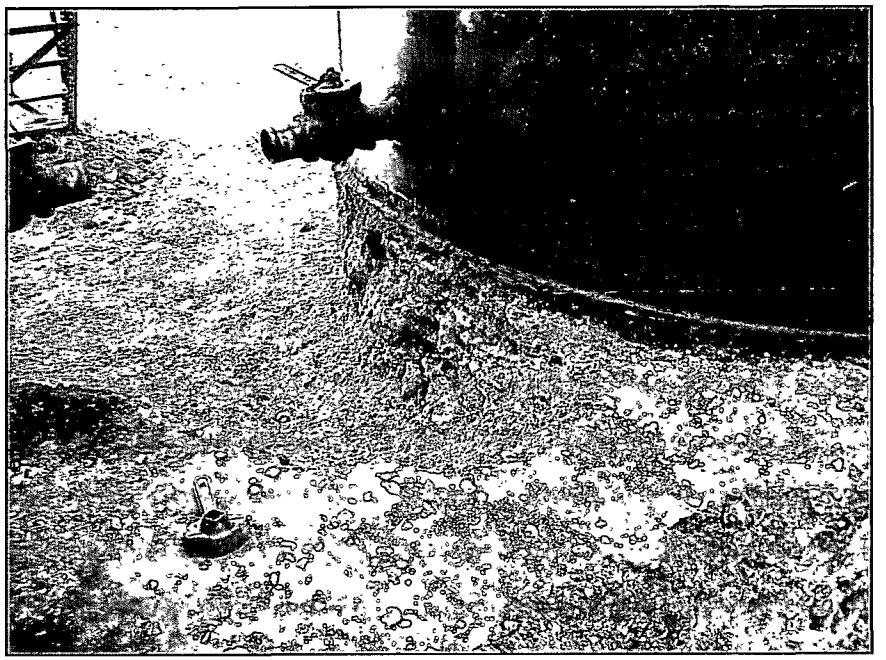
Looking north between tanks.



Looking north next to first tank.

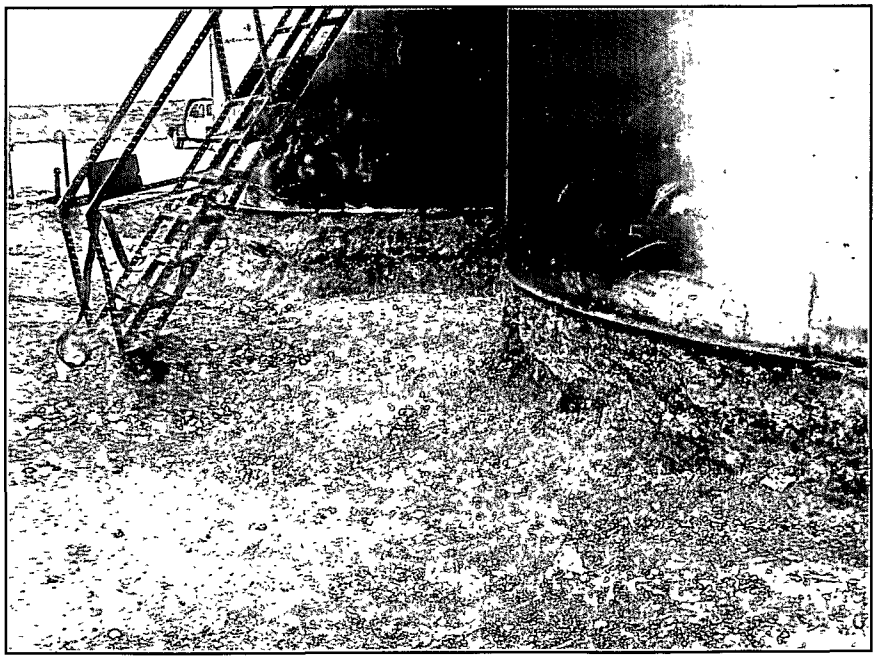


Wall of southwest steel tank.



Looking north between tanks.

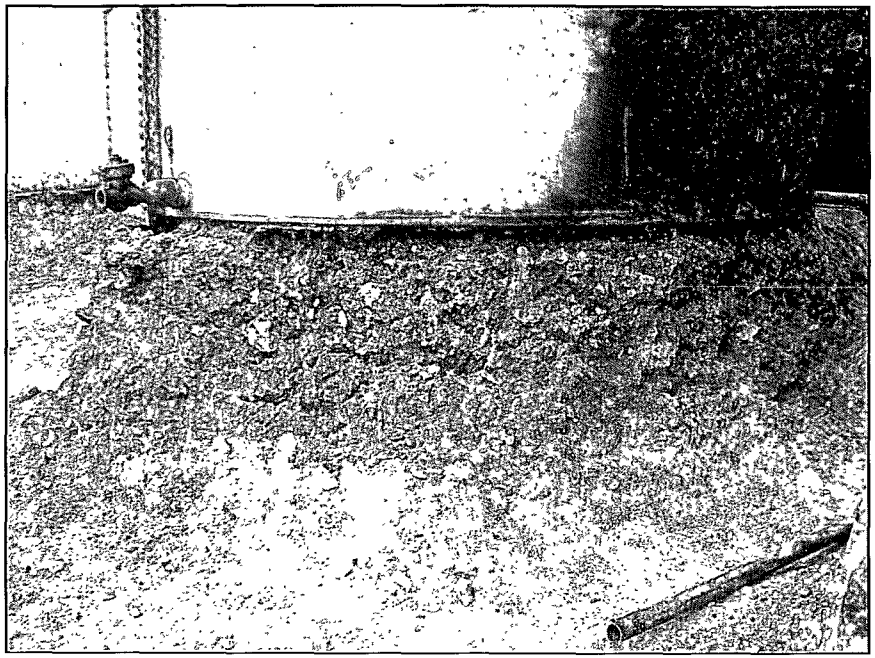
Looking south between tanks.



Bottoms of north tanks.

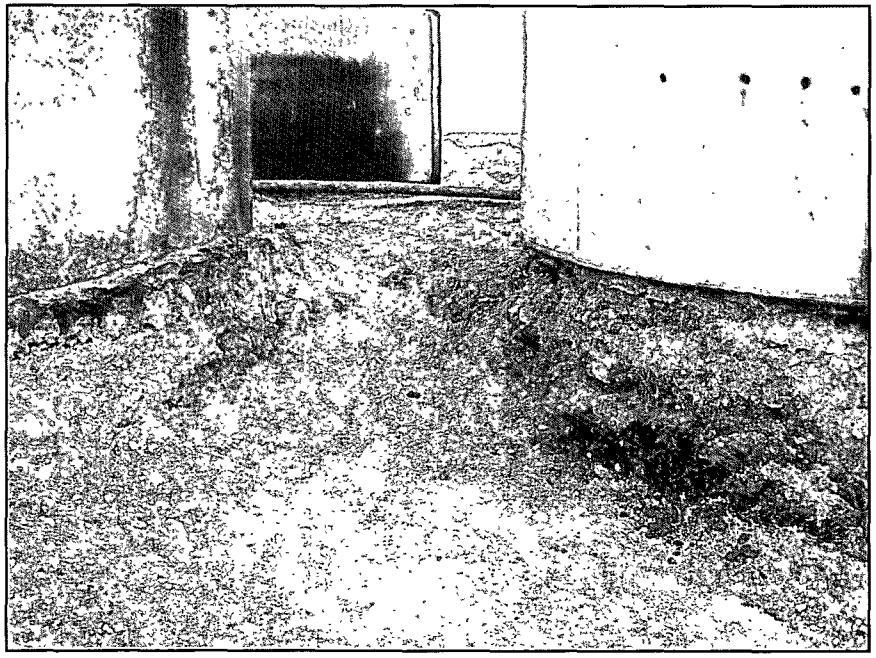
Southwest Royalties, Inc. – Wilderspin Federal Battery

Excavation Site Photographs taken April 8, 2009

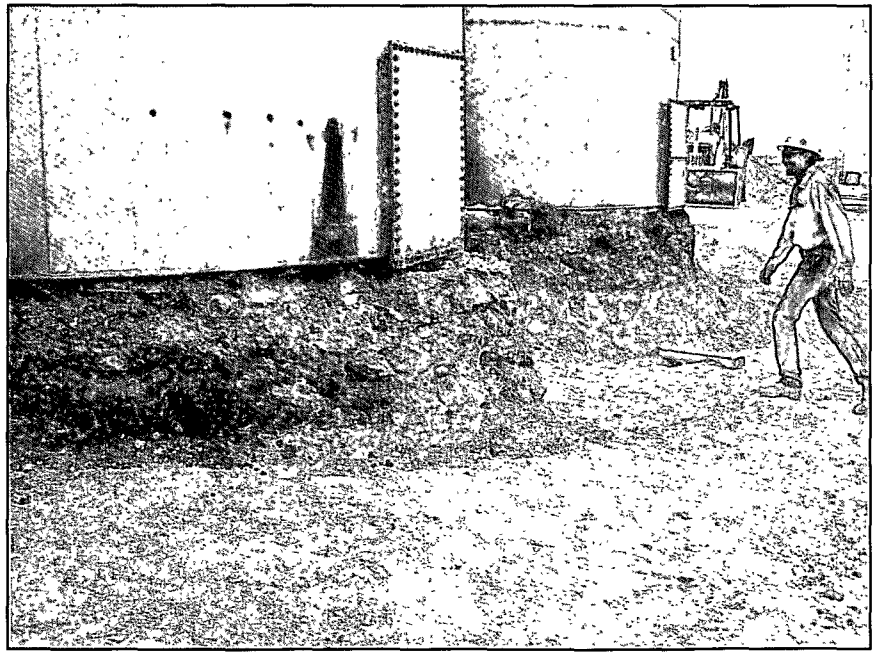


Bottom of southeast steal tank.

Looking south between tanks.



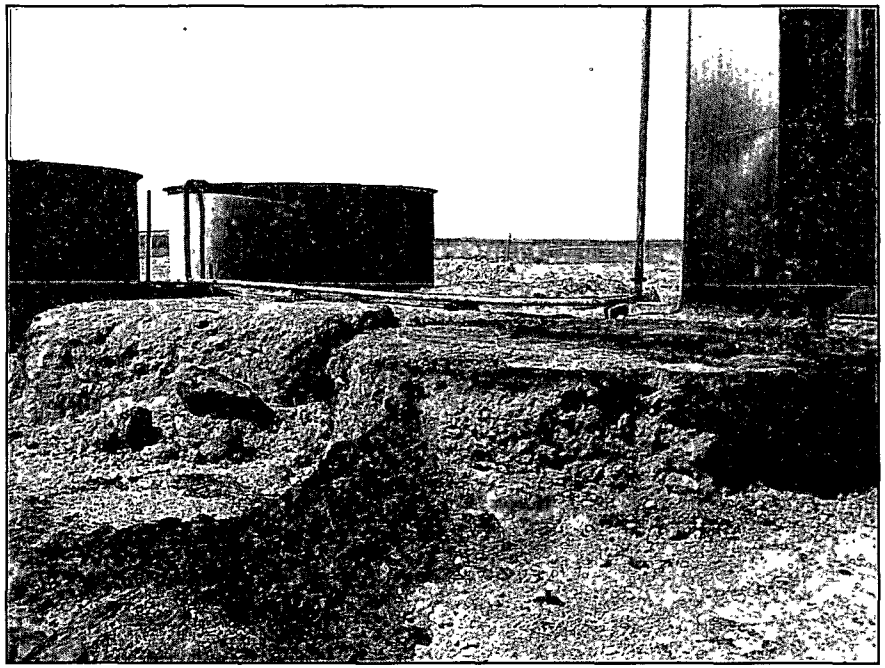
Bottoms of southeast tanks.

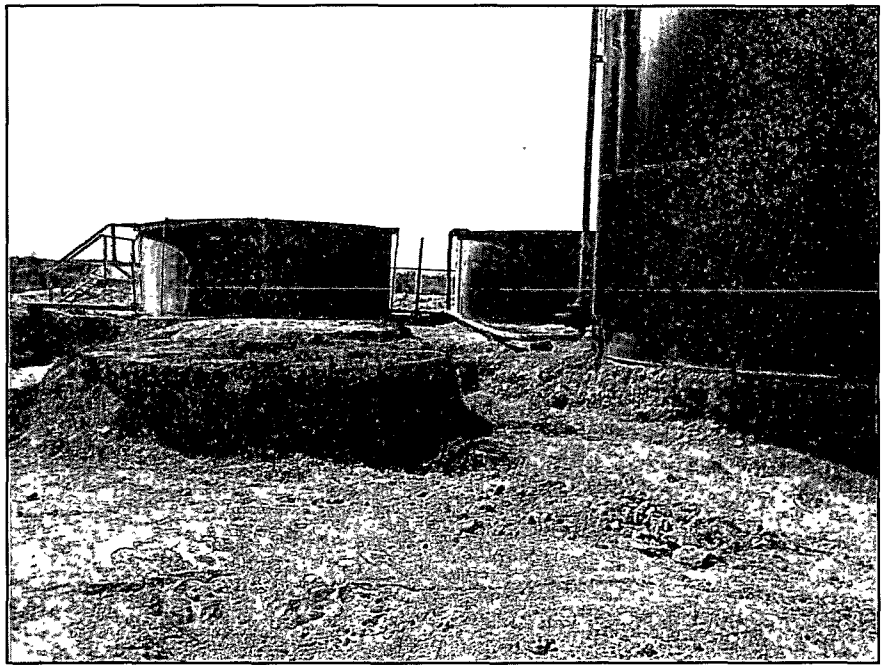


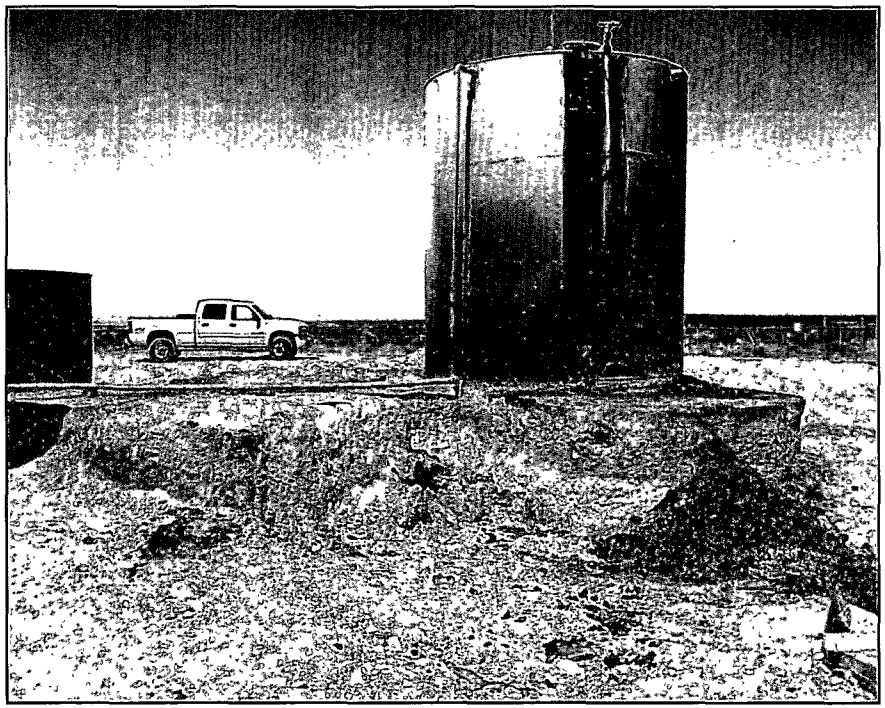
Bottoms of east tanks.

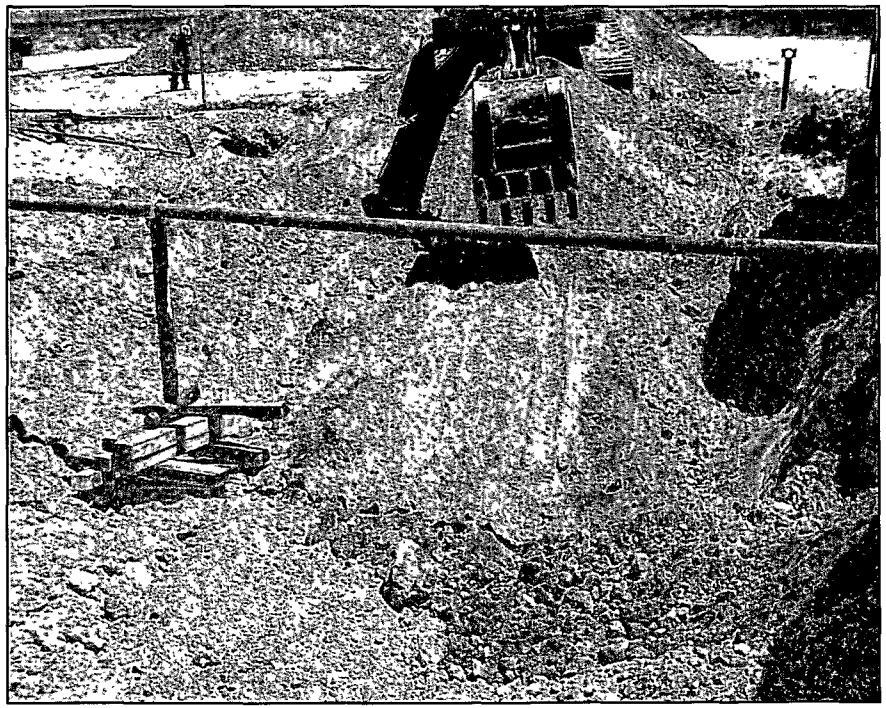
Southwest Royalties, Inc. – Wilderspin Federal Battery

Excavation Site Photographs taken April 27, 2009







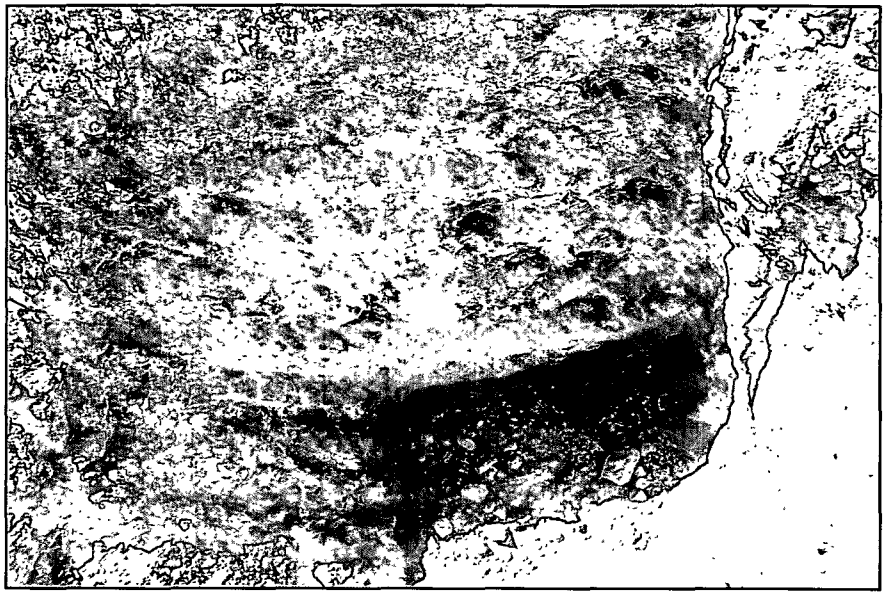


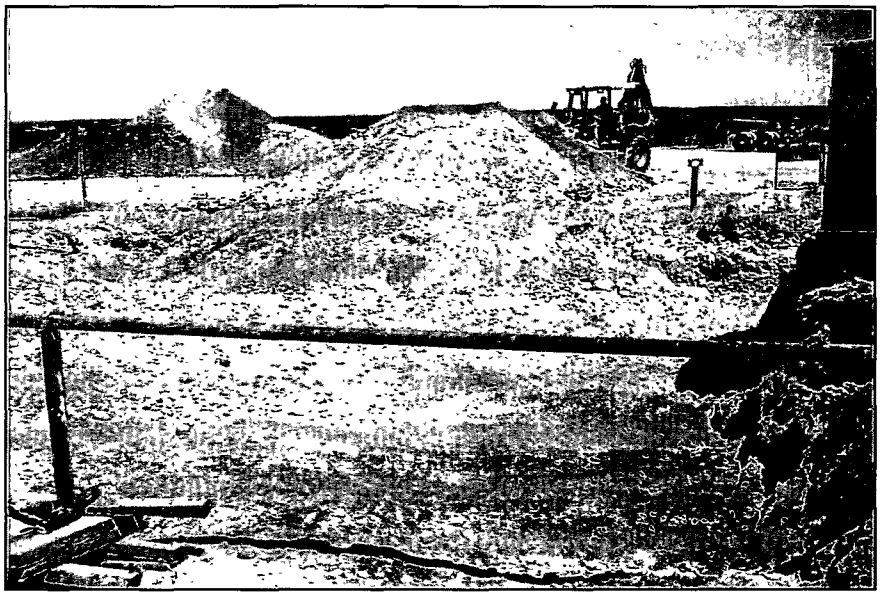
Back side of battery.

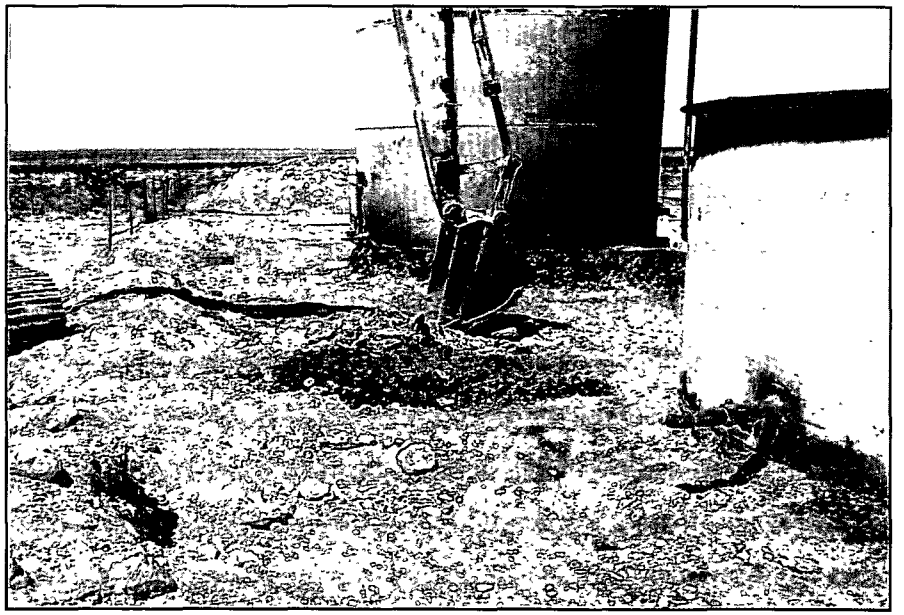
Looking west in between tanks.

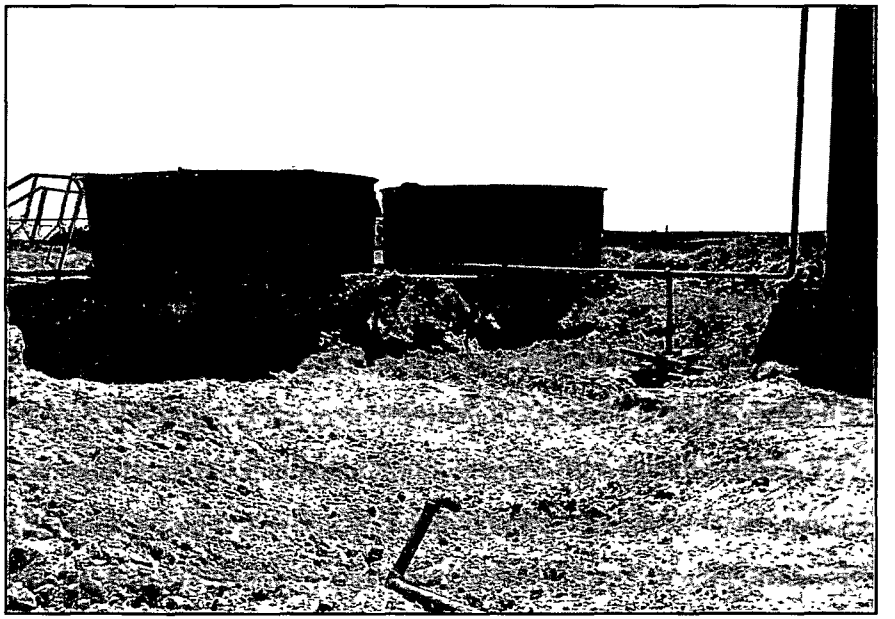
Southwest Royalties, Inc. – Wilderspin Federal Battery

Excavation Site Photographs taken April 27, 2009



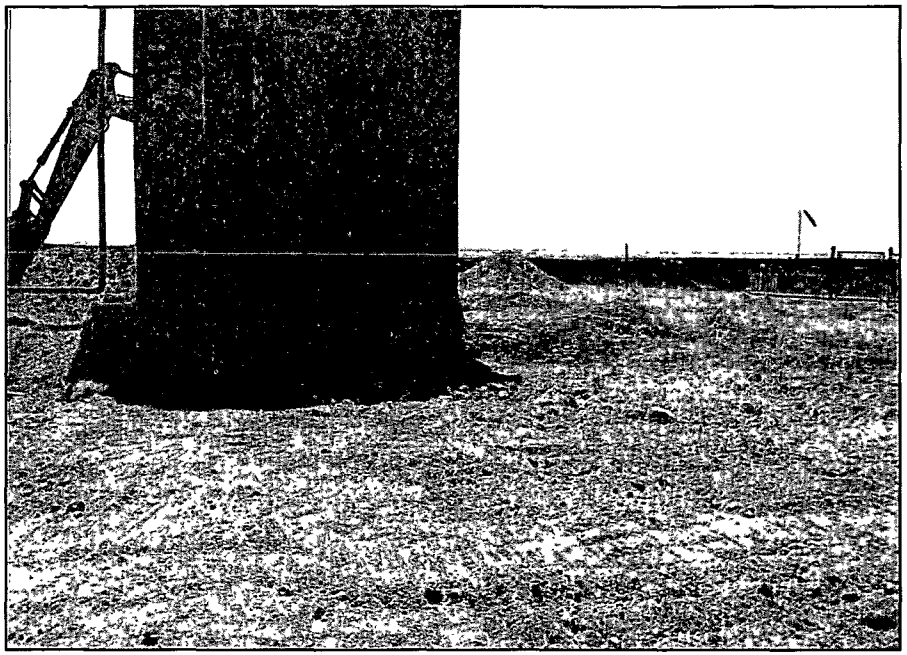


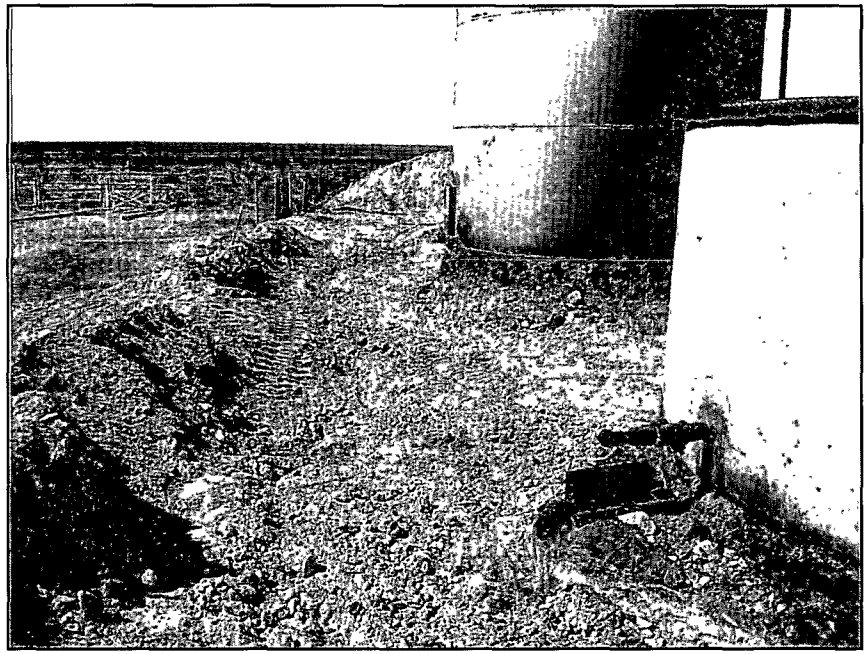


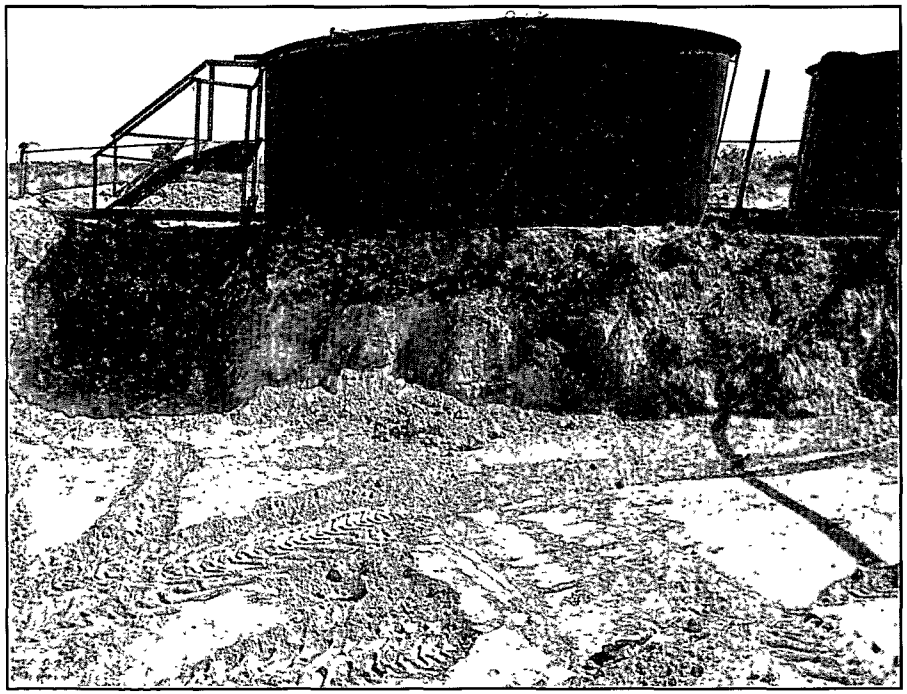


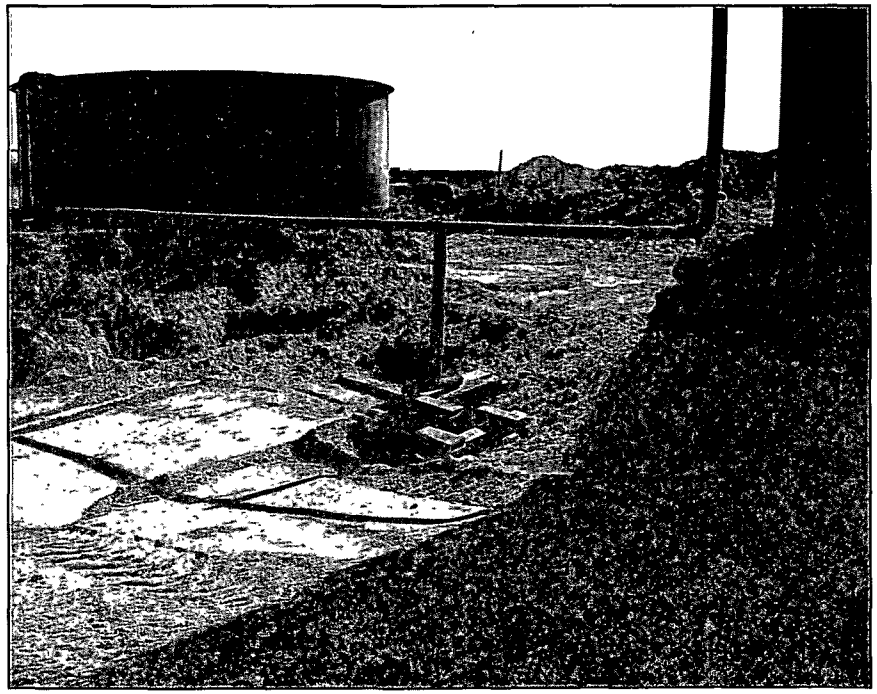
Southwest Royalties, Inc. – Wilderspin Federal Battery

Excavation Site Photographs taken April 27, 2009



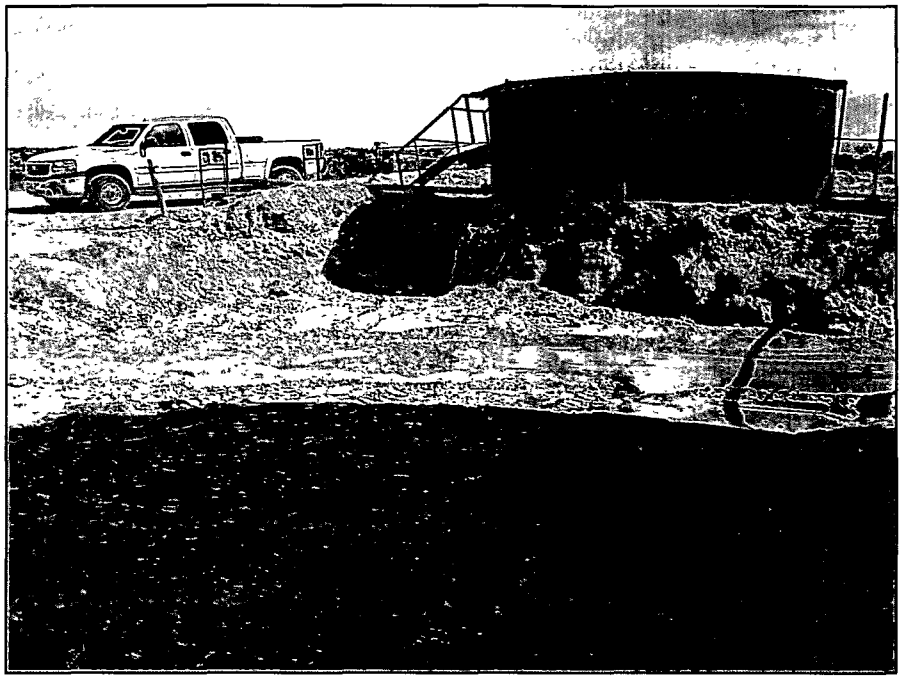


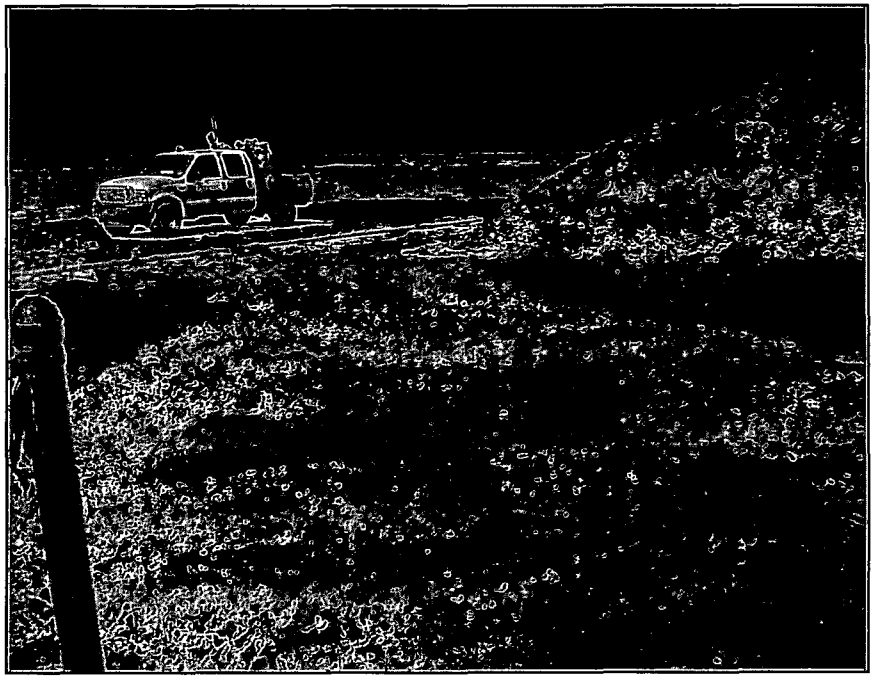


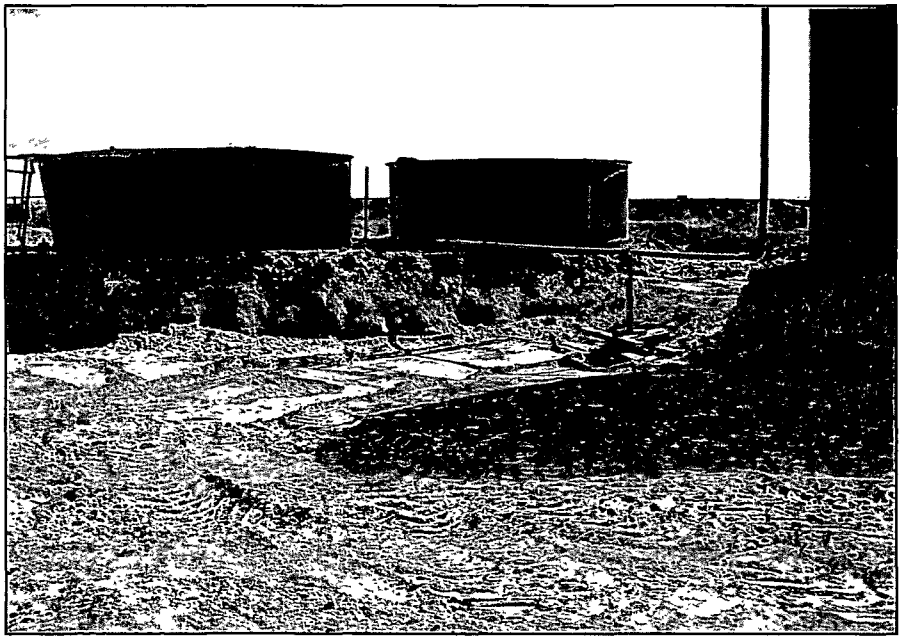


Southwest Royalties, Inc. – Wilderspin Federal Battery

Excavation Site Photographs taken April 27, 2009

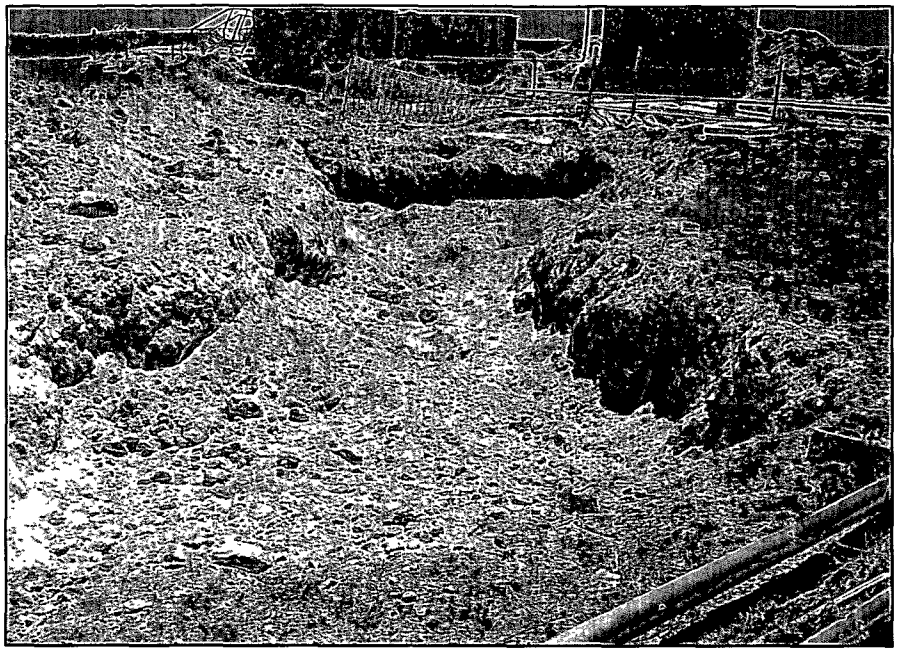


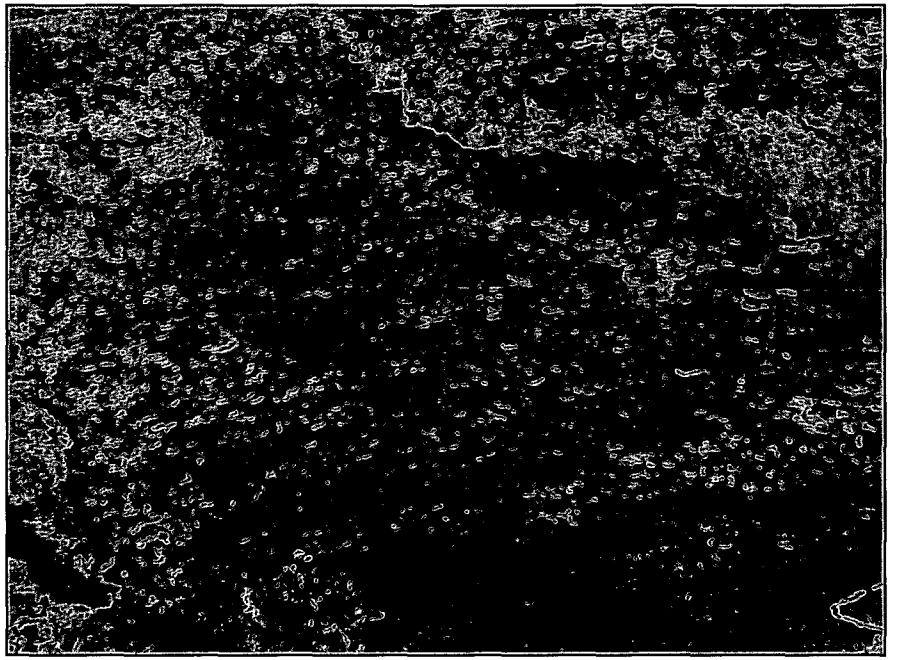


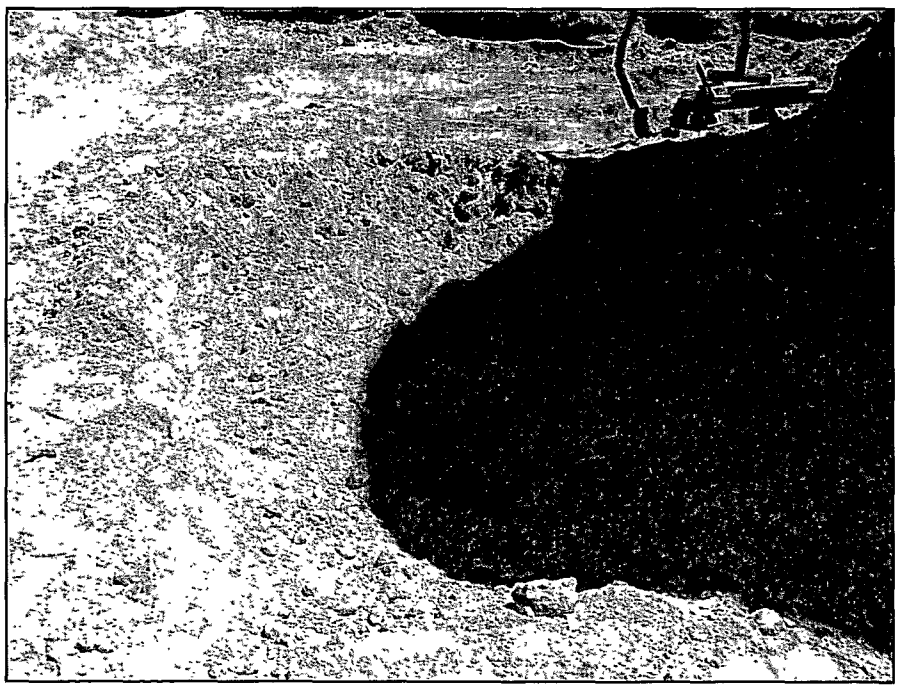


Southwest Royalties, Inc. – Wilderspin Federal Battery

Excavation Site Photographs taken May 8, 2009







Southwest Royalties, Inc. – Wilderspin Federal Battery

Excavation Site Photographs taken May 8, 2009