

**AP - 018**

**STAGE 1  
REPORT**

**12/20/2005**

601 W. ILLINOIS  
HOBBS, NEW MEXICO 88242

**EDDIE SEAY**  
**CONSULTING**  
ENVIRONMENTAL,  
GEOLOGICAL & REGULATORY  
SPECIALISTS

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December 20, 2005

NMOCD Environmental  
Attn: Mr. Ed Martin  
Box 6429  
1220 S. St. Francis Drive  
Santa Fe, NM 87504

RECEIVED  
**AP018**

DEC 22 2005

Oil Conservation Division  
Environmental Bureau  
**CASE 13061**

RE: Groundwater Investigation Report  
Smith and Marrs SLJU  
Jal, New Mexico

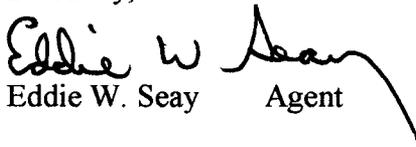
Dear Mr. Martin,

Enclosed please find a copy of the groundwater monitor well installation and sampling from the above listed site on the Osborn Ranch in Jal, New Mexico.

After you have had time to review the report and data, we can discuss any additional work or activities the State deems necessary.

We thank you for your time and patience in this matter.

Sincerely,

  
Eddie W. Seay Agent

601 W. Illinois Hobbs, NM 88242  
(505) 392-2236  
seay04@leaco.net

cc: Hobbs District Office  
Smith and Marrs  
Bill Olson  
Clay Osborn

RECEIVED

AP 018

DEC 22 2005

Oil Conservation Division  
Environmental Bureau

Smith and Marrs, Inc.  
South Langlie Jal Unit  
Jal, New Mexico

CASE 13061

**Groundwater Investigation**  
**Abatement**

Prepared by  
*Eddie Seay Consulting*  
December 2005

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- A. Survey Plat
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- A. Water
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- A. State Engineer Data
- B. Domestic Water Well List
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# **1.0 Introduction**

## **1.1 Background and Objectives**

This investigation was directed by the OCD because of potential groundwater problems and landowner concerns.

The South Langlie Jal Unit (SLJU) was purchased by Smith and Marrs in late 2004 through an auction of oil and gas properties. The environmental concerns were not known during the purchase. Smith and Marrs did not and have not caused any of the environmental problems associated with this investigation. Smith and Marrs purchased the properties from Chaparral Energy Inc. who purchased the SLJU from Bristol Resources. Other previous operators for this unit were Penrock, Reserve and Texaco.

The SLJU is located along the northern edge of Jal, New Mexico. The unit is within the property owned by Mr. and Mrs. Clay Osborn. Through the past few years the Osborn water wells have had elevated chloride levels. The quality of the water appears to be steadily decreasing, beyond the drinking water standards for human consumption.

This report is the findings of the groundwater within the SLJU.

## **1.2 Site Description**

The SLJU consists of parts of Sections 7,8,17 and 18 of Township 25 South, Range 37 East, Lea County, New Mexico. More precisely described as the E/2, SW/4, SE/4, and SW/4, NE/4 of Section 7, the SW/4 of Section 8, the W/2 of Section 17 and the E/2 of Section 18, all in Township 25 South, Range 37 East. (See Appendix 1)

## **1.3 Summary of Previous Investigations**

Starting on January 18, 1999, Cornerstone Environmental Resources, Inc. (CERI), on behalf of Bristol, conducted a Phase II Environmental Assessment of the property. Trenches were dug along the path of the January 10, 1999 saltwater release between the SLJU #9 and the SLJU #13 WIW to the top of the first hard barrier (caliche) where liquids were thought to not be able to pass. Soil samples were taken in an attempt to ascertain the depth of damage due to brine from pipeline leaks or other sources. Sampling and testing showed some high chloride levels, however CERI stated it also indicated the damage was either from earlier releases (prior to Bristol taking over operations of the unit), releases from off-site, or the presence of high chlorides could be naturally occurring. Talks were held with the NMOCD to determine the appropriate actions to be taken concerning these discoveries. The NMOCD directed Bristol to determine the source of the brine water and to perform vertical and horizontal delineation of the contamination by sampling the BTEX, TPH and Chlorides.

On June 15 and 16, 1999, CERI conducted a second Phase II Environmental Assessment of the property. Six soil borings using 7" hollow stem auger were made to depths of 20 to 25 feet to further delineate chloride concentrations at or near the site of the January 10, 1999 release just north of the SLJU Well #13 WIW. These borings were to ascertain the presence and concentrations of chlorides, BTEX and TPH, if any existed. BTEX above the detection limit of 20µkg was not found in any of the samples analyzed. TPH was found in several places above the detection range of 1 mg/kg. TPH in the diesel range was found only near the surface of Soil Sampling Well #3 and TPH in the gasoline range was found near the surface of Soil Sampling Well #6. Chlorides in the soil were found at varying and unconnected intervals from the surface to total depth. Concentrations ranged from 1 to 3,710 ppm. Ground water was reportedly not encountered in any soil sampling well.

On July 20 and 21, 2000, CERI conducted a third Phase II Environmental Assessment of the property. This time three sites were evaluated for the deeper presence of hydrocarbon and chloride contamination. Site 1 was an abandoned oil and gas leases tank battery. A sign at the facility identified the site as the Winters "E" Lease Tank Battery located near the center of the W/2 NE/4 of Section 18-T25S-R37E. Two oil storage tanks remained, but have since been removed by Bristol. Bristol left the battery fence, concrete blocks and some junk iron in place. Site 2 was another tank battery site without production vessels. No lease sign was present to properly identify the lease, but according to the topographic map the location is near the S/2 S/2 NE/4 of Section 18-T25S-R37E. This would be the Winters "C" tank battery site. Site number 3 was a former flare pit located west of an abandoned tank battery located near the W/2 SW/4 SE/4 of Section 18-T25S-R37E. This would be the abandoned tank battery that served the plugged Gutman #2-18. No production vessels remain at this site. Soil material was found on top of a plastic tarp just west of the pit, indicating contaminated soil had been removed by parties unknown and allowed to bio-remediate in place.

Samples at Site 1 were analyzed and found to have TPH GRO of 23.1 mg/kg and TPH DRO of 13,900 mg/kg. No BTEX was detected. The positive test came from heavy, dried hydrocarbon contaminated soils that had been picked up and piled in the northeast corner of the tank battery pad. This soil reportedly can be dug up and hauled to a proper disposal facility in that it is not mobile hydrocarbon and does not appear to extend below ground level more than a few inches. Similar hydrocarbon deposits were found at Site 2 and again no BTEX was detected. Testing in 1999 (using EPA Method 8015 Modified) had detected TPH GRO of 1.55 mg/kg and TPH DRO of 4,160 mg/kg from this soil at the surface. Additional testing in June 2000, using EPA Method 418.1, detected TPH in the 8,000 to 8,800 mg/kg range at the surface. A surface sample at Site 3 showed TPH DRO of 24,300 mg/kg, but no BTEX or TPH GRO. Tests were also conducted on the soil that had been placed on the plastic tarp. BTEX, TPH DRO and TPH GRO were not detected. However, TPH using EPA Method 418.1 did detect TPH of 8,700 mg/kg from this source. CERI recommended the top six inches of soil at each site be removed for off-site disposal and the pit backfilled with clean soil. Bristol and CERI felt that was all that would be necessary to bring these sites into full compliance with NMOCD regulations.

According to Safety & Environmental Solutions, Inc.'s, (SESI) report of January 27, 2000, a Phase II Environmental Site Assessment on behalf of Osborn was conducted. SESI reportedly made eight test borings around the Winters "E" Lease Tank Battery (SESI and CERI Site #1); four test borings at the Winters "C" Lease Tank Battery located at SE/4 SW/4 NE/4 of Section 18-T25S-R37E (SESI and CERI Site #2); and, three test borings near the Gutman Lease Tank Battery (SESI and CERI Site #3) in an attempt to determine the vertical extent of BTEX, TPH and Chloride contamination. Chlorides in soil were stated to be in excess of 250 ppm to a depth of 45 feet from surface at all locations. The next set of test borings was reportedly made north of the SLJU #13 WIW. Here SESI put in 6 boreholes to a depth of 25 feet. Results were similar to those found earlier. Several other sites were mentioned as being visually identified but not yet tested. The exact location of these sites has not been made clear to Chaparral. A final site, which appears to be just south of Osborn's home, was identified by SESI as a place to install three test borings. The surface owner and SESI personnel have told Chaparral that SESI sampled and tested the known water wells in the immediate vicinity of Osborn's home for the presence and concentration of chlorides. Reportedly, chloride concentrations ranged from 121 mg/l to 857 mg/l, but data was not provided on a specific well to well basis. Also, a sample of the water used by the City of Jal for watering the country club was analyzed by SESI and found to have a chloride concentration of 610 mg/l. Again, exactly which well was tested was not reported. SESI provided several years worth of laboratory analysis conducted on wells operated by the City of Jal, New Mexico. These wells are listed by number or name, but their exact location is not given.

## **2.0 Site Investigation Activities**

### **2.1 OCD Sites**

Pursuant to the OCD and the agreement between previous oil and gas operator Chaparral Energy, Inc. Smith and Marrs is to install various monitor wells and sampling sites within the SLJU lease. The placement of the monitor wells are listed:

Monitor Well #1	Near Injection facility and pit
Monitor Well #2	Source of pipeline leaks between Wells #9 and #13
Monitor Well #3	Winters "E" Tank Battery
Monitor Well #4	Winters "C" Tank Battery
Monitor Well #5	Gutman Lease Flare Pit

The OCD proposed another site near temporary Well #3. This site is near Monitor Well #2, and was discussed with Mr. Olson and Mr. Martin and will not be drilled at this time.

## **2.2 Chaparral Energy, Inc. Sites**

Three additional wells were proposed by Chaparral Energy, Inc. as monitor wells and are listed as:

Monitor Well #6 NW and SE gully Section 18  
Monitor Well #7

The placement for Monitor Well #7 was also discussed with Mr. Olson and Mr. Martin, this location was moved just west and north of SLJU #2 Injection well. This will be up gradient to Smith and Marris' operations. Also, Mr. Osborn has two wells which were numbered as abandoned Well #8 and Monitor Well #9 Pond Well. (See Appendix 2)

It was agreed that if additional monitor wells were necessary they could be installed at a later date.

## **2.3 Monitor Well Installation**

The drilling of the Monitor Wells began on August 1, 2005 and continued through August 10, 2005, until all wells were drilled. Taylor Drilling was used to drill all the wells with the air rotary split spoon method. All wells were completed as monitor wells as OCD guidelines and protocol directed, except MW #1. Monitor Well #1 was a dry hole, drilled into redbed at approximately fifty (50) feet, no water was present. The well was left open overnight and observed. The open well was inspected on August 2, 2005, and again, no water was observed. Discussions with OCD, Mr. Olson and Mr. Martin were conducted and MW #1 was plugged and abandoned per their advice.

Monitor wells 2 thru 7 were completed according to schedule as outlined. Soil samples were taken every ten (10) feet and analyzed for BTEX (PID), TPH and Chloride. The samples were bagged and tested on location with a PID, placed in glass containers, stored on ice, and hand delivered to Cardinal Laboratories. All auger equipment was decontaminated between samples using soap and clean rinse water. (See Appendix 4 for well logs and soil analytical results)

All wells were completed with 2 in. schedule 40 PVC with 20 feet of 0.20 screen, and concrete pad with locking well cover. All drilling soil was left on site for future disposal. (See Appendix 4, Well Bore Completion)

## **2.4 Groundwater Investigation of Sampling**

After the 6 wells were completed and secured, measurements were taken of groundwater and casing. John West Engineering surveyed the wells and provided a plat. (Appendix 3) The monitor well data and measurements are included in Appendix 4, Field Measurements and Observation Logs.

The survey data and measurements were used to create a potentiometric groundwater map. (Appendix 3) This map shows that groundwater gradient flow direction is to the southeast.

Groundwater samples were collected from the 6 wells by first developing the well using a portable pump and generator, each well was purged and developed for sampling. During sampling a dedicated disposal bailer was used to collect samples. Three casing volumes were extracted before sampling, the samples were placed into laboratory supplied sample containers appropriate for the analysis conducted. Samples were maintained on ice and hand delivered to Cardinal Laboratories. The samples were analyzed for BTEX, Cations, Anions, TDS, and Metals. (See Appendix 4, Analytical and Appendix 5)

All water pumped from the monitor wells was disposed at Cooper Disposal Facility. (See Appendix 7, Waste Manifest)

## **2.5 Inventory of Water Wells and Analytical**

As part of the investigation requirements, a listing of all water wells within 1 mile of the SLJU was conducted. A review of the State Engineers list of known water wells is included in Appendix 6, State Engineer Data. The list includes wells that have been drilled over the past several years, but does not give exact location or, if wells are in operation or plugged. Many of the wells were found, but were not in operation. We sampled the wells that were available and operational. (See Appendix 8, Photos, Appendix 6, Analysis, and Appendix 6, Location Map) Along with this information is a report and sample results from the New Mexico Environmental Department, which sampled the Osborn wells per the landowners request in 2001. (Appendix 6, Additional Research )

## **2.6 Water Analysis**

In comparing the results of the different water test results, the Monitor Wells that were recently drilled for this project have very similar results to the water wells within the area of review. The test results from the monitor wells did not compare with the results of the Osborn well test results. (Appendix 5, Analysis)

## **3.0 Conclusions and Recommendations**

### **3.1 Conclusions**

From the drilling of the various monitor wells and testing of the soil while drilling, none of the contamination in the soil reached the groundwater. Of the seven wells drilled and sampled the only problems found were slightly elevated Chloride levels above the drinking water standards in three monitor wells. The three monitor wells are MW #3, MW #4, and MW #7. MW #7 is west and up gradient to the SLJU.

The OCD, Mr. Wayne Price was notified of the elevated Chloride levels. Copies of all the water analysis was given to Mr. Paul Sheeley of the Hobbs District office for review.

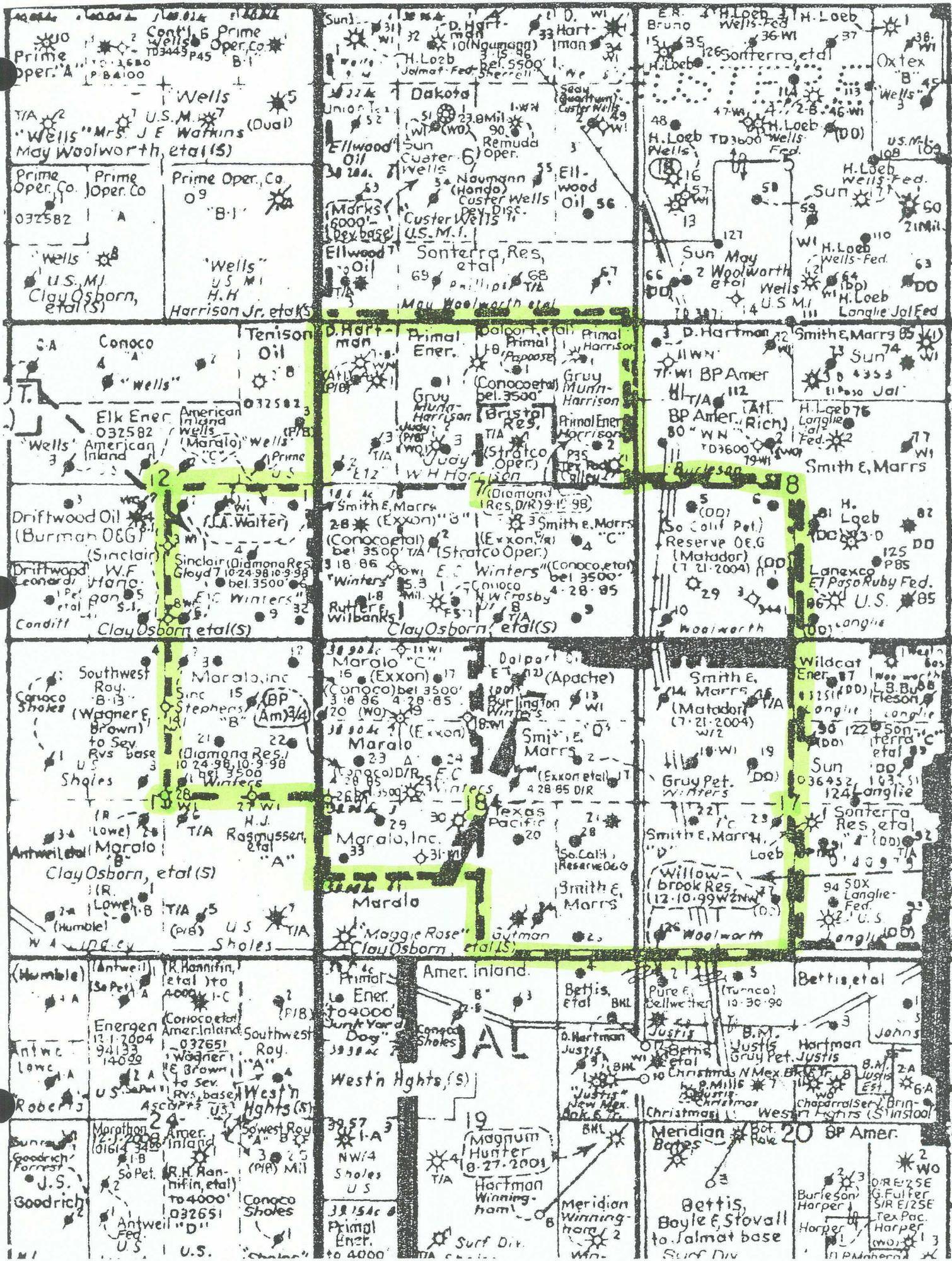
### **3.2 Recommendations**

Smith and Marrs will not at this time make any recommendations until the OCD has reviewed the data. Smith and Marrs' agreement with OCD and Chaparral Energy, Inc. was only to drill and sample the monitor wells, as directed by OCD.

As Smith and Marrs' consultant we know additional work may be necessary, and we are willing to discuss this at a later time.

# **APPENDIX 1**

## **A. SITE MAP**



Cont'l Prime Wells Oper. Co  
Prime Oper. A  
Wells  
U.S.M. (Dual)  
Mrs. J.F. Watkins  
May Woolworth, et al (S)

Prime Oper. Co  
Prime Oper. Co  
Wells  
U.S.M.  
Clay Osborn, et al (S)

D. Hartman  
H. Loeb  
Dakota  
Ellwood Oil  
Sun Custer  
Wells  
U.S.M.  
Ellwood Oil

Wells  
U.S.M.  
H.H.  
Harrison Jr. et al (S)

H. Loeb  
Wells-Fed  
H. Loeb  
Wells  
U.S.M.  
Wells-Fed

Wells-Fed  
H. Loeb  
Wells-Fed  
U.S.M.  
Langlie-Jal Fed

Conoco  
Wells  
Elk Ener  
American Inland  
Wells  
American Inland

Primal Ener.  
Gruy  
Harrison  
Wells  
W.H. Harrison

Smith E. Marrs  
Wells  
Langlie  
Fed.  
Smith E. Marrs

Driftwood Oil  
Burman O&G  
Sinclair  
W.F. Leonard  
Wants  
Condit  
Clay Osborn et al (S)

Smith E. Marrs  
Wells  
Winters  
W.C. Rutter  
Wilbanks  
Clay Osborn, et al (S)

Wells  
Langlie  
Fed.  
Smith E. Marrs

Southwest Roy.  
Conoco Shales  
Wagner E. Brown  
Rvs base  
Shales  
Maralo, Inc  
Sinc Stephens  
Winters  
H.J. Rasmussen, et al  
Clay Osborn, et al (S)

Maralo, Inc  
Wells  
Winters  
Texas Pacific  
Maralo, Inc  
Maggie Rose  
Clay Osborn, et al (S)

Smith E. Marrs  
Wells  
Gruy Pet.  
Winters  
Smith E. Marrs

Antweil  
Clay Osborn, et al (S)

Maralo  
Wells  
Clay Osborn, et al (S)

Wells  
Langlie  
Fed.  
U.S.

Antweil  
Energex  
Wagner E. Brown  
Rvs base  
West'n Hghts (S)

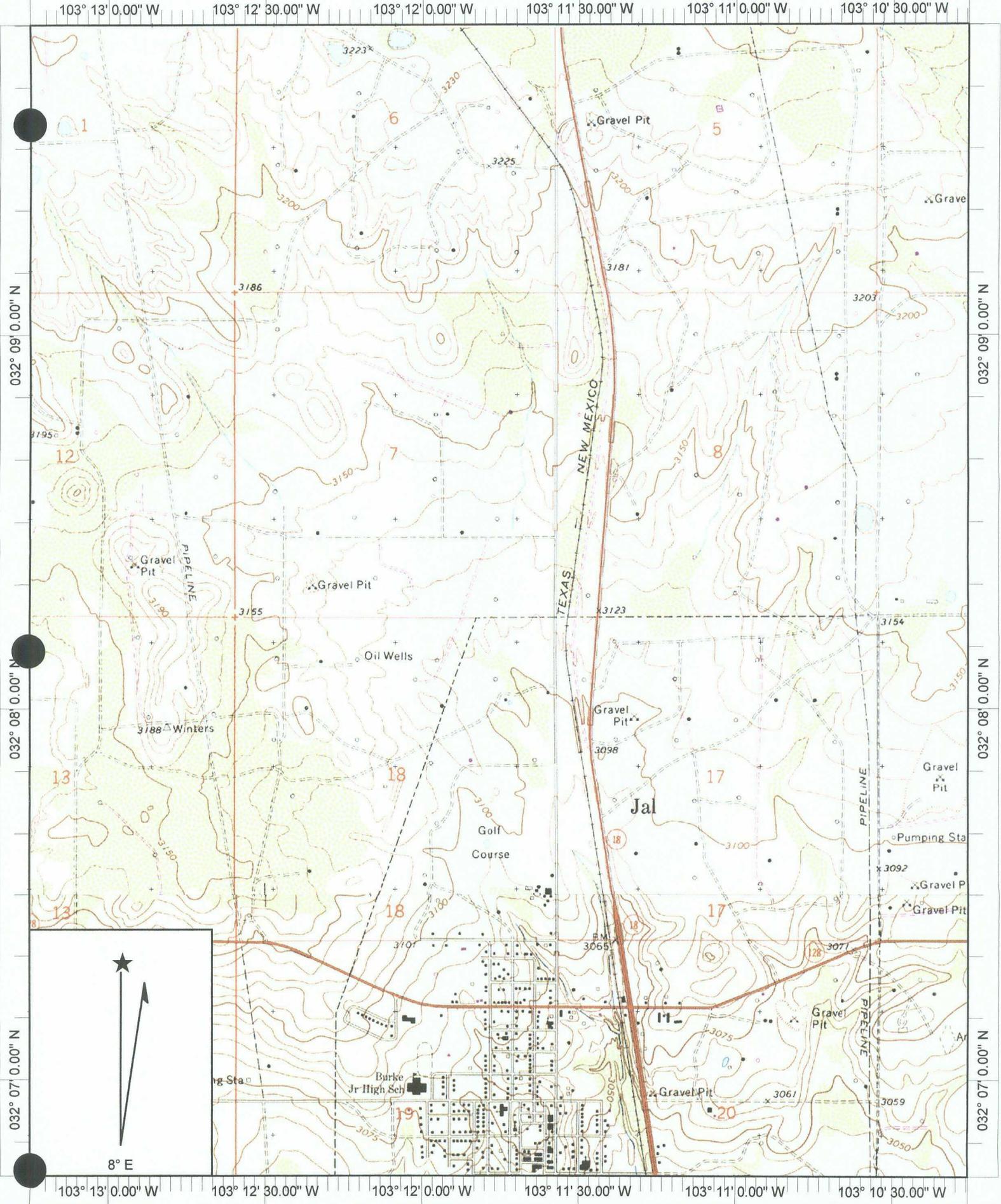
West'n Hghts (S)

Bettis, et al  
Wells  
West'n Hghts (S)

Marathon  
Antweil  
U.S.

Magnum Hunter  
Hartman  
Winning-ham  
Surf Div.

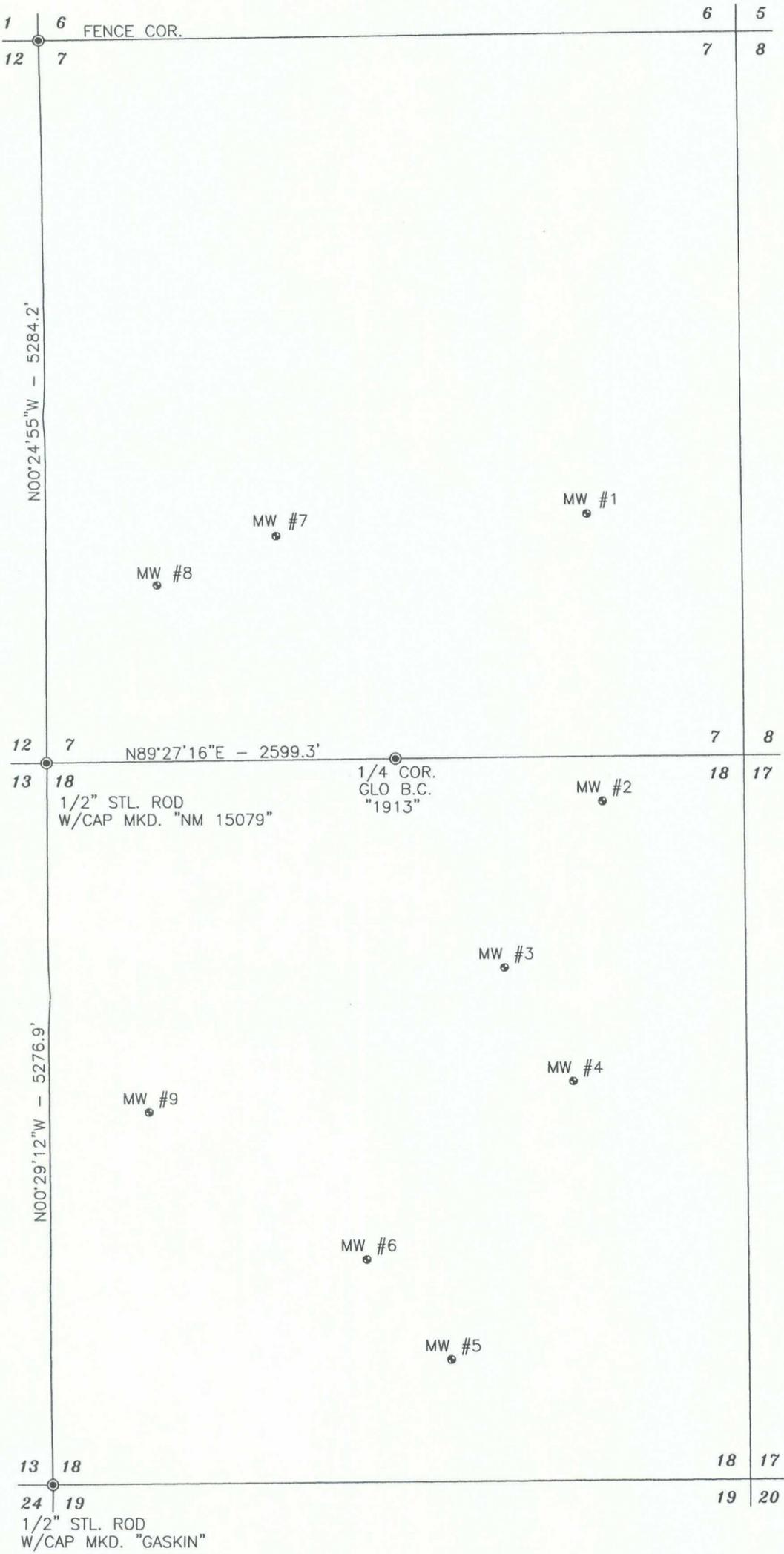
Meridian  
Bettis, Boyle E. Stovall  
Surf Div.



Name: JAL NW  
 Date: 12/17/2005  
 Scale: 1 inch equals 2000 feet

Location: 032° 08' 17.31" N 103° 11' 45.41" W  
 Caption: South Langlie Jal Unit  
 Sections 7, 8, 17, 18 T25S,R37E  
 Lea County, New Mexico

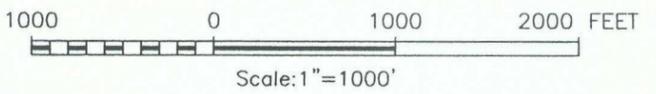
SECTIONS 7 & 18, TOWNSHIP 25 SOUTH, RANGE 37 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.



NOTE: BEARINGS SHOWN HEREON ARE MERCATORS SHOWN AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I HEREBY CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

GARY G. EIDSON  
NEW MEXICO  
REGISTERED PROFESSIONAL SURVEYOR  
No. 12641  
9/12/05  
PROVIDING SURVEYING SERVICES SINCE 1946  
JOHN WEST SURVEYING COMPANY  
412 N. DAL PASO  
HOBBS, N.M. 88240  
(505) 393-3117

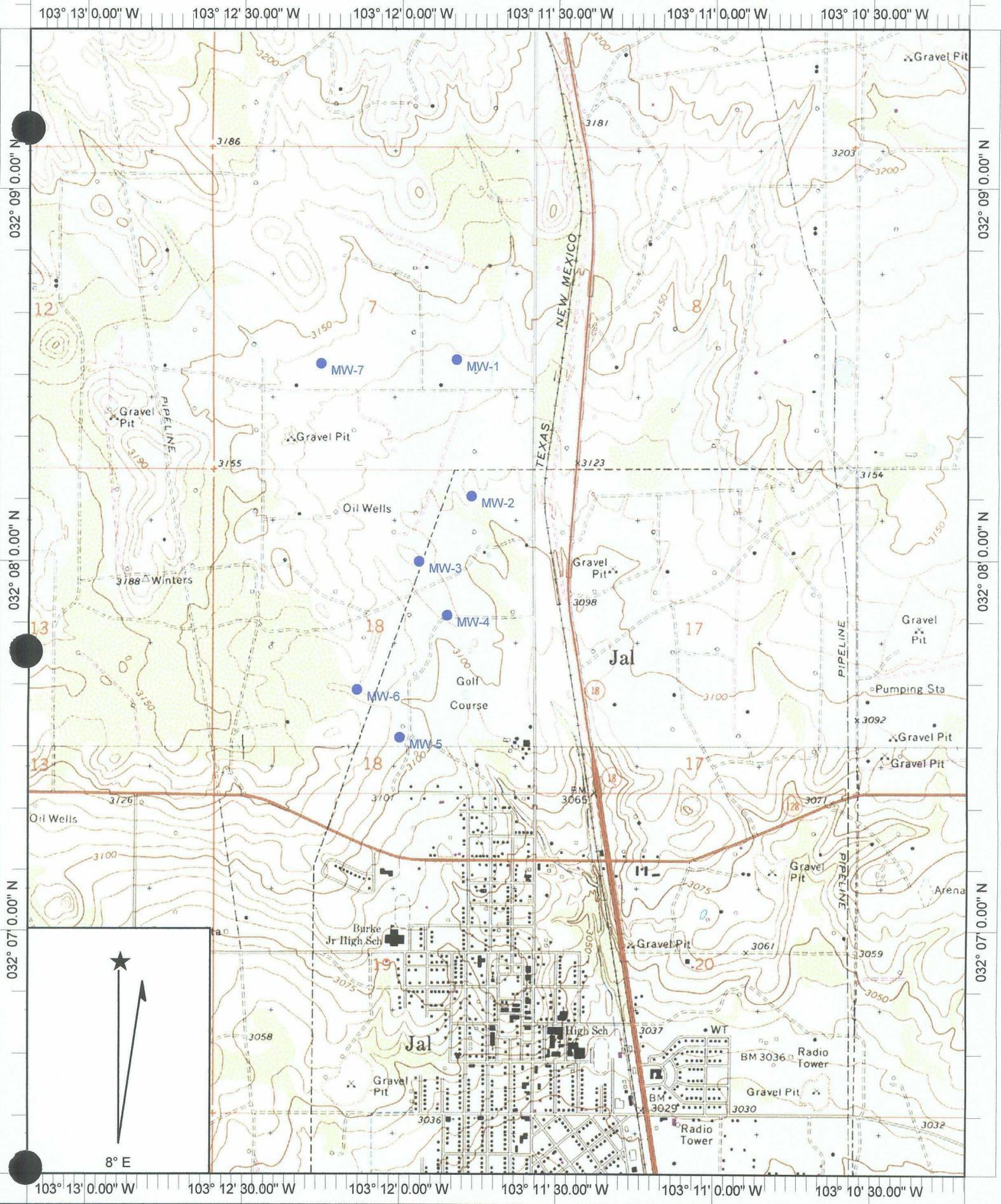


DESCRIPTION	NAD 83 COORDINATES	ELEVATIONS	FOOTAGES FROM SEC. LN.
MW #1	Y = 417416.3 N X = 892984.7 E	TOP OF CONC. = 3129.5'	1775' FSL 1183' FEL
MW #2	Y = 415316.9 N X = 893098.6 E	TOP OF CONC. = 3110.8'	326' FNL 1095' FEL
MW #3	Y = 414102.4 N X = 892363.4 E	TOP OF CONC. = 3121.6'	1533' FNL 1845' FEL
MW #4	Y = 413271.9 N X = 892878.4 E	TOP OF CONC. = 3113.4'	2368' FNL 1340' FEL
MW #5	Y = 411243.4 N X = 891969.2 E	TOP OF CONC. = 3107.8'	889' FSL 2373' FEL
MW #6	Y = 411972.2 N X = 891341.5 E	TOP OF CONC. = 3108.7'	1624' FSL 2892' FWL
MW #7	Y = 417255.2 N X = 890662.6 E	TOP OF CONC. = 3138.0'	1636' FSL 1719' FWL
MW #8	Y = 416894.7 N X = 889773.8 E	TOP OF PIPE METAL RIM = 3140.7'	1284' FSL 827' FWL
MW #9	Y = 413041.3 N X = 889717.4 E	TOP OF CONC. = 3130.3'	2708' FNL 740' FWL

**EDDIE SEAY CONSULTING**

SURVEY TO LOCATE MONITOR WELLS IN  
SECTIONS 7 & 18, TOWNSHIP 25 SOUTH, RANGE 37 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO

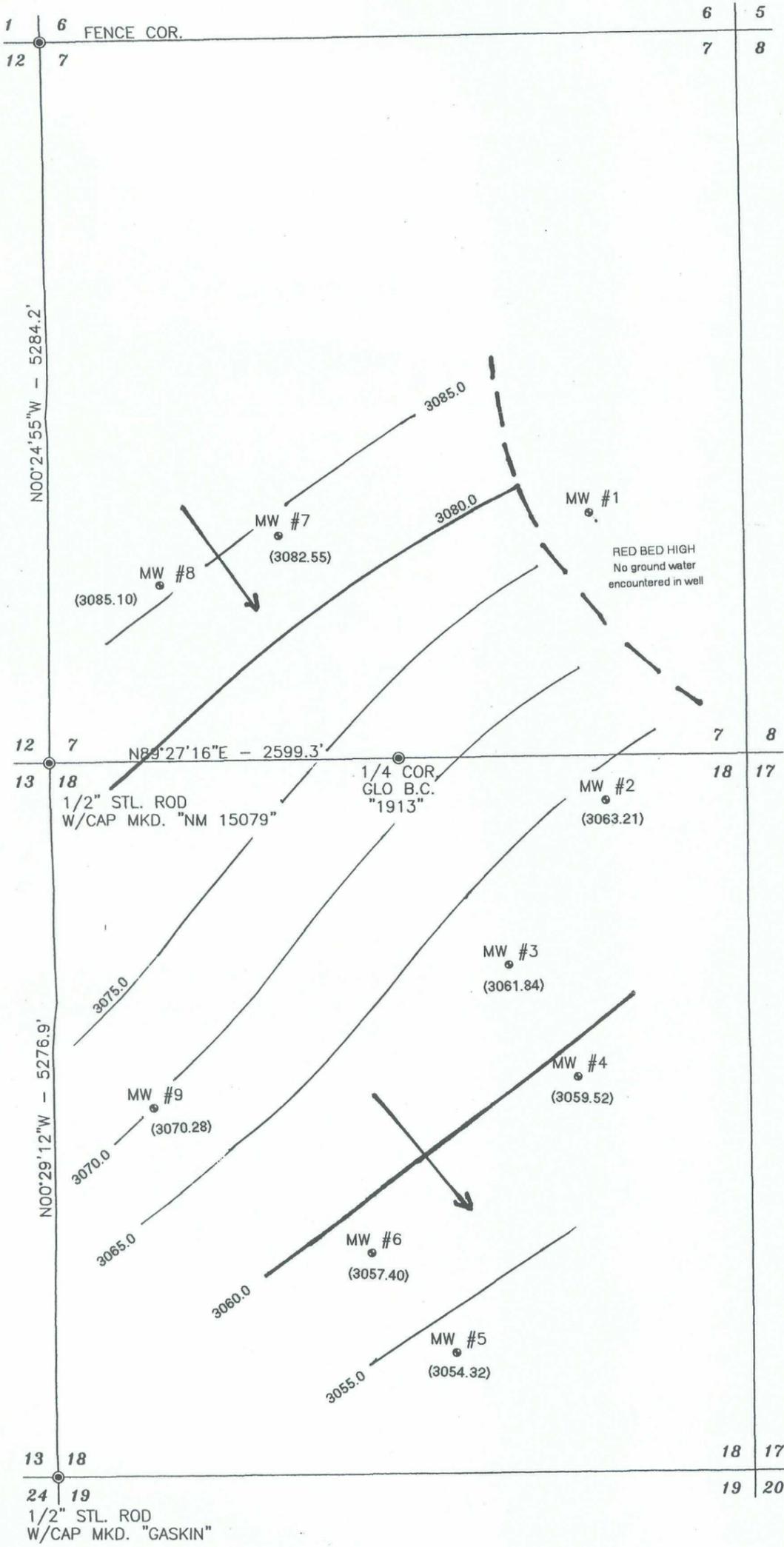
Survey Date: 9/1/05	Sheet 1 of 1 Sheets
W.O. Number: 05.11.1287	Drawn By: L.A.
Date: 9/9/05	DISK:CD#2 05111287



Name: JAL NW  
 Date: 12/17/2005  
 Scale: 1 inch equals 2000 feet

Location: 032° 07' 53.32" N 103° 11' 41.48" W  
 Caption: SLJU, Monitor Well Locations  
 Sections 7, 8, 17, 18 T25S,R37E  
 Lea County, New Mexico

SECTIONS 7 & 18, TOWNSHIP 25 SOUTH, RANGE 37 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.



**SMITH & MARRS  
SLJU**

GROUNDWATER POTENTIOMETRIC  
SURFACE MAP



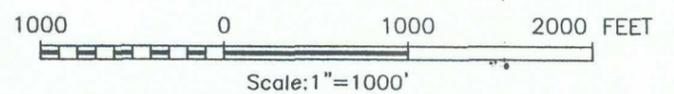
**LEGEND**

- MW #1 Monitor Well
- (3057.40) Groundwater Elevation in Feet
- 3060.0 Groundwater Contour Contour Interval 5 ft.

NOTE: BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I HEREBY CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

GARY G. EIDSON  
NEW MEXICO  
9/12/05  
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PROVIDING SURVEYING SERVICES SINCE 1946  
JOHN WEST SURVEYING COMPANY  
12 N. DAL PASO  
HOBBS, N.M. 88240  
(505) 393-3117



DESCRIPTION	NAD 83 COORDINATES	ELEVATIONS	FOOTAGES FROM SEC. LN.
MW #1	Y = 417416.3 N X = 892984.7 E	TOP OF CONC. = 3129.5'	1775' FSL 1183' FEL
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MW #9	Y = 413041.3 N X = 889717.4 E	TOP OF CONC. = 3130.3'	2708' FNL 740' FWL

**EDDIE SEAY CONSULTING**

SURVEY TO LOCATE MONITOR WELLS IN  
SECTIONS 7 & 18, TOWNSHIP 25 SOUTH, RANGE 37 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO

Survey Date: 9/1/05	Sheet 1 of 1 Sheets
W.O. Number: 05.11.1287	Drawn By: L.A.
Date: 9/9/05	DISK:CD#2 05111287

**APPENDIX 4**

**A. WELL LOGS**

Depth	Soil Column	Analytical Results	Petroleum Odor	Petroleum Stain	Soil Description
5		TPH: <10.0 mg/kg Chi: 192 mg/kg PID: 0.9 ppm	None	None	Caliche and Rock Layer, Dry
10		TPH: <10.0 mg/kg Chi: 176 mg/kg PID: 1.1 ppm	None	None	Soft Caliche and Sand, Dry
15		TPH: <10.0 mg/kg Chi: 128 mg/kg PID: 1.2 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Dry
20		TPH: <10.0 mg/kg Chi: 176 mg/kg PID: 1.5 ppm	None	None	
25		TPH: <10.0 mg/kg Chi: 160 mg/kg PID: 1.1 ppm	None	None	
30		TPH: <10.0 mg/kg Chi: 192 mg/kg PID: 0.8 ppm	None	None	
35		TPH: <10.0 mg/kg Chi: 208 mg/kg PID: 0.6 ppm	None	None	
40			None	None	
45			None	None	
50			None	None	
55			None	None	
60			None	None	
65			None	None	
70			None	None	

Red Bed clay, dry

**Soil Boring Completion Data**

TD: 65 Feet bgs  
Installed 01 Aug 05  
Eddie Seay Consulting

**Soil Boring Plugging Data**

Cement,  
5' bgs to surface

Hydrated  
Bentonite Plug,  
5'-65' bgs

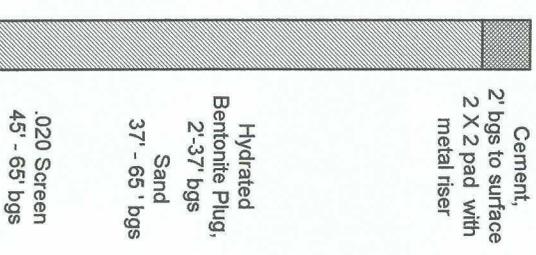
TITLE	Smith - Osborn Site	DESCRIPTION	MW-1
DRAWN BY	KAD	DATE	Aug 05

Depth	Soil Column	Analytical Results	Petroleum Odor	Petroleum Stain	Soil Description
5		TPH: <10.0 mg/kg Chl: 560 mg/kg PID: 2.0 ppm	None	None	Caliche and Rock Layer, Dry
10		TPH: <10.0 mg/kg Chl: 2080 mg/kg PID: 1.5 ppm	None	None	Soft Caliche and Sand, Dry
15		TPH: <10.0 mg/kg Chl: 1920 mg/kg PID: 1.5 ppm	None	None	Gray Clay layer, Dry
20		TPH: <10.0 mg/kg Chl: 1860 mg/kg PID: 1.4 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Dry
25		TPH: <10.0 mg/kg Chl: 2430 mg/kg PID: 1.6 ppm	None	None	Sandstone layer, Dry
30		TPH: <10.0 mg/kg Chl: 128 mg/kg PID: 1.0 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, imbedded w/gravel, moist
35		TPH: <10.0 mg/kg Chl: 128 mg/kg PID: 1.2 ppm	None	None	
40		TPH: <10.0 mg/kg Chl: 128 mg/kg PID: 1.2 ppm	None	None	
45		TPH: <10.0 mg/kg Chl: 128 mg/kg PID: 1.2 ppm	None	None	
50		TPH: <10.0 mg/kg Chl: 128 mg/kg PID: 1.2 ppm	None	None	
55	TPH: <10.0 mg/kg Chl: 128 mg/kg PID: 1.2 ppm	None	None		
60	TPH: <10.0 mg/kg Chl: 128 mg/kg PID: 1.2 ppm	None	None		
65	TPH: <10.0 mg/kg Chl: 128 mg/kg PID: 1.2 ppm	None	None		
70	TPH: <10.0 mg/kg Chl: 128 mg/kg PID: 1.2 ppm	None	None		

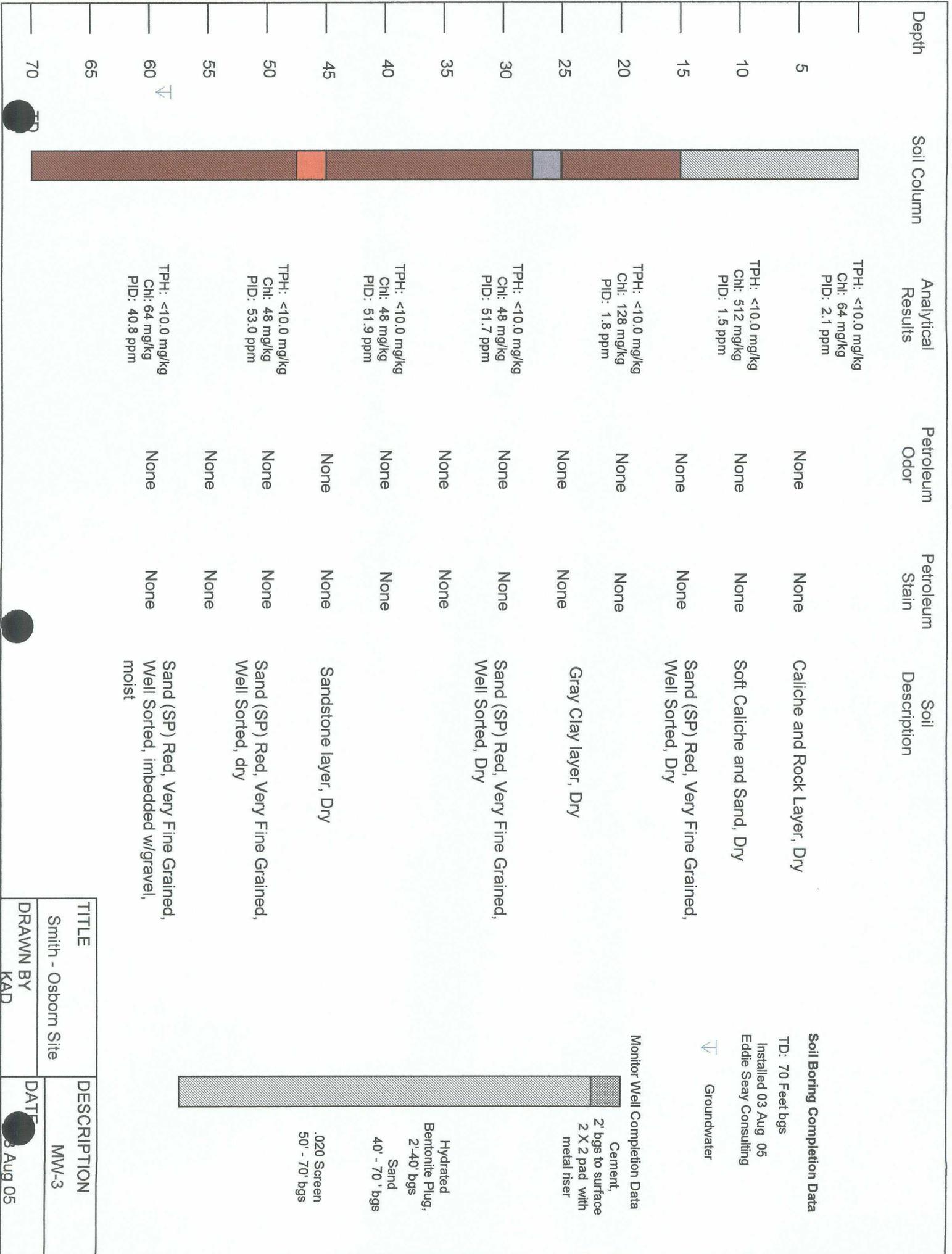
**Soil Boring Completion Data**

TD: 65 Feet bgs  
 Installed 02 Aug. 05  
 Eddie Seay Consulting  
 ▽ Groundwater

**Monitor Well Completion Data**



TITLE	DESCRIPTION
Smith - Osborn Site	MW-2
DRAWN BY	DATE
KAD	Aug 05



TITLE		DESCRIPTION	
Smith - Osborn Site		MW-3	
DRAWN BY	DATE		
KAD	8 Aug 05		

Depth	Soil Column	Analytical Results	Petroleum Odor	Petroleum Stain	Soil Description
5		TPH: 17.4 mg/kg Chi: 64 mg/kg PID: 2.1 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Dry
10		TPH: <10.0 mg/kg Chi: 64 mg/kg PID: 1.6 ppm	None	None	Soft Caliche and Sand, Dry
15		TPH: <10.0 mg/kg Chi: 368 mg/kg PID: 1.6 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Dry
25		TPH: <10.0 mg/kg Chi: 160 mg/kg PID: 1.2 ppm	None	None	Soft Caliche and Sand, Dry
30		TPH: <10.0 mg/kg Chi: 48 mg/kg PID: 1.5 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Dry
35			None	None	
40			None	None	
45			None	None	Sandstone layer, Dry
50		TPH: <10.0 mg/kg Chi: 64 mg/kg PID: 0.7 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, dry
55		TPH: <10.0 mg/kg Chi: 96 mg/kg PID: 0.6 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, imbedded w/gravel, moist
60			None	None	
65					
70					

**Soil Boring Completion Data**

TD: 65 Feet bgs  
 Installed 04 Aug 05  
 Eddie Seay Consulting  
 Groundwater

**Monitor Well Completion Data**

TITLE	DESCRIPTION
Smith - Osborn Site	MW-4
DRAWN BY	DATE
KAD	1 Aug 05

Depth	Soil Column	Analytical Results	Petroleum Odor	Petroleum Stain	Soil Description
5		TPH: 17.4 mg/kg Chl: 64 mg/kg PID: 1.2 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Dry
10		TPH: <10.0 mg/kg Chl: 352 mg/kg PID: 0.7 ppm	None	None	Soft Caliche and Sand, Dry
15		TPH: <10.0 mg/kg Chl: 48 mg/kg PID: 0.9 ppm	None	None	Sandstone layer, Dry
20		TPH: <10.0 mg/kg Chl: 304 mg/kg PID: 1.0 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Dry
25		TPH: <10.0 mg/kg Chl: 512 mg/kg PID: 5.0 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, imbedded w/gravel, moist
30		TPH: <10.0 mg/kg Chl: 304 mg/kg PID: 1.0 ppm	None	None	
35		TPH: <10.0 mg/kg Chl: 512 mg/kg PID: 5.0 ppm	None	None	
40		TPH: <10.0 mg/kg Chl: 304 mg/kg PID: 1.0 ppm	None	None	
45		TPH: <10.0 mg/kg Chl: 512 mg/kg PID: 5.0 ppm	None	None	
50		TPH: <10.0 mg/kg Chl: 304 mg/kg PID: 1.0 ppm	None	None	
55	TPH: <10.0 mg/kg Chl: 512 mg/kg PID: 5.0 ppm	None	None		
60			None		
65			None		
70					

**Soil Boring Completion Data**

TD: 65 Feet bgs  
 Installed 05 Aug 05  
 Eddie Seay Consulting

▽ Groundwater

**Monitor Well Completion Data**

Cement,  
 2' bgs to surface  
 2 X 2 pad with  
 metal riser

Hydrated  
 Bentonite Plug,  
 2'-34" bgs  
 Sand  
 34' - 65' bgs

.020 Screen  
 45' - 65' bgs

TITLE	DESCRIPTION
Smith - Osborn Site	MW-5
DRAWN BY	DATE
KAD	5 Aug 05

Depth	Soil Column	Analytical Results	Petroleum Odor	Petroleum Stain	Soil Description
5		TPH: <10.0 mg/kg Chi: 64 mg/kg PID: 1.3 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Dry
10		TPHO: <10.0 mg/kg Chi: 48 mg/kg PID: 1.0 ppm	None	None	Soft Caliche and Sand, Dry
15		TPH: <10.0 mg/kg Chi: 64 mg/kg PID: 1.2 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Dry
20		TPH: <10.0 mg/kg Chi: 64 mg/kg PID: 1.2 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Imbedded w/gray clay, Dry
25		TPH: <10.0 mg/kg Chi: 64 mg/kg PID: 1.2 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Imbedded w/red clay, Dry
30		TPH: <10.0 mg/kg Chi: 48 mg/kg PID: 1.3 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Imbedded w/red clay, Dry
35		TPH: <10.0 mg/kg Chi: 48 mg/kg PID: 1.3 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Imbedded w/red clay, Dry
40		TPH: <10.0 mg/kg Chi: 48 mg/kg PID: 1.3 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Imbedded w/red clay, Dry
45		TPH: <10.0 mg/kg Chi: 48 mg/kg PID: 1.3 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, Imbedded w/red clay, Dry
50		TPH: <10.0 mg/kg Chi: 48 mg/kg PID: 1.7 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, imbedded w/gravel, moist
55	TPH: <10.0 mg/kg Chi: 64 mg/kg PID: 2.6 ppm	None	None	Sand (SP) Red, Very Fine Grained, Well Sorted, imbedded w/gravel, moist	
60			None		
65			None		
70			None		

**Soil Boring Completion Data**

TD: 65 Feet bgs  
Installed 08 Aug 05  
Eddie Seay Consulting

Groundwater

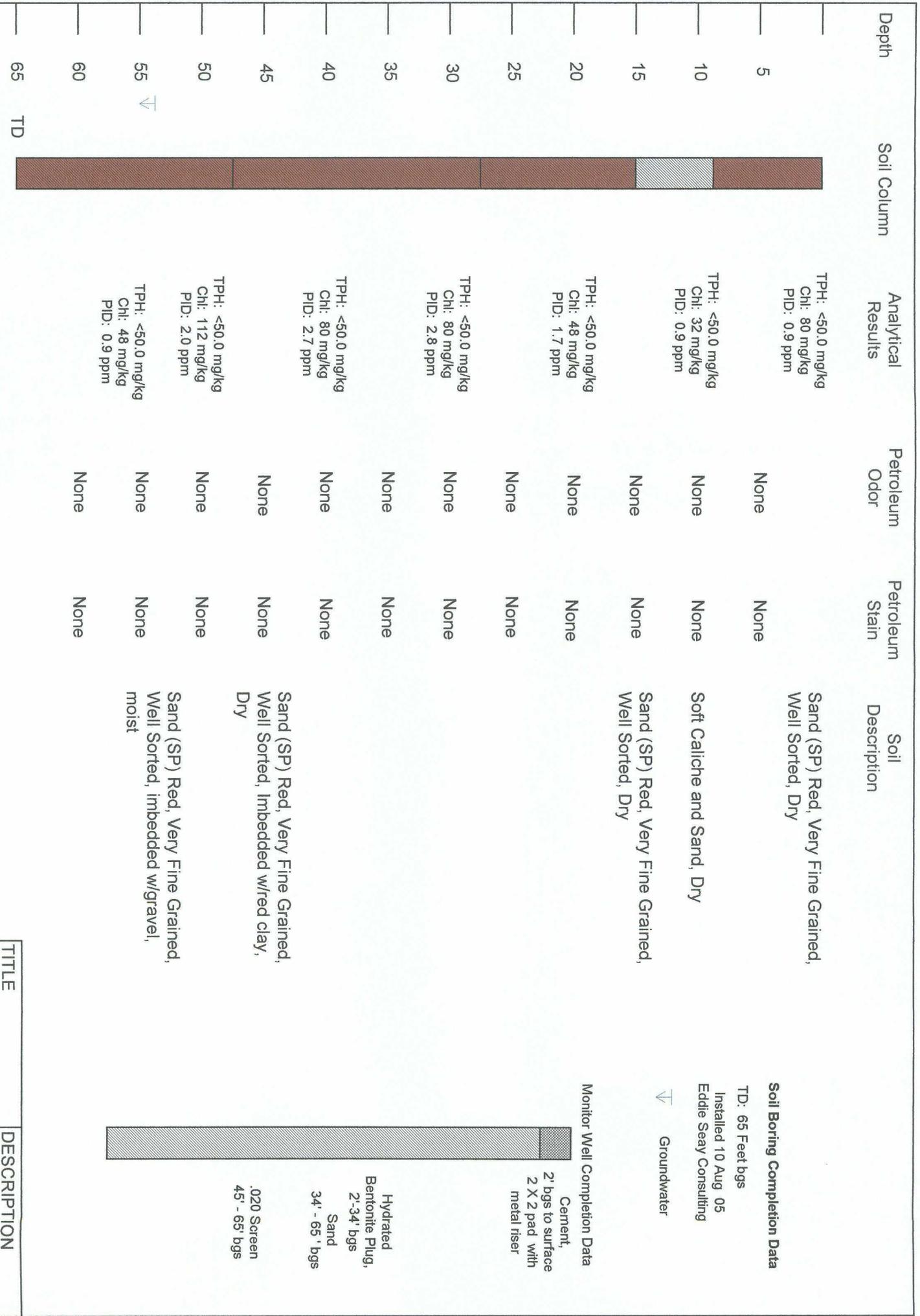
**Monitor Well Completion Data**

Cement,  
2' bgs to surface  
2 X 2 pad with  
metal riser

Hydrated  
Bentonite Plug,  
2'-34" bgs  
Sand  
34" - 65" bgs

.020 Screen  
45' - 65' bgs

TITLE	DESCRIPTION
Smith - Osborn Site	MW-6
DRAWN BY KAD	DATE 8 Aug 05



**Soil Boring Completion Data**

TD: 65 Feet bgs  
 Installed 10 Aug 05  
 Eddie Seay Consulting

Groundwater

**Monitor Well Completion Data**

Cement,  
 2' bgs to surface  
 2 X 2 pad with  
 metal riser

Hydrated  
 Bentonite Plug,  
 2'-34' bgs  
 Sand  
 34' - 65' bgs

.020 Screen  
 45' - 65' bgs

TITLE	DESCRIPTION
Smith - Osborn Site	MW-7
DRAWN BY KAD	DATE 10 Aug 05

**APPENDIX 4**

**B. FIELD MEASUREMENT LOGS**





**APPENDIX 5**

**A. WATER**



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 10/21/05  
 Reporting Date: 10/26/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 10/20/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL & INTACT  
 Sample Received By: AH  
 Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		10/25/05	10/25/05	10/25/05	10/25/05
H10327-1	MW #2	<0.002	<0.002	<0.002	<0.006
H10327-2	MW #3	<0.002	<0.002	<0.002	<0.006
H10327-3	MW #4	<0.002	<0.002	<0.002	<0.006
H10327-4	MW #5	<0.002	<0.002	<0.002	0.006
H10327-5	MW #6	<0.002	<0.002	<0.002	<0.006
H10327-6	MW #7	<0.002	<0.002	<0.002	<0.006
H10327-7	MW #8	<0.002	<0.002	<0.002	<0.006
H10327-8	MW #9	<0.002	<0.002	<0.002	<0.006
Quality Control		0.097	0.092	0.098	0.302
True Value QC		0.100	0.100	0.100	0.300
% Recovery		97.1	92.4	98.0	101.0
Relative Percent Difference		4.2	0.7	2.4	3.9

METHOD: EPA SW-846 8260

*Bryan A. Coche*  
 Chemist

10/26/05  
 Date

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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 10/21/05  
 Reporting Date: 11/01/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 10/20/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: AH  
 Analyzed By: HM

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity ( $\mu$ S/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:		10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/24/05
H10327-1	MW #2	68	80	41	4.74	1497	108
H10327-2	MW #3	158	197	57	7.37	2194	136
H10327-3	MW #4	208	205	46	9.77	2209	112
H10327-4	MW #5	69	35	37	7.81	1040	80
Quality Control		NR	46	54	5.24	1391	NR
True Value QC		NR	50	50	5.00	1413	NR
% Recovery		NR	92.0	108	105	98.4	NR
Relative Percent Difference		NR	1.0	1.6	5.6	4.9	NR
METHODS:		SM3500-Ca-D		3500-Mg E	8049	120.1	310.1

		Cl <sup>-</sup> (mg/L)	SO <sub>4</sub> (mg/L)	CO <sub>3</sub> (mg/L)	HCO <sub>3</sub> (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/25/05
H10327-1	MW #2	204	122	0	132	7.52	777
H10327-2	MW #3	520	203	0	166	7.20	1389
H10327-3	MW #4	544	276	0	137	7.20	1475
H10327-4	MW #5	144	111	0	98	7.50	524
Quality Control		980	48.52	NR	985	6.71	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Recovery		98.0	97.0	NR	98.5	95.9	NR
Relative Percent Difference		1.0	4.8	NR	0.9	0.1	1.1
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

*Hope S. M...  
 Chemist*

11-03-05  
 Date

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 10/21/05  
 Reporting Date: 11/01/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 10/20/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: AH  
 Analyzed By: HM

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (uS/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:		10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/24/05
H10327-5	MW #6	60	42	58	7.40	1154	208
H10327-6	MW #7	183	143	66	6.68	2257	152
H10327-7	MW #8	125	114	47	4.48	1628	80
H10327-8	MW #9	107	64	116	4.29	1794	312
Quality Control		NR	46	54	5.24	1391	NR
True Value QC		NR	50	50	5.00	1413	NR
% Recovery		NR	92.0	108	105	98.4	NR
Relative Percent Difference		NR	1.0	1.6	5.6	4.9	NR
METHODS:		SM3500-Ca-D		3500-Mg E	8049	120.1	310.1

		Cl <sup>-</sup> (mg/L)	SO <sub>4</sub> (mg/L)	CO <sub>3</sub> (mg/L)	HCO <sub>3</sub> (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		10/24/05	10/24/05	10/24/05	10/24/05	10/24/05	10/25/05
H10327-5	MW #6	112	112	0	254	7.30	648
H10327-6	MW #7	520	145	0	185	7.27	1324
H10327-7	MW #8	340	188	0	98	7.16	921
H10327-8	MW #9	176	303	0	381	7.02	1159
Quality Control		980	48.52	NR	985	6.71	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Recovery		98.0	97.0	NR	98.5	95.9	NR
Relative Percent Difference		1.0	4.8	NR	0.9	0.1	1.1
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

*Angie S. Mayo*  
 Chemist

11-03-05  
 Date

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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 10/21/05  
 Reporting Date: 11/01/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 10/20/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: AH  
 Analyzed By: HM

RCRA METALS

LAB NUMBER SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
----------------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

ANALYSIS DATE:	10/26/05	10/31/05	11/01/05	10/31/05	10/27/05	10/31/05	11/01/05	10/26/05
H10327-1 MW #2	<0.05	<0.05	<1	<0.01	<0.05	<0.05	0.003	<0.05
H10327-2 MW #3	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10327-3 MW #4	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10327-4 MW #5	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10327-5 MW #6	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10327-6 MW #7	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10327-7 MW #8	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10327-8 MW #9	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
Quality Control	0.045	1.077	74.79	1.001	0.0089	4.970	0.0096	0.053
True Value QC	0.050	1.000	75.00	1.000	0.0100	5.000	0.0100	0.050
% Recovery	90.0	108	99.7	100	89.0	99.4	96.0	106
Relative Percent Difference	5.3	0.5	6.5	0.1	0.8	2.1	4.9	2.3

METHODS: EPA 600/4-79-020	206.2	272.1	208.1	213.1	218.2	239.1	245.1	270.2
METHODS: SW-846	7060A	7760A	7080A	7130	7190	7420	7470A	7740

*Hope S. Marino*  
 Chemist

*11-03-05*  
 Date

H10327m

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242

Receiving Date: 10/21/05  
 Reporting Date: 11/01/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

FAX TO: (505) 392-6949

Sampling Date: 10/20/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: AH  
 Analyzed By: HM

TOTAL METALS

LAB NUMBER SAMPLE ID Al Co Cu Fe  
 (ppm) (ppm) (ppm) (ppm)

ANALYSIS DATE:	11/01/05	10/31/05	10/31/05	10/31/05
H10327-1 MW #2	<5	<0.05	<0.5	<0.5
H10327-2 MW #3	<5	<0.05	<0.5	<0.5
H10327-3 MW #4	<5	<0.05	<0.5	<0.5
H10327-4 MW #5	<5	<0.05	<0.5	<0.5
Quality Control	10.62	5.108	5.175	5.259
True Value QC	10.00	5.000	5.000	5.000
% Recovery	106	102	104	105
Relative Percent Difference	4.8	0.2	0.1	0.3
METHODS: EPA 600/04-79-020	202.1	219.1	220.1	236.1

Mn Mo Ni Zn  
 (ppm) (ppm) (ppm) (ppm)

ANALYSIS DATE:	10/31/05	11/01/05	10/31/05	10/31/05
H10327-1 MW #2	<0.2	1.59	<0.2	<1
H10327-2 MW #3	<0.2	1.49	0.210	<1
H10327-3 MW #4	<0.2	1.79	0.230	<1
H10327-4 MW #5	<0.2	1.95	0.228	<1
Quality Control	1.030	4.518	1.094	0.491
True Value QC	1.000	5.000	1.000	0.500
% Recovery	103	90.4	109	98.2
Relative Percent Difference	0.2	1.2	1.3	0.6
METHODS: EPA 600/04-79-020	243.1	246.1	249.1	289.1

*Hope S. Merano*  
 Chemist

11-03-05  
 Date

H10327m2

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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242

Receiving Date: 10/21/05  
 Reporting Date: 11/01/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

FAX TO: (505) 392-6949

Sampling Date: 10/20/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: AH  
 Analyzed By: HM

TOTAL METALS

LAB NUMBER SAMPLE ID Al Co Cu Fe  
 (ppm) (ppm) (ppm) (ppm)

ANALYSIS DATE:	11/01/05	10/31/05	10/31/05	10/31/05
H10327-5 MW #6	<5	<0.05	<0.5	<0.5
H10327-6 MW #7	<5	<0.05	<0.5	3.09
H10327-7 MW #8	<5	<0.05	<0.5	<1
H10327-8 MW #9	<5	<0.05	<0.5	<0.5
Quality Control	10.62	5.108	5.175	5.259
True Value QC	10.00	5.000	5.000	5.000
% Recovery	106	102	104	105
Relative Percent Difference	4.8	0.2	0.1	0.3
METHODS: EPA 600/04-79-020	202.1	219.1	220.1	236.1

Mn Mo Ni Zn  
 (ppm) (ppm) (ppm) (ppm)

ANALYSIS DATE:	10/31/05	11/01/05	10/31/05	10/31/05
H10327-5 MW #6	<0.2	2.31	0.235	<1
H10327-6 MW #7	<0.2	2.49	0.261	<1
H10327-7 MW #8	0.337	1.81	0.271	<1
H10327-8 MW #9	<0.2	2.79	0.255	<1
Quality Control	1.030	4.518	1.094	0.491
True Value QC	1.000	5.000	1.000	0.500
% Recovery	103	90.4	109	98.2
Relative Percent Difference	0.2	1.2	1.3	0.6
METHODS: EPA 600/04-79-020	243.1	246.1	249.1	289.1

*Hope S. Moreno*  
 Chemist

11-03-05  
 Date

H10327m3

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page \_\_\_\_\_ of \_\_\_\_\_

Company Name: Edwards Sampling Consultants  
 Project Manager: Edwards Sampling Consultants  
 Address: 101 W Illinois State: NM Zip: 88242  
 City: Hobbs  
 Phone #: 2-2236 Attn: \_\_\_\_\_  
 Fax #: 2-6849 Address: \_\_\_\_\_  
 Project #: Smith/ Osborn Project Owner: R. Smith City: \_\_\_\_\_  
 Project Name: Smith + Osborn SITS State: \_\_\_\_\_  
 Project Location: 200 W.M Phone #: \_\_\_\_\_  
 Fax #: \_\_\_\_\_

LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							PRES.	SAMPLING	DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID:					
H10327-1	MW # 2	✓	4	✓								10/20	1:55	BTEX	
-2	MW # 3	✓	4	✓								"	2:20	Cations	
-3	MW # 4	✓	4	✓								"	3:10	Anions	
-4	MW # 5	✓	4	✓								"	2:55	TDS	
-5	MW # 6	✓	4	✓								"	2:47	Wacc Metal	
-6	MW # 7	✓	4	✓								"	1:55		
-7	MW # 8	✓	4	✓								"	4:10		
-8	MW # 9	✓	4	✓								"	3:50		

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Sampler Relinquished: \_\_\_\_\_ Date: 7/9/21 Received By: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Received By: \_\_\_\_\_  
 Time: 7:00 Time: \_\_\_\_\_

Delivered By: (Circle One) Sample Intact Pool  
 Sample Condition:  Yes  No  
 Checked By: \_\_\_\_\_ (Initials)  
 Sample: UPS - Bus - Other: \_\_\_\_\_

REMARKS:  
 MW # 8 - Osborn Above. MW  
 MW # 9 - Osborn Paid well

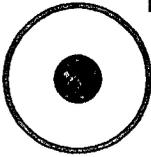
\* Card cannot accept verbal changes. Please fax written changes to 915-673-7020

**APPENDIX 5**

**B. ISOPLETH MAP**



MW-7



Chlorides: 520 mg/L  
BTEX: <0.025 mg/L  
TPH: <10.0 mg/L

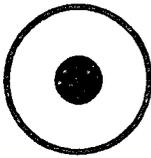
MW-1



MW-2

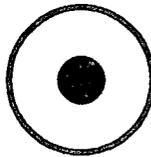


MW-3



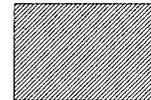
Chlorides: 520 mg/L  
BTEX: <0.025 mg/L  
TPH: <10.0 mg/L

MW-4



Chlorides: 544 mg/L  
BTEX: <0.025 mg/L  
TPH: <10.0 mg/L

Osborn Residence



MW-6



MW-5



TITLE

Isoplath Map  
South Langlie Jal Unit

**APPENDIX 5**

**C. SOIL**

TABLE 1

## SOIL CHEMISTRY

SMITH & MARRS SLJU  
SMITH/OSBORN SITE  
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DEPTH (Below normal surface grade)	SAMPLE DATE	METHOD: 8015M		TOTAL TPH (mg/kg)	4500-CIB CHLORIDE (mg/kg)
			GRO (mg/kg)	DRO (mg/kg)		
MW-1-1	0-2' bgs	08/01/05	<10	<10	<10	192
MW-1-2	10' bgs	08/01/05	<10	<10	<10	176
MW-1-3	20' bgs	08/01/05	<10	<10	<10	128
MW-1-4	30' bgs	08/01/05	<10	<10	<10	176
MW-1-5	40' bgs	08/01/05	<10	<10	<10	160
MW-1-6	50' bgs	08/01/05	<10	<10	<10	192
MW-1-7	60' bgs	08/01/05	<10	<10	<10	208
MW-2-0	0-2' bgs	08/02/05	<10	<10	<10	560
MW-2-1	10' bgs	08/02/05	<10	<10	<10	2080
MW-2-2	20' bgs	08/02/05	<10	<10	<10	1920
MW-2-3	30' bgs	08/02/05	<10	<10	<10	1860
MW-2-4	40' bgs	08/02/05	<10	<10	<10	2430
MW-2-5	50' bgs	08/02/05	<10	<10	<10	128
MW-2-6	60' bgs	08/02/05	<10	<10	<10	128
MW-3-1	0-2' bgs	08/03/05	<10	<10	<10	64
MW-3-2	10' bgs	08/03/05	<10	<10	<10	512
MW-3-3	20' bgs	08/03/05	<10	<10	<10	128
MW-3-4	30' bgs	08/03/05	<10	<10	<10	48
MW-3-5	40' bgs	08/03/05	<10	<10	<10	48
MW-3-6	50' bgs	08/03/05	<10	<10	<10	48
MW-3-7	60' bgs	08/03/05	<10	<10	<10	64
MW-4-1	0-2' bgs	08/04/05	<10	17.4	17.4	64
MW-4-2	10' bgs	08/04/05	<10	<10	<10	64
MW-4-3	20' bgs	08/04/05	<10	<10	<10	368
MW-4-4	30' bgs	08/04/05	<10	<10	<10	160
MW-4-5	40' bgs	08/04/05	<10	<10	<10	48
MW-4-6	50' bgs	08/04/05	<10	<10	<10	64
MW-4-7	55' bgs	08/04/05	<10	<10	<10	96

TABLE 1 (continued)

SOIL CHEMISTRY

SMITH & MARRS SLJU  
SMITH/OSBORN SITE  
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DEPTH (Below normal surface grade)	SAMPLE DATE	METHOD: 8015M		TOTAL TPH (mg/kg)	4500-CIB CHLORIDE (mg/kg)
			GRO (mg/kg)	DRO (mg/kg)		
MW-5-1	0-2' bgs	08/05/05	<10	<10	<10	64
MW-5-2	10' bgs	08/05/05	<10	<10	<10	352
MW-5-3	20' bgs	08/05/05	<10	<10	<10	48
MW-5-4	30' bgs	08/05/05	<10	<10	<10	304
MW-5-5	40' bgs	08/05/05	<10	<10	<10	512
MW-5-6	50' bgs	08/05/05	<10	<10	<10	304
MW-6-1	0-2' bgs	08/08/05	<10	<10	<10	64
MW-6-2	10' bgs	08/08/05	<10	<10	<10	48
MW-6-3	20' bgs	08/08/05	<10	<10	<10	64
MW-6-4	30' bgs	08/08/05	<10	<10	<10	64
MW-6-5	40' bgs	08/08/05	<10	<10	<10	48
MW-6-6	50' bgs	08/08/05	<10	<10	<10	48
MW-6-7	55' bgs	08/08/05	<10	<10	<10	64
MW-7-1	0-2' bgs	08/10/05	<50	<50	<50	80
MW-7-2	10' bgs	08/10/05	<50	<50	<50	32
MW-7-3	20' bgs	08/10/05	<50	<50	<50	48
MW-7-4	30' bgs	08/10/05	<50	<50	<50	80
MW-7-5	40' bgs	08/10/05	<50	<50	<50	80
MW-7-6	50' bgs	08/10/05	<50	<50	<50	112
MW-7-7	55' bgs	08/10/05	<50	<50	<50	48



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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

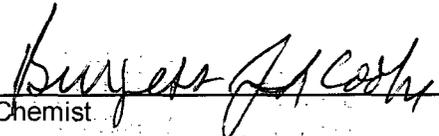
Receiving Date: 08/03/05  
 Reporting Date: 08/05/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

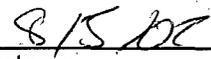
Sampling Date: 08/01/05  
 Sample Type: SOIL  
 Sample Condition: COOL & INTACT  
 Sample Received By: BC  
 Analyzed By: BC/AH

LAB NUMBER SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE	08/04/05	08/04/05	08/04/05
H10036-1 MW #1-0	<10.0	<10.0	192
H10036-2 MW #1-1	<10.0	<10.0	176
H10036-3 MW #1-2	<10.0	<10.0	128
H10036-4 MW #1-3	<10.0	<10.0	176
H10036-5 MW #1-4	<10.0	<10.0	160
H10036-6 MW #1-5	<10.0	<10.0	192
H10036-7 MW #1-6	<10.0	<10.0	208
Quality Control	759	754	1000
True Value QC	800	800	1000
% Recovery	94.9	94.2	100
Relative Percent Difference	3.6	1.2	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB

\*Analyses performed on 1:4 w:v aqueous extracts.

  
 Chemist

  
 Date

H10036.XLS

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page \_\_\_\_\_ of \_\_\_\_\_

Company Name: Eddie Seay Consulting  
 Project Manager: Eddie Seay  
 Address: 601 W Illinois State: Illinois Zip: 68242  
 City: Hobbs  
 Phone #: 2-22236  
 Fax #: 2-6949  
 Project #: Smith/Osborn Project Owner: R. Smith  
 Project Name: Smith/Morris SLSU  
 Project Location: Job

Company: BITTO PO #: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_  
 State: \_\_\_\_\_  
 Phone #: \_\_\_\_\_  
 Fax #: \_\_\_\_\_

LAB I.D.	Sample I.D.	(G)RABOR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			
M16036-1	MW + 1-0		1						8/1	9:10	TPH (Soils) Chloride	
	MW 1-1		1						"	11:12		
	MW 1-2		1						"	11:39		
	MW 1-3		1						"	11:56		
	MW 1-4		1						"	13:50		
	MW 1-5		1						"	13:51		

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: \_\_\_\_\_  
 Date: 8/3  
 Time: 12:15

Received By: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_

Relinquished By: Eddie Seay  
 Delivered By: (Circle One)  
 Sampler - UPS - Bus - Other: \_\_\_\_\_

Received By: (Lab Staff)  
 Sample Condition: \_\_\_\_\_  
 Cool Impact:  Yes  No  
 Checked By: \_\_\_\_\_ (Initials)

Phone Result:  Yes  No  
 Fax Result:  Yes  No  
 Additional Fax #: \_\_\_\_\_  
 REMARKS: Ken Dutton - Rain

\* Card cannot accept verbal changes. Please fax written changes to 915-673-7020.



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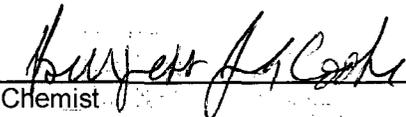
ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

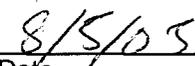
Receiving Date: 08/03/05  
 Reporting Date: 08/05/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 08/02/05  
 Sample Type: SOIL  
 Sample Condition: COOL & INTACT  
 Sample Received By: BC  
 Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	CI* (mg/Kg)
ANALYSIS DATE		08/04/05	08/04/05	08/04/05
H10035-1	MW 2-0	<10.0	<10.0	560
H10035-2	MW 2-1	<10.0	<10.0	2080
H10035-3	MW 2-2	<10.0	<10.0	1920
H10035-4	MW 2-3	<10.0	<10.0	1860
H10035-5	MW 2-4	<10.0	<10.0	2430
H10035-6	MW 2-5	<10.0	<10.0	128
H10035-7	MW 2-6	<10.0	<10.0	128
Quality Control		754	805	1000
True Value QC		800	800	1000
% Recovery		94.3	101	100
Relative Percent Difference		1.4	0.3	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI: Std. Methods 4500-CI'B  
 \*Analyses performed on 1:4 w:v aqueous extracts.

  
 Chemist

  
 Date

H10035.XLS

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page \_\_\_\_ of \_\_\_\_

### ANALYSIS REQUEST

Company Name: Eddie Seay Consulting  
 Project Manager: Eddie Seay  
 Address: 601 W Fillmore State: NM Zip: 87222  
 City: Las Vegas  
 Phone #: 2.2233p  
 Fax #: 2.6946p  
 Project #: Sm.H.10 Shor Project Owner: R. Sm.H.  
 Project Name: Sm.H. + Mavrs S L T U  
 Project Location: 500 NVA  
 For Lab Use Only

Company: \_\_\_\_\_ PO #: \_\_\_\_\_  
 Attn: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone #: \_\_\_\_\_  
 Fax #: \_\_\_\_\_

LAB I.D.	Sample I.D.	(G)RABOR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			
M100354	MW 2-0	(C)	1							8/2	10:15	TPH (8015)
-2	MW 2-1	(C)	1							11	10:52	Chloride
-3	MW 2-2	(C)	1							11	11:34	
-4	MW 2-3	(C)	1							11	13:00	
-5	MW 2-4	(C)	1							11	15:22	
-6	MW 2-5	(C)	1							11	16:06	
-7	MW 2-6	(C)	1							11	16:34	

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Sampler Relinquished: \_\_\_\_\_ Date: 8/3 Received By: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Received By: (Lab Staff) \_\_\_\_\_  
 Time: 10:15

Delivered By: (Circle One)  
 Sampler - UPS - Bus - Other: \_\_\_\_\_  
 Received By: (Lab Staff) \_\_\_\_\_  
 Sample Condition:  Cool  Intact  
 Yes  No  
 Checked By: \_\_\_\_\_ (Initials)  
 REMARKS: \_\_\_\_\_  
 Phone Result:  Yes  No Additional Fax #: \_\_\_\_\_  
 Fax Result:  Yes  No

\* Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

Ken Dutcher - Boyle



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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

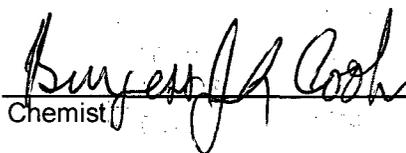
Receiving Date: 08/05/05  
 Reporting Date: 08/09/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 08/03/05  
 Sample Type: SOIL  
 Sample Condition: COOL & INTACT  
 Sample Received By: NF  
 Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE		08/08/05	08/08/05	08/06/05
H10047-1	MW-3-1	<10.0	<10.0	64
H10047-2	MW-3-2	<10.0	<10.0	64
H10047-3	MW-3-3	<10.0	<10.0	368
H10047-4	MW-3-4	<10.0	<10.0	160
H10047-5	MW-3-5	<10.0	<10.0	48
H10047-6	MW-3-6	<10.0	<10.0	64
H10047-7	MW-3-7	<10.0	<10.0	96
Quality Control		759	754	1000
True Value QC		800	800	1000
% Recovery		94.9	94.2	100
Relative Percent Difference		3.6	1.2	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-Cl B

\*Analyses performed on 1:4 w:v aqueous extracts.

  
 Chemist

  
 Date

H10047.XLS

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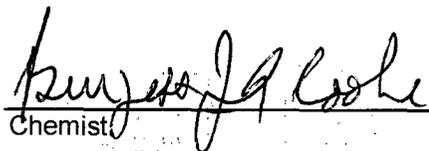
ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 08/05/05  
 Reporting Date: 08/09/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 08/04/05  
 Sample Type: SOIL  
 Sample Condition: COOL & INTACT  
 Sample Received By: NF  
 Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE		08/08/05	08/08/05	08/06/05
H10046-1	MW-4-1	<10.0	17.4	64
H10046-2	MW-4-2	<10.0	<10.0	64
H10046-3	MW-4-3	<10.0	<10.0	368
H10046-4	MW-4-4	<10.0	<10.0	160
H10046-5	MW-4-5	<10.0	<10.0	48
H10046-6	MW-4-6	<10.0	<10.0	64
H10046-7	MW-4-7	<10.0	<10.0	96
Quality Control		759	754	1000
True Value QC		800	800	1000
% Recovery		94.9	94.2	100
Relative Percent Difference		3.6	1.2	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB  
 \*Analyses performed on 1:4 w:v aqueous extracts.

  
 Chemist

8/19/05  
 Date

H10046.XLS

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page \_\_\_\_ of \_\_\_\_

Company Name: Eddie Spear Consulting  
Project Manager: Eddie Spear

Company: BILLIO PO #:

Address: 1001 W Illinois State: NM Zip: 88242

Company: [Signature]  
Address: [Signature]

City: Hobbs State: NM Zip: 88242

City: [Signature] State: [Signature] Zip: [Signature]

Phone #: 2-2236

Phone #: [Signature]

Fax #: 2-6949

Fax #: [Signature]

Project #: Smith Osborn Project Owner: R. Smith

Project Name: Smith & Myers SLTU

Project Location: 500 DWA

FOR LAB USE ONLY

LAB I.D.	Sample I.D.	(GRAB) OR (C)OMP.	# CONTAINERS	MATRIX						PRES.	SAMPLING	DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:					
H10046-1	MW-4-1		1								8/4	8:34	TPH (8015)	
	D MW-4-2		1								8:54	8:54	Chloride	
	3 MW-4-3		1								9:27	9:27		
	4 MW-4-4		1								10:07	10:07		
	5 MW-4-5		1								11:50	11:50		
	6 MW-4-6		1								13:25	13:25		
	7 MW-4-7		1								13:58	13:58		

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Sampler Relinquished: [Signature] Date: 8/5 Received By: [Signature]  
Relinquished By: [Signature] Date: 1:30 Received By: [Signature]

Delivered By: (Circle One) Sample Intact Checked By: [Signature]  
Sampler - UPS - Bus - Other: [Signature]

REMARKS: Ken Dutton - Boise

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice and all costs of collections, including attorney's fees.

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ANALYTICAL RESULTS FOR  
EDDIE SEAY CONSULTING  
ATTN: EDDIE SEAY  
601 W. ILLINOIS  
HOBBS, NM 88242  
FAX TO: (505) 392-6949

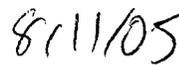
Receiving Date: 08/09/05  
Reporting Date: 08/11/05  
Project Owner: R. SMITH  
Project Name: SMITH & MARRS SLJU  
Project Location: JAL, NM

Sampling Date: 08/08/05  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: NF  
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE		08/10/05	08/10/05	08/10/05
H10058-1	MW 6-1	<10.0	<10.0	64
H10058-2	MW 6-2	<10.0	<10.0	48
H10058-3	MW 6-3	<10.0	<10.0	64
H10058-4	MW 6-4	<10.0	<10.0	64
H10058-5	MW 6-5	<10.0	<10.0	48
H10058-6	MW 6-6	<10.0	<10.0	48
H10058-7	MW 6-7	<10.0	<10.0	64
Quality Control		768	781	970
True Value QC		800	800	1000
% Recovery		96.0	97.6	97.0
Relative Percent Difference		1.7	0.7	3.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB  
\*Analyses performed on 1:4 w:v aqueous extracts.

  
Chemist

  
Date

H10058.XLS



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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page \_\_\_\_\_ of \_\_\_\_\_

Company Name: Edwards Sam Consulting  
 Project Manager: Edwards Sam Consulting

Address: 601 W Illinois State: NM Zip: 88242

City: Hobbs State: NM Zip: 88242

Phone #: 2-2236 City: Socorro

Fax #: 2-6949 State: Zip:

Project #: Smith Osborn Project Owner: R Smith

Project Name: Smith & Mours SLTCA

Project Location: 300 NWYN Fax #:

FOR LAB USE ONLY

LAB I.D.	Sample I.D.	Q/RAT OR (C)OMP.	# CONTAINERS	MATRIX							PRES.	SAMPLING	DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID:					
H10058-1	MW 6-1		1									8/8	9:58	TPH (510)	
	-2 MW 6-2		1									11	10:12	Chryl	
	-3 MW 6-3		1									11	10:40		
	-4 MW 6-4		1									11	11:14		
	-5 MW 6-5		1									11	11:54		
	-6 MW 6-6		1									11	12:35		
	-7 MW 6-7		1									11	13:22		

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Sampler Relinquished By: [Signature] Date: 8/9 Time: 11:30  
 Received By: [Signature]

Relinquished By: [Signature] Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received By: [Signature]

Delivered By: (Circle One)  Sample Intact  Yes  No

Sampler - UPS - Bus - Other: \_\_\_\_\_  
 Checked By: [Signature]

REMARKS: Ken Dutton - Basie

+ Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.



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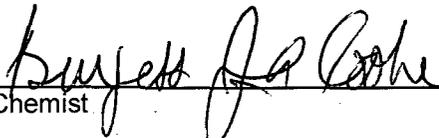
ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 08/09/05  
 Reporting Date: 08/11/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 08/05/05  
 Sample Type: SOIL  
 Sample Condition: COOL & INTACT  
 Sample Received By: NF  
 Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE		08/10/05	08/10/05	08/10/05
H10059-1	MW 5-1	<10.0	<10.0	64
H10059-2	MW 5-2	<10.0	<10.0	352
H10059-3	MW 5-3	<10.0	<10.0	48
H10059-4	MW 5-4	<10.0	<10.0	304
H10059-5	MW 5-5	<10.0	<10.0	512
H10059-6	MW 5-6	<10.0	<10.0	304
Quality Control		768	781	970
True Value QC		800	800	1000
% Recovery		96.0	97.6	97.0
Relative Percent Difference		1.7	0.7	3.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-Cl'B  
 \*Analyses performed on 1:4 w:v aqueous extracts.

  
 Chemist

8/11/05  
 Date

H10059.XLS

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Cardinal Laboratories</u>		BILL TO		PO #:				
Project Manager: <u>Eddie W. Shaw</u>		Company:						
Address: <u>601 W Illinois</u>		City:						
State: <u>NM</u> Zip: <u>87842</u>		Attn:						
Phone #: <u>2-2236</u>		Address:						
Fax #: <u>2-6949</u>		City:						
Project #: <u>Smith Osborn</u> Project Owner: <u>R. Smith</u>		State:						
Project Name: <u>Smith + Morris</u> <u>SCJL</u>		Phone #:						
Project Location: <u>Site A111</u>		Fax #:						
FOR LAB USE ONLY		PRES.		SAMPLING				
LAB I.D.	Sample I.D.	(G)RAB (C)OMP.	# CONTAINERS	MATRIX		DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER			
A100 S9-1	MW 5-1		1			9/5	9:45	TPH (805)
-2	MW 5-2		1			"	10:24	Chloride
-3	MW 5-3		1			"	10:39	
-4	MW 5-4		1			"	11:34	
-5	MW 5-5		1			"	12:25	
-6	MW 5-6		1			"	13:11	

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Sampler Relinquished: Eddie W. Shaw Date: 8/9 Received By: [Signature]  
 Relinquished By: [Signature] Date: 11:30 Received By: [Signature]

Delivered By: (Circle One)  UPS  Bus  Other: 7/1  
 Sample Condition:  Cool  Intact  Yes  No  
 CHECKED BY: [Signature] (Initials)

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

REMARKS: Ken Dutton - Positive  
 Phone Result:  Yes  No Additional Fax #:



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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 WEST ILLINOIS  
 HOBBS, NM 88242

Receiving Date: 8/10/05  
 Reporting Date: 8/15/05  
 Project Number: SMITH / OSBORN  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 8/10/05  
 Sample Type: SOIL  
 Sample Condition: COOL & INTACT  
 Sample Received By: GP  
 Analyzed By: JD

LAB ID	SAMPLE ID	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH TOTAL (mg/kg)
ANALYSIS DATE		7/13/05	7/13/05	7/13/05
H10072-1	MW 7-1	<50.0	<50.0	<50.0
H10072-2	MW 7-2	<50.0	<50.0	<50.0
H10072-3	MW 7-3	<50.0	<50.0	<50.0
H10072-4	MW 7-4	<50.0	<50.0	<50.0
H10072-5	MW 7-5	<50.0	<50.0	<50.0
H10072-6	MW 7-6	<50.0	<50.0	<50.0
H10072-7	MW 7-7	<50.0	<50.0	<50.0
Blank		<50.0	<50.0	<50.0
Matrix Spike		64.4	59.8	124
Matrix Spike Duplicate		65.6	58.6	124
True Value		60	60	120
% Recovery (Ave)		108	98.7	103
Relative Percent Difference		1.8	2	0

METHOD: EPA SW 846-8015 M

*Janelle DeBein*  
 Chemist

8/15/05  
 Date

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ANALYTICAL RESULTS FOR  
EDDIE SEAY CONSULTING  
ATTN: EDDIE SEAY  
601 W. ILLINOIS  
HOBBS, NM 88242  
FAX TO: (505) 392-6949

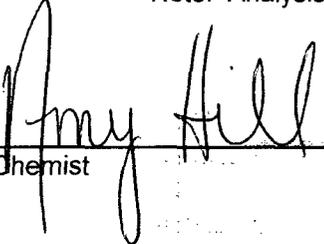
Receiving Date: 08/10/05  
Reporting Date: 08/12/05  
Project Owner: R. SMITH  
Project Name: SMITH & MARRS SLJU  
Project Location: JAL, NM

Analysis Date: 08/11/05  
Sampling Date: 08/10/05  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: GP  
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl <sup>-</sup> (mg/Kg)
H10072-1	MW 7-1	80
H10072-2	MW 7-2	32
H10072-3	MW 7-3	48
H10072-4	MW 7-4	80
H10072-5	MW 7-5	80
H10072-6	MW 7-6	112
H10072-7	MW 7-7	48
Quality Control		970
True Value QC		1000
% Recovery		97.0
Relative Percent Difference		3.0

METHOD: Standard Methods	4500-Cl <sup>-</sup> B
--------------------------	------------------------

Note: Analysis performed on a 1:4 w:v aqueous extract.

  
Chemist

8/12/05  
Date



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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page \_\_\_ of \_\_\_

Company Name: Eddie's Sewer Consulting  
Project Manager: Eddie's Sewer Consulting

Address: 601 W Illinois State: NM Zip: 86422  
City: Hobbs

Company: BILITO PO #: \_\_\_\_\_  
Attn: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_

Phone #: 2-2236  
Fax #: 2-6949  
Project #: Smith / Osborn Project Owner: R. Smith

Project Name: Smith + Marks SLOE  
Project Location: SOA NM

LAB I.D.	Sample I.D.	(G)RAB (C)OMP.	# CONTAINERS	MATRIX							PRES.	SAMPLING	DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID:					
410072-1	MW 7-1	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	9:10	9:40	TPH (805)								
-2	MW 7-2	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	9:57	9:57	Chloride								
-3	MW 7-3	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	10:25	10:25									
-4	MW 7-4	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	11:00	11:35									
-5	MW 7-5	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	13:09	13:09									
-6	MW 7-6	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	13:32	13:32									
-7	MW 7-7	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>											

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Sampler Relinquished: Eddie's Sewer Consulting Date: 9/10 Time: 5:00  
Relinquished By: \_\_\_\_\_  
Received By: (Lab Staff) \_\_\_\_\_  
Sample Condition:  Cool  Intact  Yes  No

Delivered By: (Circle One) UPS - Bus - Other:  
Samp. Condition:  Cool  Intact  Yes  No  
CHECKED BY: (Initials) \_\_\_\_\_

REMARKS: \_\_\_\_\_  
Phone Result:  Yes  No  
Fax Result:  Yes  No  
Additional Fax #: \_\_\_\_\_

\* Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

## APPENDIX 6

### A. STATE ENGINEER DATA

**New Mexico Office of the State Engineer  
POD Reports and Downloads**

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  
 Domestic  All

POD / Surface Data Report  Avg Depth to Water Report  
 Water Column Report

POD / SURFACE DATA REPORT 12/18/20

(acre ft per annum)  
DB File Nbr      Use      Diversion      Owner      POD Nu

No Records found, try again

**New Mexico Office of the State Engineer  
POD Reports and Downloads**

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  
 Domestic  All

POD / Surface Data Report  Avg Depth to Water Report  
 Water Column Report

**POD / SURFACE DATA REPORT 12/18/20**

DB File Nbr	Use	Diversion	Owner	POD Nu
CP 00507	SAN	3	UNION TEX PETE CO.	CP 00

Record Count: 1

**New Mexico Office of the State Engineer  
POD Reports and Downloads**

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  
 Domestic  All

**POD / SURFACE DATA REPORT 12/17/20**

DB File Nbr	Use	Diversion	Owner	POD Nu
CP 00889	DOM	3	CLAY & GERALDINE (JERI) OSBORN	CP 00

Record Count: 1

**New Mexico Office of the State Engineer  
POD Reports and Downloads**

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  
 Domestic  All

POD / Surface Data Report  Avg Depth to Water Report  
 Water Column Report

POD / SURFACE DATA REPORT 12/17/20

(acre ft per annum)  
DB File Nbr      Use      Diversion      Owner      POD Nu

No Records found, try again

**New Mexico Office of the State Engineer  
POD Reports and Downloads**

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  
 Domestic  All

POD / Surface Data Report  Avg Depth to Water Report  
 Water Column Report

POD / SURFACE DATA REPORT 12/18/20

	(acre ft per annum)			
DB File Nbr	Use	Diversion	Owner	POD Nu

No Records found, try again

**New Mexico Office of the State Engineer  
POD Reports and Downloads**

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  
 Domestic  All

POD / Surface Data Report  Avg Depth to Water Report  
 Water Column Report

**POD / SURFACE DATA REPORT 12/18/20**

DB File Nbr	Use	Diversion	Owner	POD Nu
CP 00890	DOM	3	CLAY & GERALDINE (JERI) OSBORN	CP 00

Record Count: 1

New Mexico Office of the State Engineer  
POD Reports and Downloads

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  
 Domestic  All

POD / Surface Data Report  Avg Depth to Water Report  
 Water Column Report

POD / SURFACE DATA REPORT 12/17/20

DB File Nbr	Use	Diversion	Owner	POD Nu
CP 00844	STK	0	TRUSTEES/JAL PUBLIC LIBRARY	CP 00

Record Count: 1

**New Mexico Office of the State Engineer  
POD Reports and Downloads**

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  
 Domestic  All

POD / Surface Data Report  Avg. Depth to Water Report  
 Water Column Report

**POD / SURFACE DATA REPORT 12/17/20**

DB File Nbr	Use	Diversion	Owner	POD Nu
CP 00888	DOM	3	CLAY & GERALDINE (JERI) OSBORN	CP 00
CP 00891	DOM	3	CLAY & GERALDINE (JERI) OSBORN	CP 00
CP 00892	DOM	3	CLAY & GERALDINE (JERI) OSBORN	CP 00
CP 00893	DOM	3	CLAY & GERALDINE (JERI) OSBORN	CP 00
CP 00894	DOM	3	CLAY & GERALDINE (JERI) OSBORN	CP 00

Record Count: 5

**New Mexico Office of the State Engineer  
POD Reports and Downloads**

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  
 Domestic  All

**POD / SURFACE DATA REPORT 12/18/20**

DB File Nbr	Use	Diversion	Owner	POD Nu
CP 00388	DOM	0	JAKE MC KOWEN	CP 0C
CP 00429	DOM	3	HOMER E. MOLDER	CP 0C
CP 00444	DOM	3	D. C. BUFFINGTON	CP 0C
CP 00460	DOM	3	E. W. RUSCHE	CP 0C
CP 00515	DOM	3	JOHN SHROYER	CP 0C
CP 00518	DOM	0	V.B. BROCK	CP 0C
CP 00526	DOM	0	A.D. KEMP	CP 0C
CP 00533	DOM	3	A.D. KEMP	CP 0C
CP 00534	DOM	3	DAN COX	CP 0C
CP 00541	DOM	3	BILLY W. MOSLEY	CP 0C
CP 00565	DOM	3	SAM R. BEAIRD	CP 0C
CP 00607	DOM	3	RAYMOND F. GRAY	CP 0C
CP 00608	DOM	3	FLOYD MCCUNE MATHIS	CP 0C
CP 00710	DOM	3	S. A. SEARCY	CP 0C

Record Count: 14

**New Mexico Office of the State Engineer  
POD Reports and Downloads**

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  
 Domestic  All

**POD / SURFACE DATA REPORT 12/18/20**

DB File Nbr	Use	Diversion	Owner	POD Nu
CP 00120	COM	31.2	CHAPARRAL SERVICES, INC.	CP 00
CP 00121	COM	15.6	CHAPARRAL SERVICES, INC.	CP 00
CP 00124	COM	31.2	CHAPARRAL SERVICES, INC.	CP 00
CP 00428	DOM	3	ANNICE KATHLEEN BUTTER	CP 00
CP 00557	DOM	3	LUCILLE BOCK WEBB	CP 00
CP 00619	DOM	3	JOHN T. SWINFORD	CP 00
CP 00620	DOM	3	D. E. BAILEY	CP 00
CP 00661	DOM	3	D. E. BAILEY	CP 00
CP 00777	DOM	3	GUAN D. MILLER	CP 00

Record Count: 9

APPENDIX 6

**B. DOMESTIC WATER WELL LIST**

Smith-Osborn Site  
New Mexico State Engineers Water Database  
Water well locations within 1 mile of Smith-Osborn Site

Trailer Park  
32° 06' 57" North, 103° 11' 30" West  
Sample unattainable

Bailey  
32° 06' 57" North, 103° 11' 30" West  
Sampled: 10 Nov 05, 1015

Bailey  
32° 06' 58" North, 103° 11' 30" West  
Sampled: 10 Nov 05, 1030

Beard  
32° 06' 54" North, 103° 11' 40" West  
Sample unattainable

Windmill  
32° 06' 59" North, 103° 11' 50" West  
Sample unattainable

Mathis  
32° 07' 02" North, 103° 11' 46" West  
Sampled: 02 Nov 05, 1005

Stephenson # 1  
32° 07' 24" North, 103° 11' 53" West  
Sampled: 02 Nov 05, 1040

Stephenson # 2  
32° 07' 21" North, 103° 11' 53" West  
Sampled: 02 Nov 05, 1055

Osborn House Well # 1  
32° 08' 01" North, 103° 11' 42" West  
Sampled: 02 Nov 05, 1125

Osborn Windmill  
32° 08' 02" North, 103° 11' 43" West  
Sample unattainable

Osborn West # 2  
32° 08', 01" North, 103° 11', 43" West  
Sample unattainable

Osborn East House # 3  
32° 08', 01" North, 103° 11', 36" West  
Sampled: 02 Nov 05, 1155

Osborn East House # 4  
32° 08', 03" North, 103° 11', 37" West  
Sampled: 02 Nov 05, 1205

Osborn Pond (East of House)  
32° 08', 01" North, 103° 11', 40" West  
Sampled: 02 Nov 05, 1215

Osborn Monitor Well-1  
32° 08', 10" North, 103° 11', 46" West  
Sample unattainable

Gray Windmill  
32° 07', 23" North, 103° 12', 06" West  
Sample unattainable

Chance Water Well  
32° 07', 23" North, 103° 11', 36" West  
Sample unattainable

Jal Country Club # 1 South  
32° 07', 29" North, 103° 11', 36" West  
Sampled: 02 Nov 05, 1310

Jal Country Club # 2 North  
32° 07', 36" North, 103° 11', 38" West  
Sampled: 02 Nov 05, 1217

Jal Country Club # 3 Pond  
32° 08', 01" North, 103° 11', 36" West  
Sampled: 02 Nov 05, 1325

Jal Public Library Well  
32° 07', 40" North, 103° 11', 32" West  
Sample unattainable

Moulder Water Well  
32° 07' 18" North, 103° 11' 37" West  
Sample unattainable

Corner of Garage  
32° 06' 58" North, 103° 11' 32" West  
Sample unattainable

Webb  
32° 06' 36" North, 103° 11' 32" West  
Sample unattainable

Swinford-Martinez  
32° 06' 55" North, 103° 11' 33" West  
Sample unattainable

Rousche  
32° 07' 10" North, 103° 11' 57" West  
Sample unattainable

Miller  
32° 06' 56" North, 103° 11' 08" West  
Sample unattainable

Chaparral # 1  
32° 07' 05" North, 103° 10' 43" West  
Sample unattainable

Chaparral # 2  
32° 07' 02" North, 103° 10' 42" West  
Sample unattainable

Chaparral # 3  
32° 07' 05" North, 103° 11' 00" West  
Sample unattainable

APPENDIX 6

C. DOMESTIC WATER WELL DATA



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 11/02/05  
 Reporting Date: 11/04/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: OSBORN RANCH, JAL, NM

Sampling Date: 11/02/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL & INTACT  
 Sample Received By: NF  
 Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		11/03/05	11/03/05	11/03/05	11/03/05
H10370-1	MATHIS #1	<0.002	<0.002	<0.002	<0.006
H10370-2	STEPHENSON #1-N	<0.002	<0.002	<0.002	<0.006
H10370-3	STEPHENSON #2-S	<0.002	<0.002	<0.002	<0.006
H10370-4	OSBORN HOUSE #1	<0.002	<0.002	<0.002	<0.006
H10370-5	OSBORN EAST #3	<0.002	<0.002	<0.002	<0.006
H10370-6	OSBORN EAST #4	<0.002	<0.002	<0.002	<0.006
H10370-7	OSBORN POND #5	<0.002	<0.002	<0.002	<0.006
H10370-8	JCC #1	<0.002	<0.002	<0.002	<0.006
H10370-9	JCC #2	<0.002	<0.002	<0.002	<0.006
H10370-10	JCC #3	<0.002	<0.002	<0.002	<0.006
Quality Control		0.110	0.092	0.090	0.279
True Value QC		0.100	0.100	0.100	0.300
% Recovery		110	91.6	90.4	92.9
Relative Percent Difference		6.2	2.2	4.9	5.0

METHOD: EPA SW-846 8260, 624

*Bryan J. Cook*  
 Chemist

11/4/05  
 Date

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 11/02/05  
 Reporting Date: 11/09/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 11/02/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: NF  
 Analyzed By: HM/AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (uS/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:		11/08/05	11/08/05	11/08/05	11/08/05	11/03/05	11/08/05
H10370-1	MATHIS #1	248	196	48	5.33	2110	224
H10370-2	STEPHENSON #1 N	324	362	126	8.83	3280	220
H10370-3	STEPHENSON #2 S	282	301	78	7.48	2860	180
H10370-4	OSBORN HOUSE #1	342	347	142	9.67	3610	184
Quality Control		NR	52	48	3.08	1391	NR
True Value QC		NR	50	50	3.00	1413	NR
% Recovery		NR	103	95.9	103	98.4	NR
Relative Percent Difference		NR	1.2	1.2	1.1	4.9	NR
METHODS:		SM3500-Ca-D		3500-Mg E	8049	120.1	310.1

		Cl <sup>-</sup> (mg/L)	SO <sub>4</sub> (mg/L)	CO <sub>3</sub> (mg/L)	HCO <sub>3</sub> (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		11/04/05	11/08/05	11/08/05	11/08/05	11/03/05	11/09/05
H10370-1	MATHIS #1	284	585	0	273	7.59	1643
H10370-2	STEPHENSON #1 N	640	977	0	268	7.37	2827
H10370-3	STEPHENSON #2 S	576	676	0	220	7.50	2226
H10370-4	OSBORN HOUSE #1	1096	461	0	224	7.47	2620
Quality Control		1030	58.36	NR	964	7.03	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Recovery		103	117	NR	96.4	100	NR
Relative Percent Difference		5.0	13	NR	2.1	0.1	1.1
METHODS:		SM4500-Cl-B		375.4	310.1	310.1	150.1

*Amy Hill*  
 \_\_\_\_\_  
 Chemist

11/9/05  
 \_\_\_\_\_  
 Date

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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 11/02/05  
 Reporting Date: 11/09/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 11/02/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: NF  
 Analyzed By: HM/AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity ( $\mu$ S/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:		11/08/05	11/08/05	11/08/05	11/08/05	11/03/05	11/08/05
H10370-5	OSBORN EAST #3	330	286	98	17.2	3070	212
H10370-6	OSBORN EAST #4	247	279	110	6.03	2830	184
H10370-7	OSBORN POND #5	345	290	112	7.94	3200	176
H10370-8	JCC #1	282	256	128	7.55	3070	252
Quality Control		NR	52	48	3.08	1391	NR
True Value QC		NR	50	50	3.00	1413	NR
% Recovery		NR	103	95.9	103	98.4	NR
Relative Percent Difference		NR	1.2	1.2	1.1	4.9	NR
METHODS:		SM3500-Ca-D		3500-Mg E	8049	120.1	310.1

		Cl <sup>-</sup> (mg/L)	SO <sub>4</sub> (mg/L)	CO <sub>3</sub> (mg/L)	HCO <sub>3</sub> (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		11/04/05	11/08/05	11/08/05	11/08/05	11/03/05	11/09/05
H10370-5	OSBORN EAST #3	828	459	0	259	7.30	2283
H10370-6	OSBORN EAST #4	744	444	0	224	7.25	2163
H10370-7	OSBORN POND #5	912	465	0	215	7.51	2486
H10370-8	JCC #1	524	767	0	307	7.17	2404
Quality Control		1030	58.36	NR	964	7.03	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Recovery		103	117	NR	96.4	100	NR
Relative Percent Difference		5.0	13	NR	2.1	0.1	1.1
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

*Amy Hill*  
 \_\_\_\_\_  
 Chemist

11/9/05  
 \_\_\_\_\_  
 Date

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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 11/02/05  
 Reporting Date: 11/09/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 11/02/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: NF  
 Analyzed By: HM/AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity ( $\mu$ S/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
ANALYSIS DATE:		11/08/05	11/08/05	11/08/05	11/08/05	11/03/05	11/08/05
H10370-9	JCC #2	379	422	105	8.79	3860	256
H10370-10	JCC #3	142	65	60	17.2	1380	256
Quality Control		NR	52	48	3.08	1391	NR
True Value QC		NR	50	50	3.00	1413	NR
% Recovery		NR	103	95.9	103	98.4	NR
Relative Percent Difference		NR	1.2	1.2	1.1	4.9	NR
METHODS:		SM3500-Ca-D		3500-Mg E	8049	120.1	310.1

		Cl <sup>-</sup> (mg/L)	SO <sub>4</sub> (mg/L)	CO <sub>3</sub> (mg/L)	HCO <sub>3</sub> (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		11/04/05	11/08/05	11/08/05	11/08/05	11/03/05	11/09/05
H10370-9	JCC #2	748	973	0	312	7.21	3118
H10370-10	JCC #3	164	244	0	312	8.28	1015
Quality Control		1030	58.36	NR	964	7.03	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Recovery		103	117	NR	96.4	100	NR
Relative Percent Difference		5.0	13	NR	2.1	0.1	1.1
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

*Amy Hill*  
 Chemist

11/9/05  
 Date

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 11/02/05  
 Reporting Date: 11/15/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

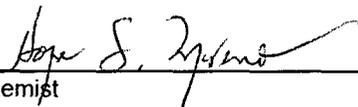
Sampling Date: 11/02/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: NF  
 Analyzed By: HM

RCRA METALS

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

ANALYSIS DATE:	11/07/05	11/08/05	11/08/05	11/08/05	11/08/05	11/08/05	11/08/05	11/08/05	11/07/05
H10370-1	MATHIS #1	<0.05	0.12	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10370-2	STEPHENSON #1	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10370-3	STEPHENSON #2	<0.05	<0.05	<1	0.02	<0.05	<0.05	<0.002	<0.05
H10370-4	OSBORN HOUSE	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10370-5	OSBORN EAST #3	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10370-6	OSBORN EAST #4	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10370-7	OSBORN POND #	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10370-8	JCC #1	<0.05	0.07	<1	<0.01	<0.05	<0.05	<0.002	<0.05
Quality Control		0.051	5.173	23.34	4.925	2.046	5.138	0.0083	0.049
True Value QC		0.050	5.000	25.00	5.000	2.000	5.000	0.0080	0.050
% Recovery		103	103	93.4	98.5	102	103	104	98.0
Relative Percent Difference		2.0	1.6	0.5	0.4	0.6	1.7	3.4	2.4

METHODS: EPA 600/4-79-020	206.2	272.1	208.1	213.1	218.2	239.1	245.1	270.2
METHODS: SW-846	7060A	7760A	7080A	7130	7190	7420	7470A	7740

  
 Chemist

11-15-05  
 Date

H10370m

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 11/02/05  
 Reporting Date: 11/15/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 11/02/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: NF  
 Analyzed By: HM

RCRA METALS

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

ANALYSIS DATE:		11/07/05	11/08/05	11/08/05	11/08/05	11/08/05	11/08/05	11/08/05	11/07/05
H10370-9	JCC #2	<0.05	0.12	<1	<0.01	<0.05	<0.05	<0.002	<0.05
H10370-10	JCC #3	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.05
Quality Control		0.051	5.173	23.34	4.925	2.046	5.138	0.0083	0.049
True Value QC		0.050	5.000	25.00	5.000	2.000	5.000	0.0080	0.050
% Recovery		103	103	93.4	98.5	102	103	104	98.0
Relative Percent Difference		2.0	1.6	0.5	0.4	0.6	1.7	3.4	2.4

METHODS: EPA 600/4-79-020		206.2	272.1	208.1	213.1	218.2	239.1	245.1	270.2
METHODS: SW-846		7060A	7760A	7080A	7130	7190	7420	7470A	7740

*Step S. Mofore*  
 Chemist

11-15-05  
 Date

H10370m2

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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242

Receiving Date: 11/02/05  
 Reporting Date: 11/15/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

FAX TO: (505) 392-6949

Sampling Date: 11/02/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: NF  
 Analyzed By: HM

TOTAL METALS

LAB NUMBER SAMPLE ID Al Co Cu Fe  
 (ppm) (ppm) (ppm) (ppm)

ANALYSIS DATE:	11/08/05	11/08/05	11/08/05	11/08/05
H10370-1 MATHIS #1	<5	<0.05	<0.5	<0.5
H10370-2 STEPHENSON #1 N	<5	<0.05	<0.5	<0.5
H10370-3 STEPHENSON #2 S	<5	<0.05	<0.5	<0.5
H10370-4 OSBORN HOUSE #1	<5	<0.05	<0.5	<0.5
Quality Control	24.19	5.101	1.936	2.991
True Value QC	25.00	5.000	2.000	3.000
% Recovery	96.8	102	96.8	99.7
Relative Percent Difference	1.4	0.5	0.2	0.3
METHODS: EPA 600/04-79-020	202.1	219.1	220.1	236.1

Mn Mo Ni Zn  
 (ppm) (ppm) (ppm) (ppm)

ANALYSIS DATE:	11/08/05	11/08/05	11/08/05	11/08/05
H10370-1 MATHIS #1	<0.2	<1	0.294	<1
H10370-2 STEPHENSON #1 N	<0.2	<1	<0.2	<1
H10370-3 STEPHENSON #2 S	<0.2	<1	0.334	<1
H10370-4 OSBORN HOUSE #1	<0.2	<1	0.219	<1
Quality Control	1.954	4.933	5.033	0.497
True Value QC	2.000	5.000	5.000	0.500
% Recovery	98	98.7	101	99.4
Relative Percent Difference	0.2	2.4	0.6	0.7
METHODS: EPA 600/04-79-020	243.1	246.1	249.1	289.1

*Haye S. Madena*  
 Chemist

11-15-05  
 Date

H10370m3

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242

Receiving Date: 11/02/05  
 Reporting Date: 11/15/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

FAX TO: (505) 392-6949

Sampling Date: 11/02/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: NF  
 Analyzed By: HM

TOTAL METALS

LAB NUMBER SAMPLE ID Al (ppm) Co (ppm) Cu (ppm) Fe (ppm)

ANALYSIS DATE:	11/08/05	11/08/05	11/08/05	11/08/05
H10370-5 OSBORN EAST #3	<5	<0.05	<0.5	<0.5
H10370-6 OSBORN EAST #4	<5	0.069	<0.5	<0.5
H10370-7 OSBORN POND #5	<5	0.067	<0.5	<0.5
H10370-8 JCC #1	<5	0.076	<0.5	<0.5
Quality Control	24.19	5.101	1.936	2.991
True Value QC	25.00	5.000	2.000	3.000
% Recovery	96.8	102	96.8	99.7
Relative Percent Difference	1.4	0.5	0.2	0.3
METHODS: EPA 600/04-79-020	202.1	219.1	220.1	236.1

Mn (ppm) Mo (ppm) Ni (ppm) Zn (ppm)

ANALYSIS DATE:	11/08/05	11/08/05	11/08/05	11/08/05
H10370-5 OSBORN EAST #3	<0.2	<1	0.365	<1
H10370-6 OSBORN EAST #4	<0.2	<1	0.391	<1
H10370-7 OSBORN POND #5	<0.2	<1	0.386	<1
H10370-8 JCC #1	<0.2	<1	0.376	<1
Quality Control	1.954	4.933	5.033	0.497
True Value QC	2.000	5.000	5.000	0.500
% Recovery	98	98.7	101	99.4
Relative Percent Difference	0.2	2.4	0.6	0.7
METHODS: EPA 600/04-79-020	243.1	246.1	249.1	289.1

*Alex S. Marino*  
 Chemist

11-15-05  
 Date

H10370m4

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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242

Receiving Date: 11/02/05  
 Reporting Date: 11/15/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

FAX TO: (505) 392-6949

Sampling Date: 11/02/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: NF  
 Analyzed By: HM

TOTAL METALS

LAB NUMBER SAMPLE ID Al Co Cu Fe  
 (ppm) (ppm) (ppm) (ppm)

ANALYSIS DATE:	11/08/05	11/08/05	11/08/05	11/08/05
H10370-9 JCC #2	<5	0.068	<0.5	<0.5
H10370-10 JCC #3	<5	0.065	<0.5	<0.5
Quality Control	24.19	5.101	1.936	2.991
True Value QC	25.00	5.000	2.000	3.000
% Recovery	96.8	102	96.8	99.7
Relative Percent Difference	1.4	0.5	0.2	0.3
METHODS: EPA 600/04-79-020	202.1	219.1	220.1	236.1

Mn Mo Ni Zn  
 (ppm) (ppm) (ppm) (ppm)

ANALYSIS DATE:	11/08/05	11/08/05	11/08/05	11/08/05
H10370-9 JCC #2	<0.2	<1	<0.2	<1
H10370-10 JCC #3	<0.2	<1	<0.2	<1
Quality Control	1.954	4.933	5.033	0.497
True Value QC	2.000	5.000	5.000	0.500
% Recovery	98	98.7	101	99.4
Relative Percent Difference	0.2	2.4	0.6	0.7
METHODS: EPA 600/04-79-020	243.1	246.1	249.1	289.1

*Hope S. Medina*  
 Chemist

11-15-05  
 Date

H10370m5

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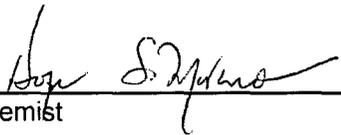
ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 11/02/05  
 Reporting Date: 11/09/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARS SLJU  
 Project Location: JAL, NM

Analysis Date: 11/03/05  
 Sampling Date: 11/02/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL & INTACT  
 Sample Received By: NF  
 Analyzed By: HM

LAB NUMBER	SAMPLE ID	NO3 (mg/L)
H10370-1	MATHIS #1	18.0
H10370-2	STEPHENSON #1 N	29.9
H10370-3	STEPHENSON #2 S	24.7
H10370-4	OSBORN HOUSE #1	2.01
H10370-5	OSBORN EAST #3	1.81
H10370-6	OSBORN EAST #4	4.33
H10370-7	OSBORN POND #5	5.57
H10370-8	JCC #1	21.7
H10370-9	JCC #2	18.3
H10370-10	JCC #3	2.12
Quality Control		3.10
True Value QC		3.00
% Recovery		103
Relative Percent Difference		1.7

METHOD: EPA 600/4-79-020, 353.3

  
 Chemist

11-15-05  
 Date

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# CARDINAL LABORATORIES, INC.

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

### BILL TO

### ANALYSIS REQUEST

Company Name: Eddie Spay Consulting P.O. #:

Project Manager: Eddie Spay Company:

Address: CDI w Tillman State: NM zip: 88242 Attn:

City: Hobbs Phone #: 2-2236 Fax #: 2-2849 Address:

Project #: Smith + Osborn Project Owner: R. Smith City: Ames

Project Name: Smith + Osborn State: NM Zip: 79603

Project Location: Tal NM Osborn Ranch Phone #:

Sampler Name: Edna Soa Fax #:

FOR LAB USE ONLY	Lab I.D.	Sample I.D.	MATRIX							PRESERV.		SAMPLING	ANALYSIS REQUEST						
			(GRAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:		ICE / COOL	OTHER:	DATE	TIME	BTEX	Cations	Anions
	H10370-1	Moffie #1	✓	4	✓								11/2	10:05	✓	✓	✓	✓	✓
		-2 Stephenson #1	✓	4	✓								11/2	10:40	✓	✓	✓	✓	✓
		-3 Stephenson #2-5	✓	4	✓								11/2	10:55	✓	✓	✓	✓	✓
		-4 Osborn House #1	✓	4	✓								11/2	11:25	✓	✓	✓	✓	✓
		-5 Osborn East #3	✓	4	✓								11/2	11:55	✓	✓	✓	✓	✓
		-6 Osborn East #4	✓	4	✓								11/2	12:05	✓	✓	✓	✓	✓
		-7 Osborn East #5	✓	4	✓								11/2	12:15	✓	✓	✓	✓	✓
		-8 Osborn East #1	✓	4	✓								11/2	1:05	✓	✓	✓	✓	✓
		-9 Osborn East #2	✓	4	✓								11/2	1:17	✓	✓	✓	✓	✓
		-10 Osborn East #3	✓	4	✓								11/2	1:25	✓	✓	✓	✓	✓

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Phone Results:  Yes  No  
 Fax Results:  Yes  No

Sampler Relinquished By: [Signature] Date: 11/2 Time: 3:30  
 Relinquished By: [Signature] Date: 11/2 Time: 3:30  
 Received By: [Signature] Date: 11/2 Time: 3:30  
 Received By: [Signature] Date: 11/2 Time: 3:30

Delivered By: (Circle One)  Sample  Temp.  Other:   
 Checked By: [Signature]  
 Temp. °C: 17  
 Other: 17

\* Cardinal cannot accept verbal changes. Please fax written changes to (325) 673-7020.



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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 11/10/05  
 Reporting Date: 11/15/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 11/10/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL & INTACT  
 Sample Received By: AH  
 Analyzed By: BC

LAB NO.	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		11/12/05	11/12/05	11/12/05	11/12/05
H10398-1	BAILEY #1	<0.002	<0.002	<0.002	<0.006
H10398-2	BAILEY #2D	<0.002	<0.002	<0.002	<0.006
Quality Control		0.097	0.097	0.100	0.307
True Value QC		0.100	0.100	0.100	0.300
% Recovery		96.7	96.7	100	102.0
Relative Percent Difference		14.6	3.7	5.8	4.6

METHOD: EPA SW-846 8260

*Burgess J. Cooke*  
 Chemist

*11/15/05*  
 Date

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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 11/10/05  
 Reporting Date: 11/15/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 11/10/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: AH  
 Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (uS/cm)	T-Alkalinity (mgCaCO <sub>3</sub> /L)
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ANALYSIS DATE:	11/15/05	11/14/05	11/14/05	11/14/05	11/14/05	11/14/05
H10398-1 BAILEY #1	619	179	67	20.3	4090	384
H10398-2 BAILEY #2D	157	29	37	5.40	1155	312
Quality Control	NR	53	46	2.94	1424	NR
True Value QC	NR	50	50	3.00	1413	NR
% Recovery	NR	105	91.4	98	101	NR
Relative Percent Difference	NR	2.0	4.0	4.7	2.3	NR
METHODS:	SM3500-Ca-D	3500-Mg E	8049	120.1	310.1	

Cl <sup>-</sup> (mg/L)	SO <sub>4</sub> (mg/L)	CO <sub>3</sub> (mg/L)	HCO <sub>3</sub> (mg/L)	pH (s.u.)	TDS (mg/L)
---------------------------	---------------------------	---------------------------	----------------------------	--------------	---------------

ANALYSIS DATE:	11/14/05	11/14/05	11/14/05	11/14/05	11/14/05	11/15/05
H10398-1 BAILEY #1	804	556	0	468	7.22	2831
H10398-2 BAILEY #2D	56	175	0	381	7.65	848
Quality Control	1000	58.36	NR	1049	7.00	NR
True Value QC	1000	50.00	NR	1000	7.00	NR
% Recovery	100	117	NR	105	100	NR
Relative Percent Difference	7.0	13	NR	8.5	0.1	1.1
METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

*Hope S. McCreary*  
 Chemist

11-23-05  
 Date

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ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242

Receiving Date: 11/10/05  
 Reporting Date 11/22/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

FAX TO: (505) 392-6949

Sampling Date: 11/10/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: AH  
 Analyzed By: HM

WQCC METALS

LAB NUMBER SAMPLE ID Al Co Cu Fe  
 (ppm) (ppm) (ppm) (ppm)

ANALYSIS DATE:	11/17/05	11/17/05	11/16/05	11/17/05
H10398-1 BAILEY #1	<5	<0.05	<0.5	<0.5
H10398-2 BAILEY #2D	<5	<0.05	<0.5	<0.5
Quality Control	8.994	3.969	2.959	3.020
True Value QC	10.00	4.000	3.000	3.000
% Recovery	90.0	99	98.6	101
Relative Percent Difference	3.8	0.3	1.0	0.3
METHODS: EPA 600/04-79-020	202.1	219.1	220.1	236.1

Mn Mo Ni Zn  
 (ppm) (ppm) (ppm) (ppm)

ANALYSIS DATE:	11/16/05	11/17/05	11/16/05	11/16/05
H10398-1 BAILEY #1	<0.2	<1	<0.2	<1
H10398-2 BAILEY #2D	<0.2	<1	<0.2	<1
Quality Control	3.275	1.074	2.994	0.302
True Value QC	3.000	1.000	3.000	0.300
% Recovery	109	107	99.8	101
Relative Percent Difference	0.3	1.9	0.9	0.6
METHODS: EPA 600/04-79-020	243.1	246.1	249.1	289.1

*Hope S. Meyers*  
 Chemist

11-23-05  
 Date

H10398m2

PLEASE NOTE: **Liability and Damages.** Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 EDDIE SEAY CONSULTING  
 ATTN: EDDIE SEAY  
 601 W. ILLINOIS  
 HOBBS, NM 88242  
 FAX TO: (505) 392-6949

Receiving Date: 11/10/05  
 Reporting Date: 11/22/05  
 Project Owner: R. SMITH  
 Project Name: SMITH & MARRS SLJU  
 Project Location: JAL, NM

Sampling Date: 11/10/05  
 Sample Type: GROUNDWATER  
 Sample Condition: COOL AND INTACT  
 Sample Received By: AH  
 Analyzed By: HM

WQCC METALS

LAB NUMBER SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
----------------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

ANALYSIS DATE:	11/17/05	11/16/05	11/14/05	11/16/05	11/16/05	11/17/05	11/15/05	11/22/05
H10398-1 BAILEY #1	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.1
H10398-2 BAILEY #2D	<0.05	<0.05	<1	<0.01	<0.05	<0.05	<0.002	<0.1
Quality Control	0.047	5.155	48.49	1.980	1.940	5.138	0.0052	52.55
True Value QC	0.050	5.000	50.00	2.000	2.000	5.000	0.0060	50.00
% Recovery	94.0	103	97.0	99.0	97.0	103	86.5	105.0
Relative Percent Difference	1.2	0.2	1.1	0.2	1.0	1.7	13.5	2.3

METHODS: EPA 600/4-79-020	206.2	272.1	208.1	213.1	218.2	239.1	245.1	270.2
METHODS: SW-846	7060A	7760A	7080A	7130	7190	7420	7470A	7740

*Hope S. M...*  
 Chemist

11-23-05  
 Date

H10398m

PLEASE NOTE: **Liability and Damages.** Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



Analytical Laboratory Report for:  
**CHAPARRAL SERVICES, INC.**



**Chemical Services**

Account Representative: Hay, Joe

## Partial Water Analysis

Listed below please find water analysis report from: Salado, 1

Lab Test No: 2003151294      Sample Date: 12/10/2003  
 Specific Gravity:

TDS:  
 pH: 7.99

Cations:	mg/L	as:
Calcium	45.00	(Ca <sup>++</sup> )
Magnesium	43.00	(Mg <sup>++</sup> )
Sodium	275	(Na <sup>+</sup> )
Iron	0.00	(Fe <sup>++</sup> )
Barium	0.01	(Ba <sup>++</sup> )
Strontium	1.60	(Sr <sup>++</sup> )
Manganese	0.01	(Mn <sup>++</sup> )
Anions:	mg/L	as:
Bicarbonate	379	(HCO <sub>3</sub> <sup>-</sup> )
Sulfate	400	(SO <sub>4</sub> <sup>-</sup> )
Chloride	100	(Cl <sup>-</sup> )
Gases:		
Carbon Dioxide		(CO <sub>2</sub> )
Hydrogen Sulfide		(H <sub>2</sub> S)

Lab measured pH  
 Lab measured alkalinity

Calcium	45.00	(Ca <sup>++</sup> )
Magnesium	43.00	(Mg <sup>++</sup> )
Sodium	275	(Na <sup>+</sup> )
Iron	0.00	(Fe <sup>++</sup> )
Barium	0.01	(Ba <sup>++</sup> )
Strontium	1.60	(Sr <sup>++</sup> )
Manganese	0.01	(Mn <sup>++</sup> )
Bicarbonate	379	(HCO <sub>3</sub> <sup>-</sup> )
Sulfate	400	(SO <sub>4</sub> <sup>-</sup> )
Chloride	100	(Cl <sup>-</sup> )
Carbon Dioxide		(CO <sub>2</sub> )
Hydrogen Sulfide		(H <sub>2</sub> S)

Analytical Laboratory Report for:  
**CHAPARRAL SERVICES, INC.**



**Chemical Services**

Account Representative: Hay, Joe

## Partial Water Analysis

Listed below please find water analysis report from: Salado, 2

Lab Test No: 2003151295      Sample Date: 12/10/2003  
Specific Gravity:

TDS:

pH: 7.61

Cations:	mg/L	as:
Calcium	57.00	(Ca <sup>++</sup> )
Magnesium	53.00	(Mg <sup>++</sup> )
Sodium	329	(Na <sup>+</sup> )
Iron	0.00	(Fe <sup>++</sup> )
Barium	0.04	(Ba <sup>++</sup> )
Strontium	2.30	(Sr <sup>++</sup> )
Manganese	0.01	(Mn <sup>++</sup> )
Anions:	mg/L	as:
Bicarbonate	329	(HCO <sub>3</sub> <sup>-</sup> )
Sulfate	250	(SO <sub>4</sub> <sup>=</sup> )
Chloride	246	(Cl <sup>-</sup> )
Gases:		
Carbon Dioxide		(CO <sub>2</sub> )
Hydrogen Sulfide		(H <sub>2</sub> S)

Lab measured pH  
Lab measured alkalinity

Analytical Laboratory Report for:  
**CHAPARRAL SERVICES, INC.**



**Chemical Services**

Account Representative: Hay, Joe

## Partial Water Analysis

Listed below please find water analysis report from: Salado, 3

Lab Test No: 2003151296      Sample Date: 12/10/2003  
Specific Gravity:

TDS:  
pH: 7.79

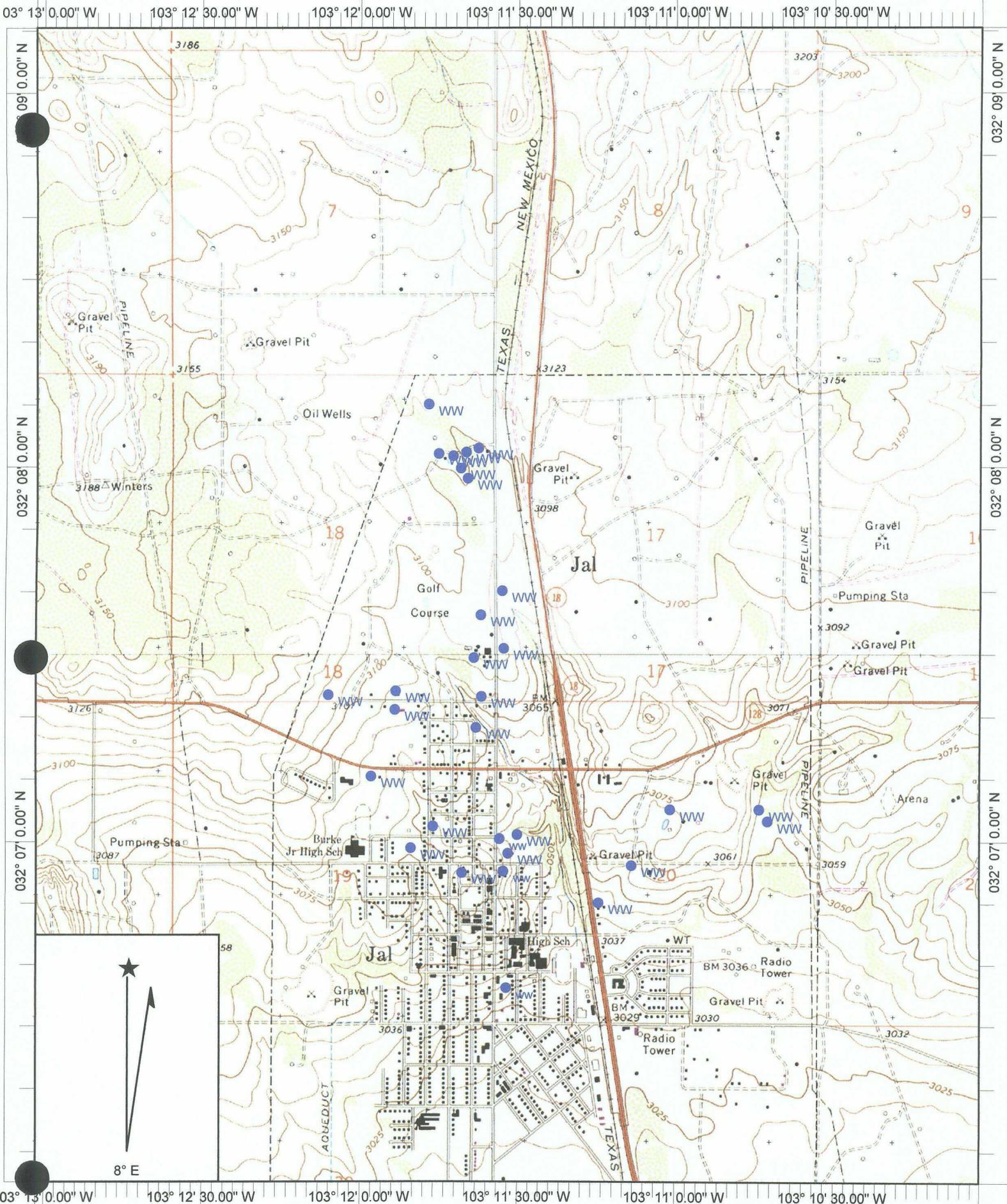
Cations:	mg/L	as:
Calcium	50.00	(Ca <sup>++</sup> )
Magnesium	45.00	(Mg <sup>++</sup> )
Sodium	280	(Na <sup>+</sup> )
Iron	0.00	(Fe <sup>++</sup> )
Barium	0.03	(Ba <sup>++</sup> )
Strontium	1.90	(Sr <sup>++</sup> )
Manganese	0.01	(Mn <sup>++</sup> )
Anions:	mg/L	as:
Bicarbonate	454	(HCO <sub>3</sub> <sup>-</sup> )
Sulfate	350	(SO <sub>4</sub> <sup>-</sup> )
Chloride	172	(Cl <sup>-</sup> )
Gases:		
Carbon Dioxide		(CO <sub>2</sub> )
Hydrogen Sulfide		(H <sub>2</sub> S)

Lab measured pH  
Lab measured alkalinity

MAILED TO  
WAYNE PRICE  
12-23-03

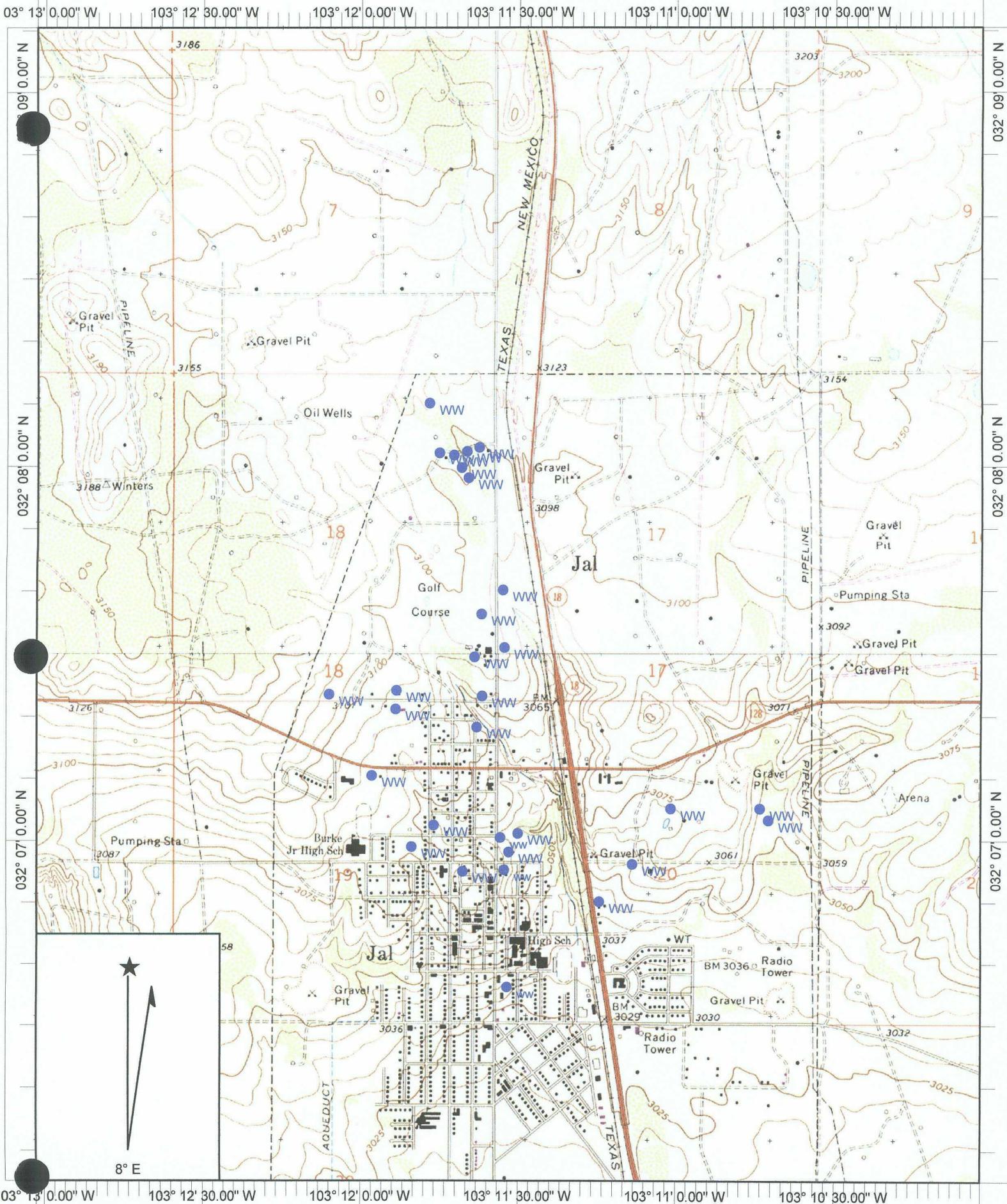
APPENDIX 6

D. DOMESTIC WATER WELL  
LOCATION MAP



Name: JAL NW  
 Date: 12/20/2005  
 Scale: 1 inch equals 2000 feet

Location: 032° 07' 37.85" N 103° 11' 31.97" W  
 Caption: Jal, New Mexico  
 Water Well Locations  
 NM State Engineers Database



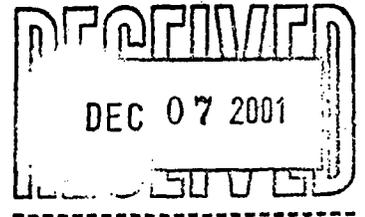
Name: JAL NW  
 Date: 12/20/2005  
 Scale: 1 inch equals 2000 feet

Location: 032° 07' 37.85" N 103° 11' 31.97" W  
 Caption: Jal, New Mexico  
 Water Well Locations  
 NM State Engineers Database

APPENDIX 6

E. ADDITIONAL RESEARCH

# E.O.T.T. Energy Pipeline



## CLAY OSBORN RANCH HOUSE WATER WELLS SAMPLING EVENT

Section 18 T25S R37E  
-½ mile North of Jal, Lea County, New Mexico

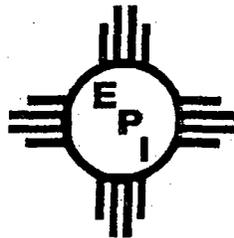
OF

OCTOBER 22, 2001

## NARRATIVE & ANALYTICAL RESULTS

Prepared by

Environmental Plus, Inc.  
2100 Avenue O  
P.O. Box 1558  
Eunice, New Mexico 88231  
Tele 505-394-3481 FAX 505-394-2601



## Clay Osborn House Wells Sampling Event

October 22, 2001 @ 0930 hours

### Present:

- Lisa Brown, New Mexico Environment Department (NMED), Drinking Water Bureau
- Rozanne Johnson, NMED, Drinking Water Bureau
- Mark Fletcher, Hobbs News Sun, Reporter
- Tammy McKinley, Hobbs News Sun, Photographer
- Pat McCasland, Environmental Plus, Inc., representing E.O.T.T. Energy Pipeline
- Darrold and JoAnn Stephenson, Lea County Commissioner, Jal resident
- Clay and Jerry Osborn, residents

### Background

E.O.T.T. Energy Pipeline (EOTT) is in the process of investigating and remediating several historical crude oil release sites on the Rocky Top Ranch owned by Clay and Jerry Osborn; all sites are located west of the ranch headquarters, the "EOTT Clay Osborn Jalmat #1" site is located ~.8 mile northwest and up gradient. The Osborn's reside in the headquarter dwelling located less than one half mile north of Jal, New Mexico and are currently using the three wells for agricultural and domestic purposes only. Drinking water is purchased locally.

During site investigation activities at the "EOTT Clay Osborn Jalmat #1" site (ref.# 2000-10606) in July 2001, ground water was encountered at ~45' bgs and subsequently sampled for the New Mexico Water Quality Control Commission (WQCC) ground water parameters. Analyses revealed that Iron, Manganese, Aluminum, Boron, Fluoride, Chloride, Sulfate, Total Dissolved Solids, and Total Mercury were observed to be elevated above the reference data from the "EOTT Clay Osborn Jalmat #22A" site Pond Well concentrations and the New Mexico WQCC standards. In addition, nominal concentrations of Lead, Benzene, Toluene, Xylene, and Naphthalene were detected but are an order of magnitude below the standards. The EOTT crude oil source term/waste stream is restricted to hydrocarbon and is not considered the source of the inorganic contamination. The analytical laboratory, AnalySys, Inc. of Austin, Texas confirmed that the quality control/quality assurance documentation supporting the results was legitimate and that there were no procedural upsets during the analyses. Subsequently, EPI on behalf of and with the direction from EOTT, notified the NMOCD Santa Fe and Hobbs offices of the exceedances in accordance with the requirements of 19 NMAC 15.116. The Osborns were also notified. The "EOTT Clay Osborn Jalmat #22A" site Pond Well was installed during the 1990's to monitor ground water following a Texas-New Mexico Pipeline leak and is located transverse gradient and ~1 mile southeast of the ranch house wells and is currently representative of historic background levels.

The Stepensions live approximately 1 mile south southwest of the Osborn residence and use two water wells for drinking and domestic and agricultural purposes. In October 2001, elevated levels of Mercury were detected in Joann Stephenson. In an effort to identify the source(s) of the Mercury, the Osborns and Stepensions reviewed ground water data available for their wells to but found that Mercury had not be tested for. On the recommendation of the Doctor, Mrs. Stephenson had all amalgam dental work removed and begin using verifiably clean drinking water.

Subsequently, with assistance from the New Mexico Oil Conservation Division and the NMED Hazardous and Radioactive Materials Bureau, the NMED Drinking Water Bureau agreed to collect and analyze well samples as a courtesy to the residents. EOTT's request to collect and analyze split samples was also granted. The sampling event occurred on Monday October 22, 2001 beginning at 9:30 A.M. at the Osborn's residence. An article concerning the event and local environmental issues appeared in the October 28, 2001 Hobbs News Sun.

On Friday October 19, 2001, during ranch reconnaissance, Clay Osborn observed small droplets of elemental Mercury present on the soil surface beneath an abandoned 4" natural gas pipeline metering loop located less than .5 mile west and up-gradient of his dwelling. The NMED and the Hobbs News Sun toured the location on October 22, 2001 and observed the Mercury. Mr. Osborn said the NMED Hazardous and Radioactive Materials Bureau is planning to investigate the site.

#### Sampling Event 10-22-01

The wells were purged for at least 5 minutes before sampling. The NMED collected a one gallon aliquot in a certifiably clean cubitainer and decanted/split the sample into two quart cubitainers. The samples were preserved with 5 ml of concentrated Nitric Acid provided by the NMED and not filtered. EPI accepted each split sample on behalf of EOTT and placed on ice. The NMED samples were analyzed by the New Mexico State Laboratory Division (SLD) in Albuquerque, New Mexico and the EOTT samples by AnalySys, Inc. of Austin, Texas.

#### Sample Identification

NMED#: Private Homeowner - Clay Osborn Well #1 (east house well) @10:00  
EOTT #: ECO102201-EHWell (Clay Osborn East House Well)

NMED#: Private Homeowner - Clay Osborn Well #2 (middle house well) @ 10:21  
EOTT #: ECO102201-MHWell (Clay Osborn Middle House Well)

NMED#: Private Homeowner - Clay Osborn Well #3 (west house well) @ 10:39  
EOTT #: ECO102201-EHWell (Clay Osborn West House Well)

NMED#: Private Homeowner - Darrold Stephenson Well #1 (Goedcke well) @ 11:05  
EOTT #: EDS102201- Well#1 (Did not Analyze)

NMED#: Private Homeowner - Darrold Stephenson Well #2 (south well) @ 11:23  
EOTT #: EDS102201-Well#2 (Did not Analyze)

#### Analytical Suite

- New Mexico Safe Drinking Water Act Group I inorganics and Maximum Contaminant Levels (MCLs), i.e.,

Antimony (0.006 mg/L)	Cadmium (0.005 mg/L)	Selenium (0.05 mg/L)
Arsenic (0.05 mg/L)	Chromium (0.1 mg/L)	Thallium (0.002 mg/L)
Barium (2 mg/L)	Mercury (0.002 mg/L)	
Beryllium (0.004 mg/L)	Nickel (0.1 mg/L)	

- Lead (0.015 mg/L)

### Discussion of Data

Please note that the Stephenson well samples were accepted but not analyzed. There were no exceedances of the MCLs observed in the Clay Osborn water well data. Barium was detected in each of the Osborn wells but only nominally and 3 orders of magnitude below the MCL. Chromium was detected above the detection limit in the Clay Osborn West House Well at 0.0062 mg/L, just above the instrument detection limit and 3 orders of magnitude below the MCL of 0.01 mg/L. The original analytical reports are attached and summarized below.

Clay Osborn Ranch House Wells Data Summary					
Parameter	Units	MCL	West House Well	Middle House Well	East House Well
			ECO102201-WHWell	ECO102201-MHWell	ECO102201-EHWell
Antimony	mg/L	0.006	<0.003	<0.003	<0.003
Arsenic	mg/L	0.05	<0.02	<0.05	<0.05
Barium	mg/L	2	0.0385	0.0599	0.0345
Beryllium	mg/L	0.004	<0.001	<0.004	<0.004
Cadmium	mg/L	0.005	<0.002	<0.005	<0.005
Chromium	mg/L	0.1	0.0062	<0.01	<0.01
Lead	mg/L	0.015	<0.01	<0.01	<0.01
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002
Nickel	mg/L	0.1	<0.01	<0.02	<0.02
Selenium	mg/L	0.05	<0.02	<0.05	<0.05
Thallium	mg/L	0.002	<0.002	<0.002	<0.002

## SCIENTIFIC LABORATORY DIVISION

P.O Box 4700  
Albuquerque, NM 87196-4700  
AIR & HEAVY METALS SECTION

700 Camino de Salud, NE  
(505)-841-2500  
(505)-841-2553

SAMPLE COLLECTION: DATE: 10/22/01 TIME: 10:00  
MATRIX: wpn BY: BROWN  
FACILITY: PRIVATE HOMEOWNER - CLAY OSBORN  
SAMPLING LOCATION: WELL #1

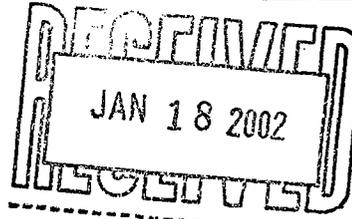
To: Submitter

NMED Field Office, Clovis  
100 East Manana, Suite 3  
Clovis, NM 88101

SLD No.: HMI-200102995

REQUEST ID No.: 2309987  
RECEIVED AT SLD: 10/25/01  
USER: 55420  
SUBMITTER: 65  
WSS #:

DISTRIBUTION TO:  
Submitter  
SLD Files



Practical Quantitation Limit (PQL) is defined as 10 times the Method Detection Limit (MDL)

## ANALYTICAL RESULTS

Element	Result	Units	Analysis Date	Method	PQL	Dilution Factor	Sample Det. Limit	Analyst	Data Qualifier
Antimony	<0.001	mg/L	1/9/02	200.8	0.001	1	0.001	JFA	C
Arsenic	0.013	mg/L	1/9/02	200.8	0.001	2	0.002	JFA	CO
Barium	<0.1	mg/L	1/9/02	200.8	0.1	1	0.1	JFA	C
Beryllium	<0.002	mg/L	1/9/02	200.8	0.001	2	0.002	JFA	CO
Cadmium	<0.001	mg/L	1/9/02	200.8	0.001	1	0.001	JFA	C
Chromium	<0.002	mg/L	1/9/02	200.8	0.001	2	0.002	JFA	CO
Lead	0.001	mg/L	1/9/02	200.8	0.001	1	0.001	JFA	C
Mercury	<0.0002	mg/L	11/9/01	245.1	0.0002	1	0.0002	NCB	
Nickel	<0.02	mg/L	1/9/02	200.8	0.01	2	0.02	JFA	CO
Selenium	0.013	mg/L	11/16/01	200.9	0.005	1	0.005	JM/GP	
Thallium	<0.001	mg/L	1/9/02	200.8	0.001	1	0.001	JFA	C

## Laboratory Comments:

Reviewed by: Ron Amato  
Supervisor, Air & Heavy Metals Section  
Printed: 1/15/02

QNB

## Data Qualifier Codes and Definitions

A = Insufficient sample for analysis  
B = Laboratory Reagent Blank (RB)  
C = Spike recovery between 80-120%  
D = Spike recovery <80% or >120%  
E = Over Calibration Range  
F = Matrix interference suspected  
G = Inconsistent results  
H = Analyzed in duplicate  
I = Analyzed in Triplicate  
J = Estimated Quantity only.  
K = Holding time exceeded  
L = Equals or exceeds USEPA MCL  
M = Equals or exceeds USEPA action level  
N = Insufficient sample to verify results  
O = Internal Standards(ICP-MS) <60% or >125% when analyzed straight  
R = The data are unusable



2309987



Scientific Laboratory Division  
700 Camino de Salud, NE (P.O. Box 4700)  
Albuquerque, NM 87106 (87196-4700)  
Phone: 505-841-2500/-2553/-2593



For SLD Use Only:

HM- -

<sup>3</sup> User Code: <u>55420</u>	Date & Time of Receipt at SLD:	<sup>4</sup> Sample Priority: <u>3</u> If 1 or 2 call SLD
--------------------------------------	--------------------------------	---

<sup>5</sup> Submitter Code: <u>1065</u>	WSS Code:	User's Site ID: <u>WS10518</u>	<sup>6</sup> Sample Temp. Receipt @ SLD: _____ °
--	-----------	--------------------------------	--

<sup>7</sup> Facility or WSS Name: Private Homeowner - Clay Osborn

Facility/WSS Location: <u>Complete 8, 9 &amp; 10</u>	<sup>8</sup> County: <u>Lea</u>	<sup>9</sup> City: <u>Jal</u>	<sup>10</sup> State: or CHANGE <u>NM</u> TO
--	---------------------------------	-------------------------------	---

<sup>11</sup> Sampling Location: Well # 1

<sup>12</sup> Sample Collection: On: 10/22/01 By: Brown  
Date: MM / DD / YY Last Name  
At: 10:00 LISA  
Time: 24:00 Hour Clock First Name

<sup>13</sup> Sample Info. Contact: Ph: [505]-762-3728 If not collector, per box 12, Please print name here: \_\_\_\_\_

<sup>14</sup> Reports are mailed to the address specified by the Submitter Code and WSS Code (when present). However, if one of the following applies, please check  appropriate boxes below and complete address form.

New Address for:  Send an additional Report to  Submitter  WSS / Client

Name: Clay Osborn  
Address: #1 Rocky Top Lane / P.O. Box 1285  
City: Jal State: NM Zip: 88252

<sup>15</sup> Sampling Documentation (Check)	<sup>16a</sup> Field Data: (When appropriate)	<sup>16b</sup> Field Remarks: (Optional)
<input type="checkbox"/> NMED Monitoring <input type="checkbox"/> Split w/ Facility <input type="checkbox"/> Compliance <input type="checkbox"/> Confirmation <input checked="" type="checkbox"/> Non-compliance <input type="checkbox"/> Influent <input checked="" type="checkbox"/> Grab Sample <input type="checkbox"/> Effluent	pH: _____; Temperature: _____ °C Conductivity: _____ umhos/cm Chlorine Residual: _____ mg/L	<u>well #1 - tap near pressure tank under windmill.</u>

<sup>17</sup> Sample Type:

<input type="checkbox"/> Water, Not Preserved, Not-Filtered (WNN)	<input type="checkbox"/> Soil/Sediment	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Water, Not Preserved, Filtered (WNF)	<input type="checkbox"/> Blood	_____
<input checked="" type="checkbox"/> Water, Preserved, Not-Filtered (WPN)	<input type="checkbox"/> Tissue	_____
<input type="checkbox"/> Water, Preserved, Filtered (WPF)	<input type="checkbox"/> Air Filter	_____

<sup>18</sup> Analyses Requested: Please Check  the appropriate box(es) below to indicate your analytical request(s).

Group Analyses:

- ICP Scan                       - SDWA Group I                       - SDWA Lead & Copper

Single Metals as marked:

<input type="checkbox"/> -Aluminum	<input type="checkbox"/> -Copper	<input type="checkbox"/> -Selenium	<input type="checkbox"/> -_____	<input type="checkbox"/> -_____
<input type="checkbox"/> -Arsenic	<input type="checkbox"/> -Iron	<input type="checkbox"/> -Uranium	<input type="checkbox"/> -_____	<input type="checkbox"/> -_____
<input type="checkbox"/> -Cadmium	<input checked="" type="checkbox"/> -Lead	<input type="checkbox"/> -Vanadium	<input type="checkbox"/> -_____	<input type="checkbox"/> -_____
<input type="checkbox"/> -Chromium	<input type="checkbox"/> -Mercury	<input type="checkbox"/> -Zinc	<input type="checkbox"/> -_____	<input type="checkbox"/> -_____

Additional Metals: (Please List)

Remarks by Laboratory: \_\_\_\_\_

**SCIENTIFIC LABORATORY DIVISION**

P.O Box 4700  
 Albuquerque, NM 87196-4700  
 AIR & HEAVY METALS SECTION

700 Camino de Salud, NE  
 (505)-841-2500  
 (505)-841-2553

SAMPLE COLLECTION: DATE: 10/22/01 TIME: 10:21  
 MATRIX: wpn BY: BROWN  
 FACILITY: PRIVATE HOMEOWNER - CLAY OSBORN  
 SAMPLING LOCATION: WELL #2

**SLD No.:** HM-200102996  
**REQUEST ID No.:** 2309988  
**RECEIVED AT SLD:** 10/25/01  
**USER:** 55420  
**SUBMITTER:** 65  
**WSS #:**

To: Submitter

NMED Field Office, Clovis  
 100 East Manana, Suite 3  
 Clovis, NM 88101

DISTRIBUTION TO:  
 Submitter  
 Client  
 SLD Files

Practical Quantitation Limit (PQL) is defined as 10 times the Method Detection Limit (MDL)

**ANALYTICAL RESULTS**

Element	Result	Units	Analysis		PQL	Dilution Factor	Sample		Data Qualifier
			Date	Method			Det. Limit.	Analyst	
Antimony	<0.001	mg/L	1/8/02	200.8	0.001	1	0.001	SMP	
Arsenic	0.011	mg/L	12/17/01	200.8	0.001	1	0.001	JFA	CH
Barium	<0.1	mg/L	1/8/02	200.8	0.1	1	0.1	SMP	
Beryllium	<0.001	mg/L	1/8/02	200.8	0.001	1	0.001	SMP	
Cadmium	<0.001	mg/L	12/17/01	200.8	0.001	1	0.001	JFA	CH
Chromium	<0.001	mg/L	1/8/02	200.8	0.001	1	0.001	SMP	
Lead	0.002	mg/L	1/8/02	200.8	0.001	1	0.001	SMP	
Mercury	<0.0002	mg/L	11/9/01	245.1	0.0002	1	0.0002	NCB	
Nickel	0.02	mg/L	1/8/02	200.8	0.01	1	0.01	SMP	
Selenium	0.017	mg/L	11/16/01	200.9	0.005	1	0.005	JM/CP	
Thallium	<0.001	mg/L	1/8/02	200.8	0.001	1	0.001	SMP	

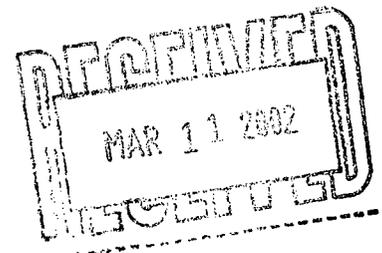
**Laboratory Comments:**

Reviewed by: Ron Amato  
 Supervisor, Air & Heavy Metals Section  
 Printed: 2/26/02

QNB

Data Qualifier Codes and Definitions

- A = Insufficient sample for analysis
- B = Laboratory Reagent Blank (RB)
- C = Spike recovery between 80-120%
- D = Spike recovery <80% or >120%
- E = Over Calibration Range
- F = Matrix interference suspected
- G = Inconsistent results
- H = Analyzed in duplicate
- I = Analyzed in Triplicate
- J = Estimated Quantity only.
- K = Holding time exceeded
- L = Equals or exceeds USEPA MCL
- M = Equals or exceeds USEPA action level
- N = Insufficient sample to verify results
- O = Internal Standards(ICP-MS) <60% or >125% when analyzed straight.
- R = The data are unusable



**SCIENTIFIC LABORATORY DIVISION**

P.O Box 4700

700 Camino de Salud, NE

Albuquerque, NM 87196-4700

(505)-841-2500

AIR & HEAVY METALS SECTION

(505)-841-2553

SAMPLE COLLECTION: DATE: 10/22/01 TIME: 10:21  
 MATRIX: wpn BY: BROWN  
 FACILITY: PRIVATE HOMEOWNER - CLAY OSBORN  
 SAMPLING LOCATION: WELL #2

**SLD No.:** HM-200102996  
**REQUEST ID No.:** 2309988  
**RECEIVED AT SLD:** 10/25/01  
**USER:** 55420  
**SUBMITTER:** 65  
**WSS #:**

To: Submitter

NMED Field Office, Clovis  
 100 East Manana, Suite 3  
 Clovis, NM 88101

DISTRIBUTION TO:  
 Submitter  
 SLD Files

Practical Quantitation Limit (PQL) is defined as 10 times the Method Detection Limit (MDL)

**ANALYTICAL RESULTS**

Element	Result	Units	Analysis Date	Method	PQL	Dilution Factor	Sample Det. Limit.	Analyst	Data Qualifier
Antimony	<0.001	mg/L	1/8/02	200.8	0.001	1	0.001	SMP	
Arsenic	0.011	mg/L	12/17/01	200.8	0.001	1	0.001	JFA	C H
Barium	<0.1	mg/L	1/8/02	200.8	0.1	1	0.1	SMP	
Beryllium	<0.001	mg/L	1/8/02	200.8	0.001	1	0.001	SMP	
Cadmium	<0.001	mg/L	12/17/01	200.8	0.001	1	0.001	JFA	C H
Chromium	<0.001	mg/L	1/8/02	200.8	0.001	1	0.001	SMP	
Lead	<0.005	mg/L	12/3/01	200.9	0.005	1	0.005	NCB	
Mercury	<0.0002	mg/L	11/9/01	245.1	0.0002	1	0.0002	NCB	
Nickel	0.02	mg/L	1/8/02	200.8	0.01	1	0.01	SMP	
Selenium	0.017	mg/L	11/16/01	200.9	0.005	1	0.005	JM/CP	
Thallium	<0.001	mg/L	1/8/02	200.8	0.001	1	0.001	SMP	

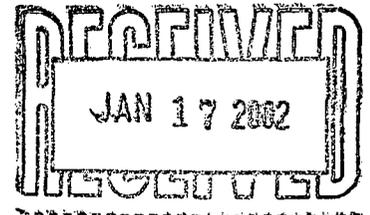
**Laboratory Comments:**

Reviewed by: Ron Amato  
 Supervisor, Air & Heavy Metals Section  
 Printed: 1/14/02

QNB

Data Qualifier Codes and Definitions

- A = Insufficient sample for analysis
- B = Laboratory Reagent Blank (RB)
- C = Spike recovery between 80-120%
- D = Spike recovery <80% or >120%
- E = Over Calibration Range
- F = Matrix Interference suspected
- G = Inconsistent results
- H = Analyzed in duplicate
- I = Analyzed in Triplicate
- J = Estimated Quantity only.
- K = Holding time exceeded
- L = Equals or exceeds USEPA MCL
- M = Equals or exceeds USEPA action level
- N = Insufficient sample to verify results
- O = Internal Standards(ICP-MS) <60% or >125% when analyzed straight
- R = The data are unusable



HEAVY METAL ANALYTICAL REQUEST FORM

SLD's Accession No



2309988



Scientific Laboratory Division
700 Camino de Salud, NE (P.O. Box 4700)
Albuquerque, NM 87106 (87196-4700)
Phone: 505-841-2500/-2553/-2593



For H



HM0102996

3 User Code: 5154120 Date & Time of Receipt at SLD: 01 OCT 25 AM 8:22 4 Sample Priority: 3 If 1 or 2 call SLD

5 Submitter Code: 1065 WSS Code: - User's Site ID: N5105118 6 Sample Temp. Receipt @ SLD: 9 °C

7 Facility or WSS Name: Private Homeowner - Clay Osborn

8 County: Lea 9 City: Jal 10 State: or CHANGE NM TO

11 Sampling Location: Well # 2

12 Sample Collection: On: 10/22/01 By: BROWN At: 10:21 Liisa

13 Sample Info. Contact: Ph: 505-762-3728 If not collector, per box 12, Please print name here:

14 Reports are mailed to the address specified by the Submitter Code and WSS Code (when present). However, if one of the following applies, please check appropriate boxes below and complete address form. Name: Clay Osborn Address: #1 Rocky Top Lane / P.O. Box 1285 City: Jal State: NM Zip: 88252

15 Sampling Documentation (Check) 16a Field Data: (When appropriate) 16b Field Remarks: (Optional) Well #2 = near cattle pens / North of House

17 Sample Type: Water, Not Preserved, Not-Filtered (WNN) Water, Not Preserved, Filtered (WNF) Water, Preserved, Not-Filtered (WPN) Water, Preserved, Filtered (WPF) Soil/Sediment Blood Tissue Air Filter Other:

18 Analyses Requested: Please Check the appropriate box(es) below to indicate your analytical request(s).

Group Analyses: - ICP Scan - SDWA Group I - SDWA Lead & Copper Single Metals as marked: Aluminum Copper Selenium Arsenic Iron Uranium Cadmium Lead Vanadium Chromium Mercury Zinc Additional Metals: (Please List)

Remarks by Laboratory: 0.143

**SCIENTIFIC LABORATORY DIVISION**

P.O Box 4700 700 Camino de Salud, NE  
 Albuquerque, NM 87196-4700 (505)-841-2500  
 AIR & HEAVY METALS SECTION (505)-841-2553

SAMPLE COLLECTION: DATE: 10/22/01 TIME: 10:39  
 MATRIX: wpn BY: BROWN  
 FACILITY: PRIVATE HOMEOWNER - CLAY OSBORN  
 SAMPLING LOCATION: WELL #3

SLD No.: HM-200102997  
 REQUEST ID No.: 2309989  
 RECEIVED AT SLD: 10/25/01  
 USER: 55420  
 SUBMITTER: 65  
 WSS #:

To: Submitter

NMED Field Office, Clovis  
 100 East Manana, Suite 3  
 Clovis, NM 88101

DISTRIBUTION TO:  
 Submitter  
 Client  
 SLD Files

Practical Quantitation Limit (PQL) is defined as 10 times the Method Detection Limit (MDL)

**ANALYTICAL RESULTS**

Element	Result	Units	Analysis Date	Method	PQL	Dilution Factor	Sample Det. Limit	Analyst	Data Qualifier
Antimony	<0.001	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Arsenic	0.008	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Barium	<0.1	mg/L	12/19/01	200.8	0.1	1	0.1	JFA	
Beryllium	<0.001	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Cadmium	<0.001	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Chromium	0.006	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Lead	0.003	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Mercury	<0.0002	mg/L	11/9/01	245.1	0.0002	1	0.0002	NCB	
Nickel	<0.01	mg/L	12/19/01	200.8	0.01	1	0.01	JFA	
Selenium	0.009	mg/L	11/16/01	200.9	0.005	1	0.005	JM/CP	C
Thallium	<0.001	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	

**Laboratory Comments:**

Sample digested using SLD Method 41414.

Reviewed by: Ron Amato

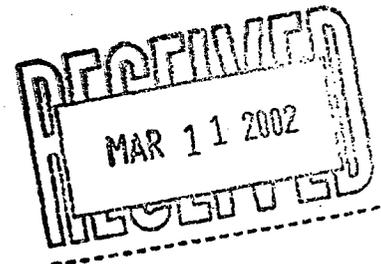
Supervisor, Air & Heavy Metals Section

Printed: 2/26/02

QNB

Data Qualifier Codes and Definitions

- A = Insufficient sample for analysis
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- E = Over Calibration Range
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- M = Equals or exceeds USEPA action level
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**SCIENTIFIC LABORATORY DIVISION**

P.O Box 4700 700 Camino de Salud, NE  
 Albuquerque, NM 87196-4700 (505)-841-2500  
 AIR & HEAVY METALS SECTION (505)-841-2553

SAMPLE COLLECTION: DATE: 10/22/01 TIME: 10:39  
 MATRIX: wpn BY: BROWN  
 FACILITY: PRIVATE HOMEOWNER - CLAY OSBORN  
 SAMPLING LOCATION: WELL #3

SLD No.: HM-200102997  
 REQUEST ID No.: 2309989  
 RECEIVED AT SLD: 10/25/01  
 USER: 55420  
 SUBMITTER: 65  
 WSS #:   
 \_\_\_\_\_

To: Submitter

NMED Field Office, Clovis  
 100 East Manana, Suite 3  
 Clovis, NM 88101

DISTRIBUTION TO:  
 Submitter  
 SLD Files

Practical Quantitation Limit (PQL) is defined as 10 times the Method Detection Limit (MDL)

**ANALYTICAL RESULTS**

Element	Result	Units	Analysis Date	Method	PQL	Dilution Factor	Sample Det. Limit	Analyst	Data Qualifier
Antimony	<0.001	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Arsenic	0.008	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Barium	<0.1	mg/L	12/19/01	200.8	0.1	1	0.1	JFA	
Beryllium	<0.001	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Cadmium	<0.001	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Chromium	0.006	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Lead	0.003	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	
Mercury	<0.0002	mg/L	11/9/01	245.1	0.0002	1	0.0002	NCB	
Nickel	<0.01	mg/L	12/19/01	200.8	0.01	1	0.01	JFA	
Selenium	0.009	mg/L	11/16/01	200.9	0.005	1	0.005	JM/CP	C.H
Thallium	<0.001	mg/L	12/19/01	200.8	0.001	1	0.001	JFA	

**Laboratory Comments:**

Sample digested using SLD Method 41414.

Reviewed by: Ron Amato

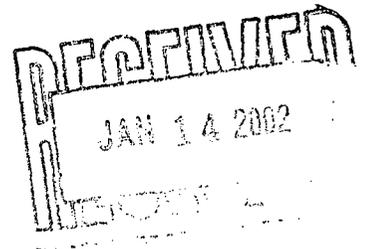
Supervisor, Air & Heavy Metals Section

Printed: 1/9/02

GNB

Data Qualifier Codes and Definitions

- A = Insufficient sample for analysis
- B = Laboratory Reagent Blank (RB)
- C = Spike recovery between 80-120%
- D = Spike recovery <80% or >120%
- E = Over Calibration Range
- F = Matrix interference suspected
- G = Inconsistent results
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- J = Estimated Quantity only.
- K = Holding time exceeded
- L = Equals or exceeds USEPA MCL
- M = Equals or exceeds USEPA action level
- N = Insufficient sample to verify results
- O = Internal Standards(ICP-MS) <60% or >125% when analyzed straight
- R = The data are unusable





2309989

re



Scientific Laboratory Division
700 Camino de Salud, NE (P.O. Box 4700)
Albuquerque, NM 87106 (87196-4700)
Phone: 505-841-2500/-2553/-2593



For SLD Use Only:

HM-

3 User Code: 55420

Date & Time of Receipt at SLD:

4 Sample Priority: 3 If 1 or 2 call SLD

5 Submitter Code: 1065

WSS Code:

User's Site ID: W50518

6 Sample Temp. Receipt @ SLD:

7 Facility or WSS Name: Private Homeowner - Clay Osborn

Facility/WSS Location: Complete 8, 9 & 10

8 County: Lea

9 City: Jal

10 State: or CHANGE NM TO

11 Sampling Location: Well # 3

12 Sample Collection: On: 10/22/01 Date: MM/DD/YY

By: Birtownm Last Name

At: 10:39 Time: 24:00 Hour Clock

Liisa First Name

13 Sample Info. Contact: Ph: 505-762-3928

If not collector, per box 12, Please print name here:

14 Reports are mailed to the address specified by the Submitter Code and WSS Code (when present). However, if one of the following applies, please check appropriate boxes below and complete address form.

- Send an additional Report to
New Address for: Submitter, WSS/Client

Name: Clay Osborn
Address: #1 Rocky Top Lane / P.O. Box 1285
City: Jal State: NM Zip: 88252

15 Sampling Documentation (Check)

- NMED Monitoring, Split w/ Facility, Compliance, Confirmation, Non-compliance, Influent, Grab Sample, Effluent

16a Field Data: (When appropriate)

pH: ; Temperature: °C
Conductivity: umhos/cm
Chlorine Residual: mG/L

16b Field Remarks: (Optional)

Well #3 - Near original homestead.

- 17 Sample Type: Water, Not Preserved, Not-Filtered (WNN), Water, Not Preserved, Filtered (WNF), Water, Preserved, Not-Filtered (WPN), Water, Preserved, Filtered (WPF), Soil/Sediment, Blood, Tissue, Air Filter, Other:

18 Analyses Requested: Please Check the appropriate box(es) below to indicate your analytical request(s).

- Group Analyses: ICP Scan, SDWA Group I, SDWA Lead & Copper

- Single Metals as marked: Aluminum, Copper, Selenium, Arsenic, Iron, Uranium, Cadmium, Lead, Vanadium, Chromium, Mercury, Zinc

Remarks by Laboratory:

# Coopers Salt Water Disposal

505/397-2045 No 22350  
Box 55  
Monument, New Mexico 88265

DATE 10/22/05

COMPANY NAME Eddie Saay Consulting

ADDRESS 101 W Illinois

CITY Hobbs N.M 88242

NO. OF BARRELS 1861 mw water

SIGNATURE Eddie Saay

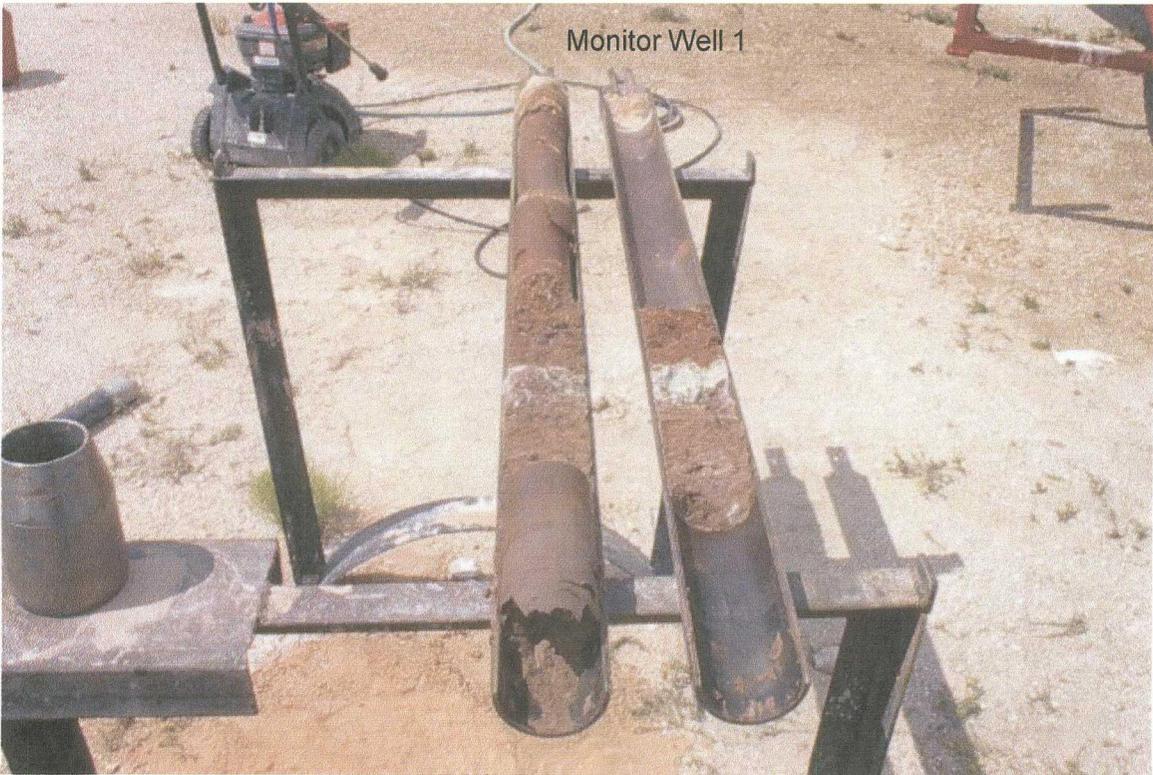
APPENDIX 8

A. MONITOR WELLS

Monitor Well 1



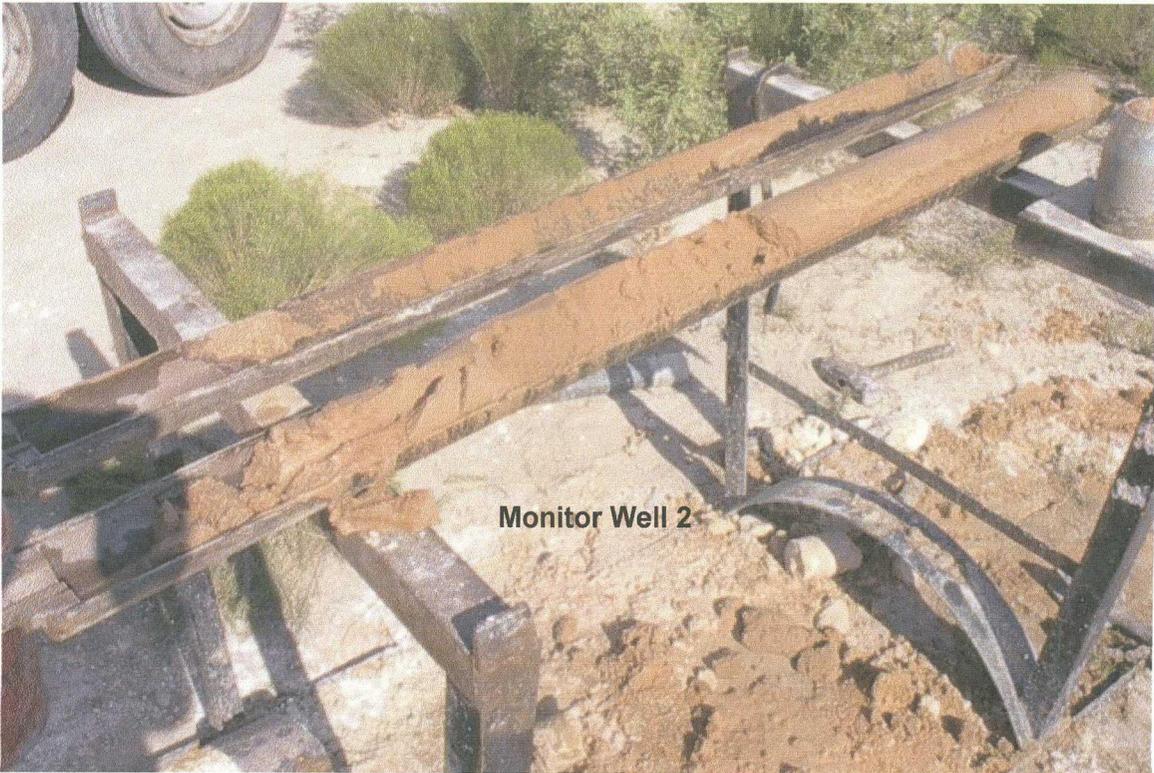
Monitor Well 1



Monitor Well 2



Monitor Well 2





Monitor Well 3

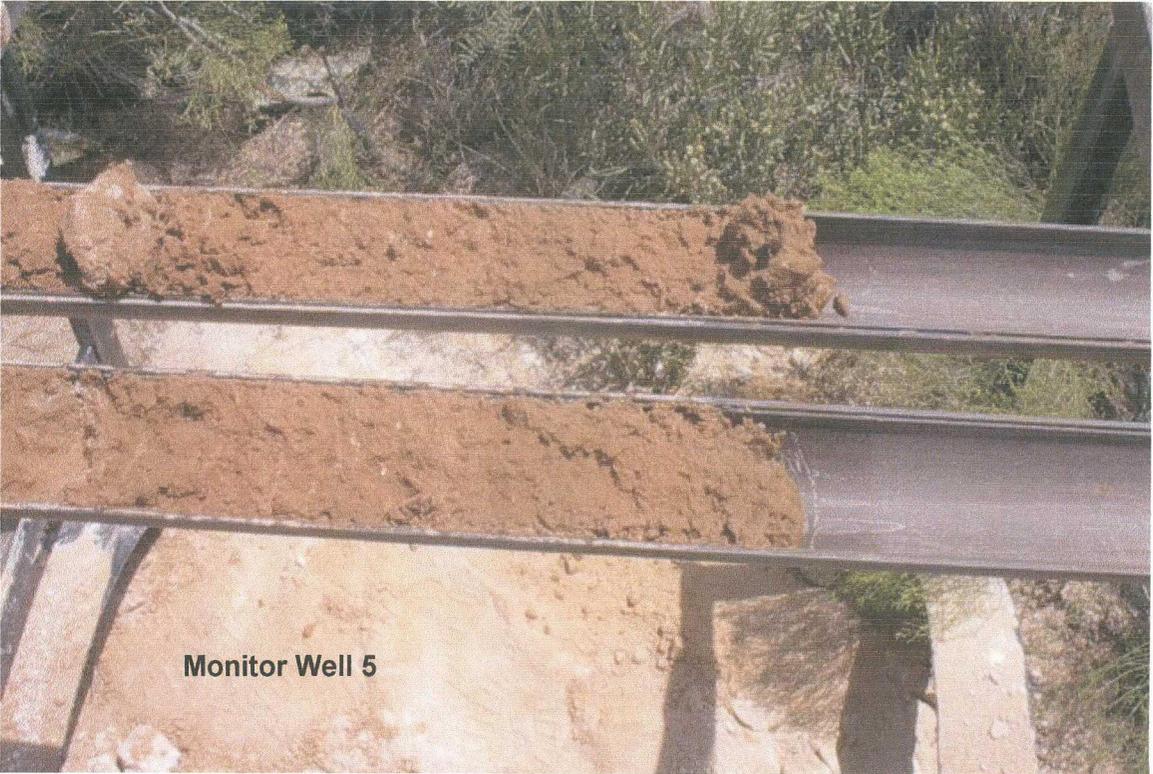


Monitor Well 3





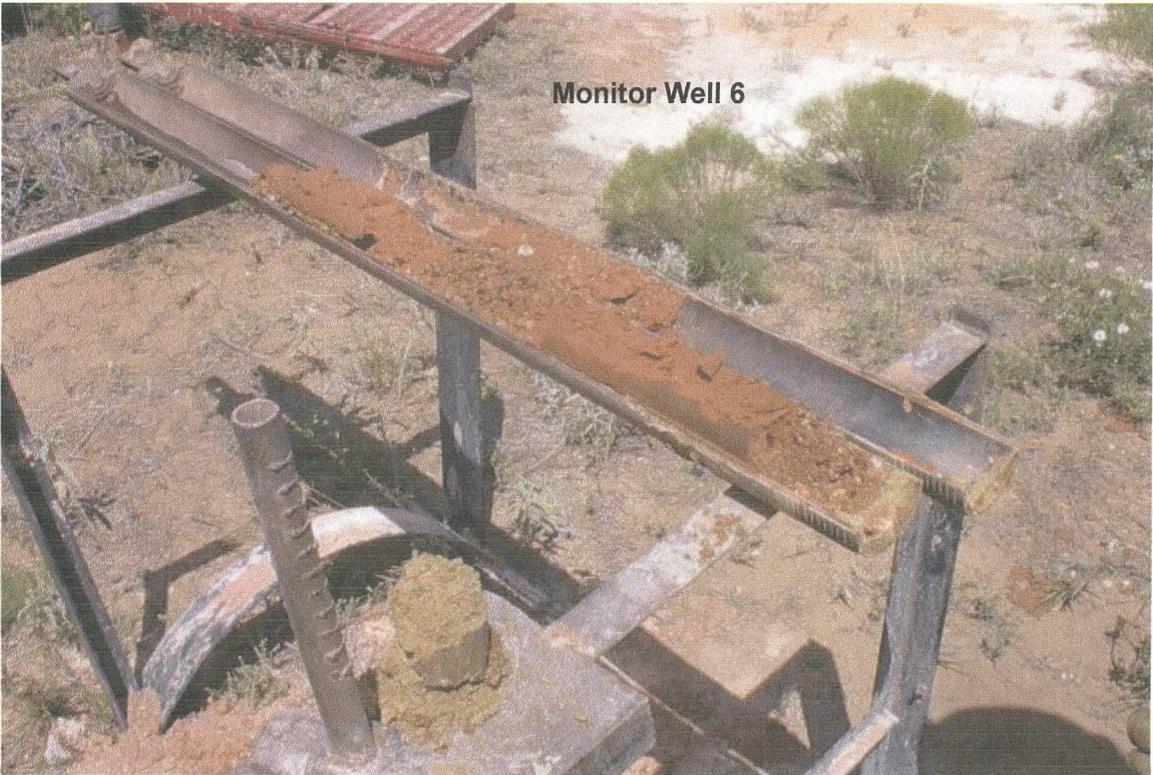
Monitor Well 5



Monitor Well 5



Monitor Well 6



Monitor Well 6



Monitor Well 7

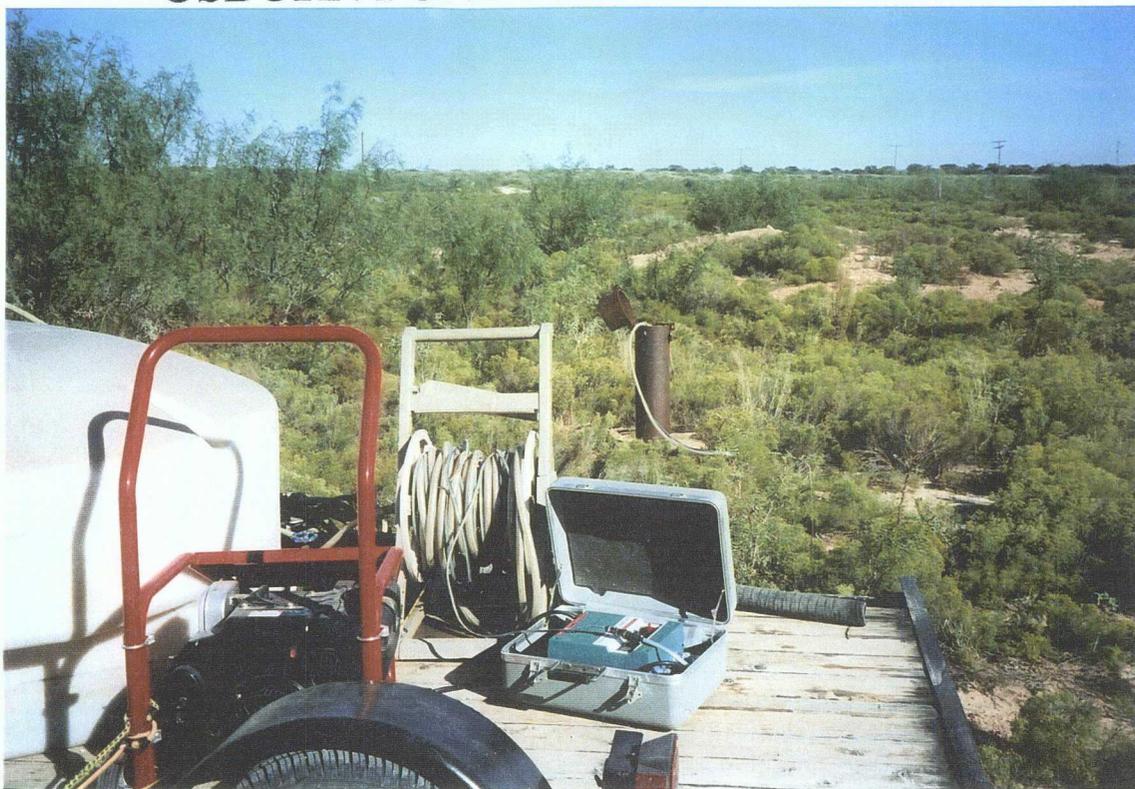


Monitor Well 7

**OSBORN  
WELL #8  
(ABANDONED)**



**OSBORN POND MONITOR WELL #9**

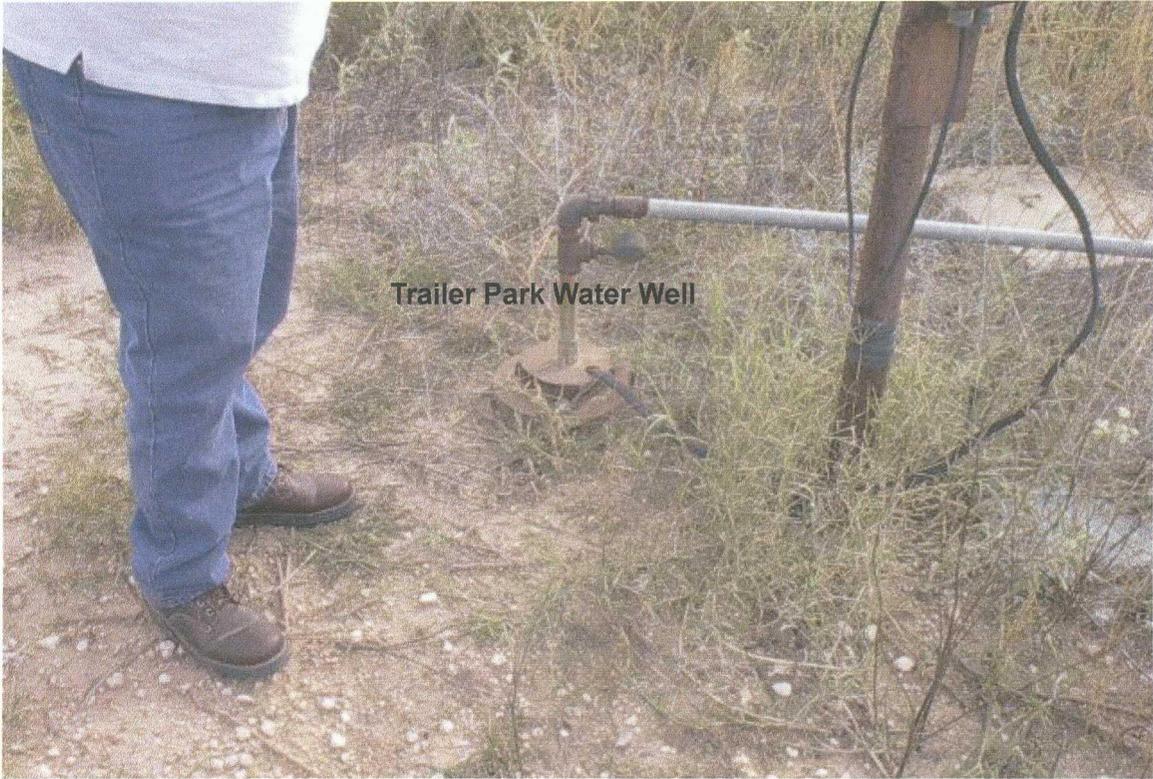


**OSBORN POND MONITOR WELL #9**



APPENDIX 8

B. WATER WELLS



Trailer Park Water Well



Trailer Park Water Well

**BAILEY #1**



**BAILEY #2D**



**BAILEY (Abandoned)**





**Bailey Water Well**



**Beard Water Well**



Windmill





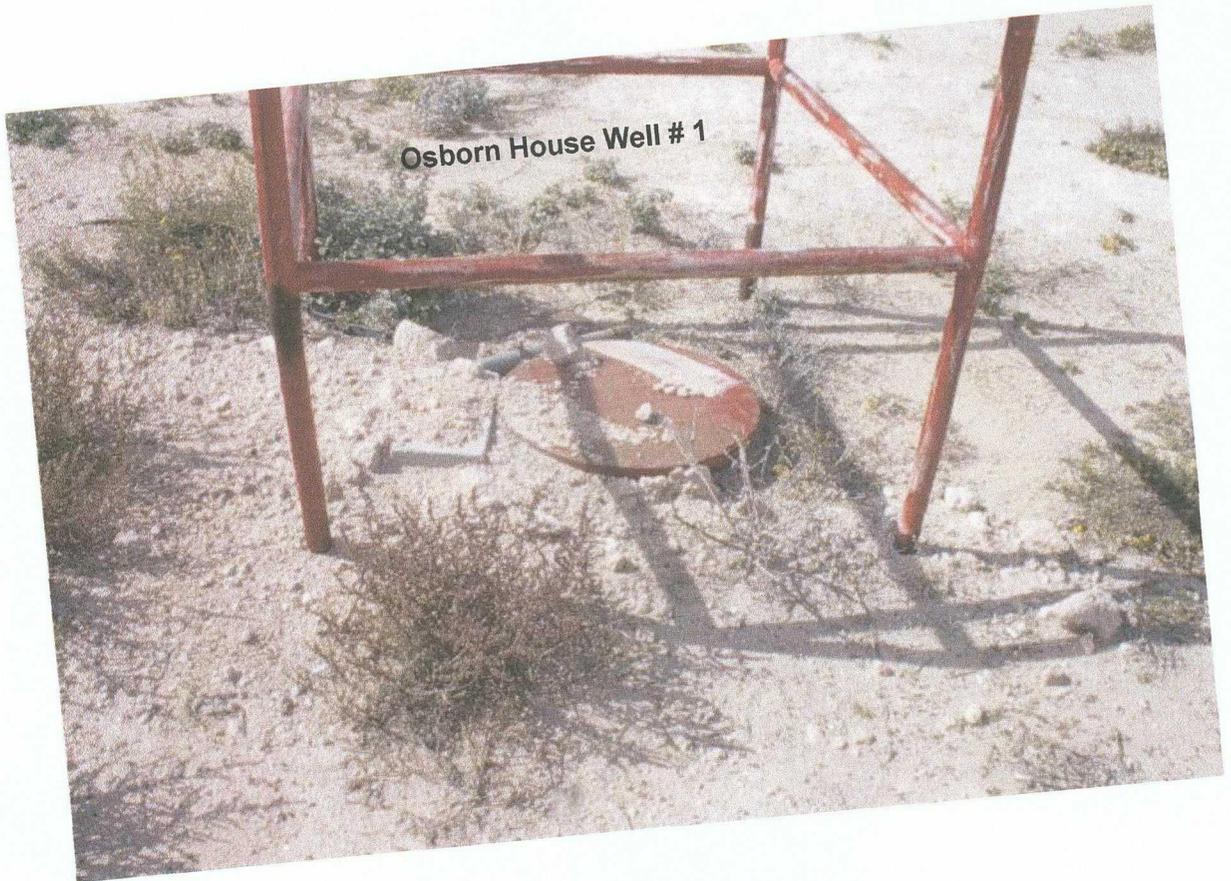
**Mathis Water Well**



**Stephsenson Water Well North**



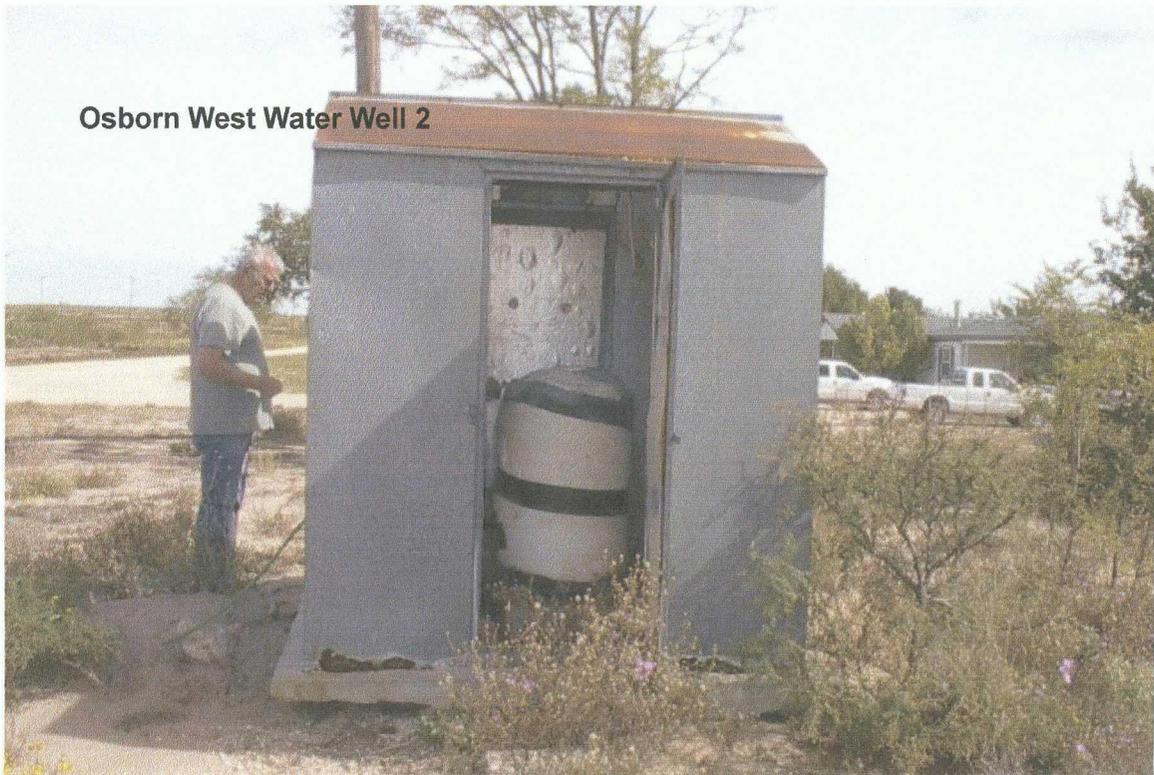
Stephenson Water Well South



Osborn House Well # 1



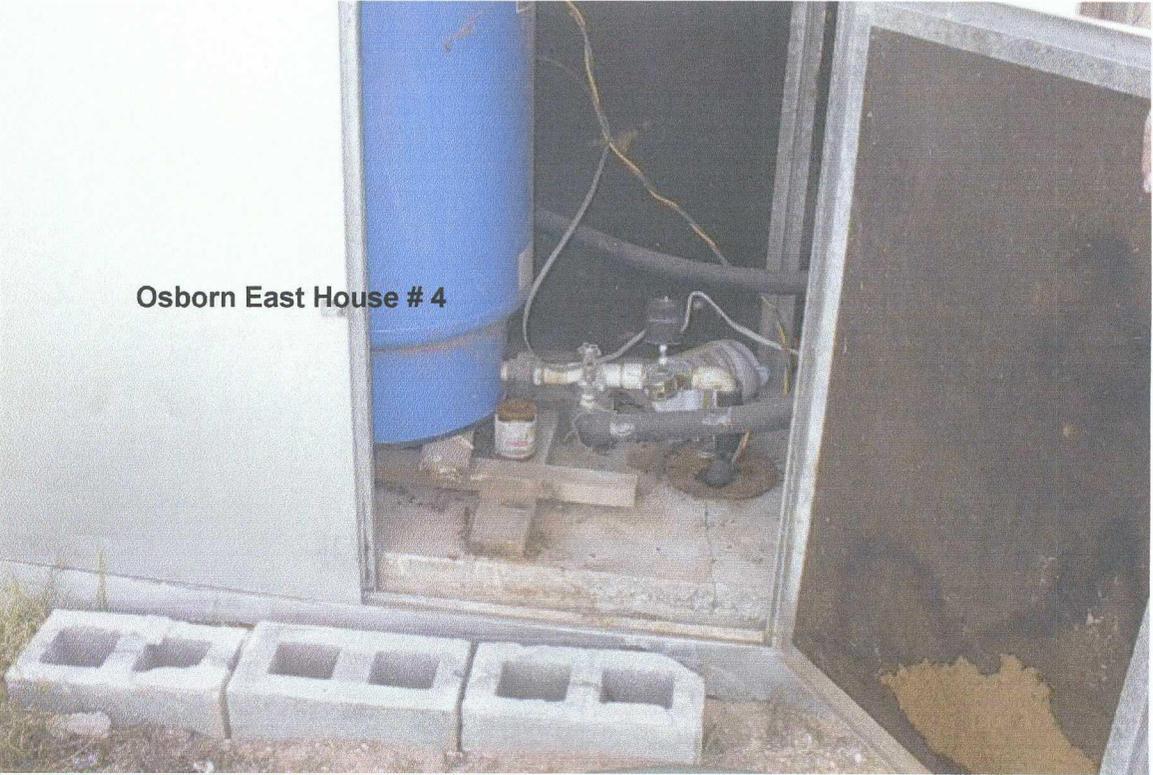
Osborn Windmill



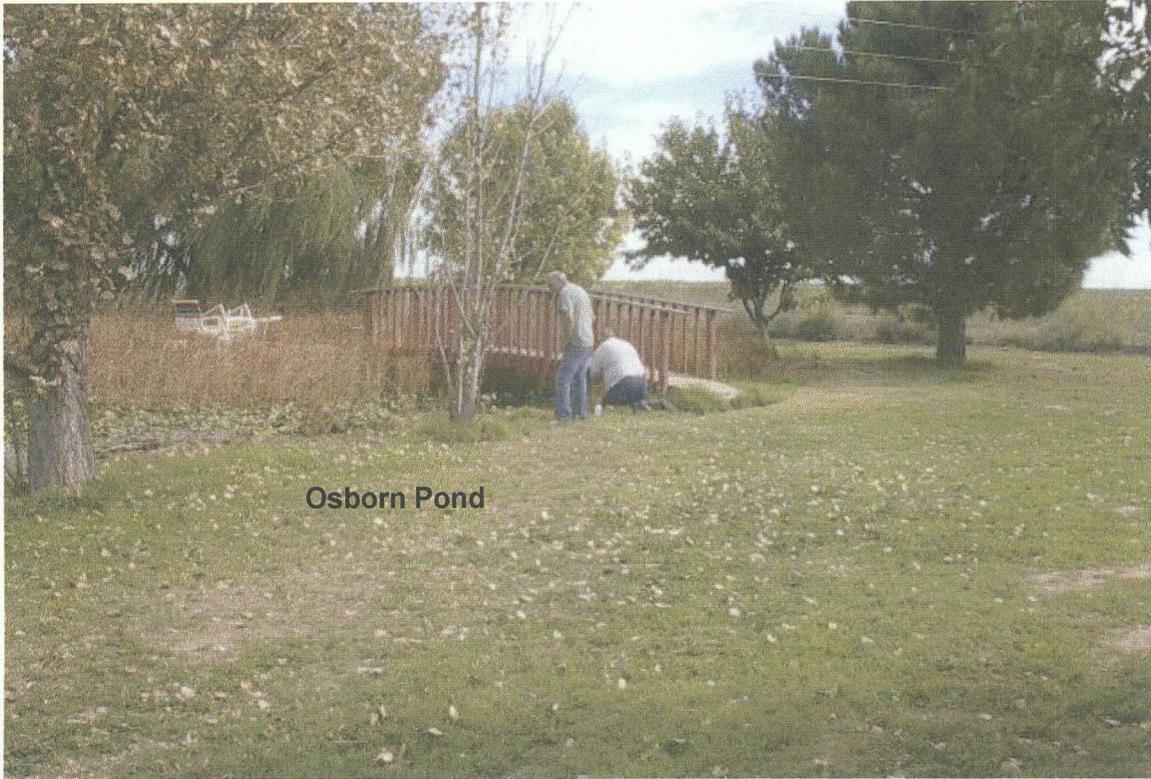
Osborn West Water Well 2



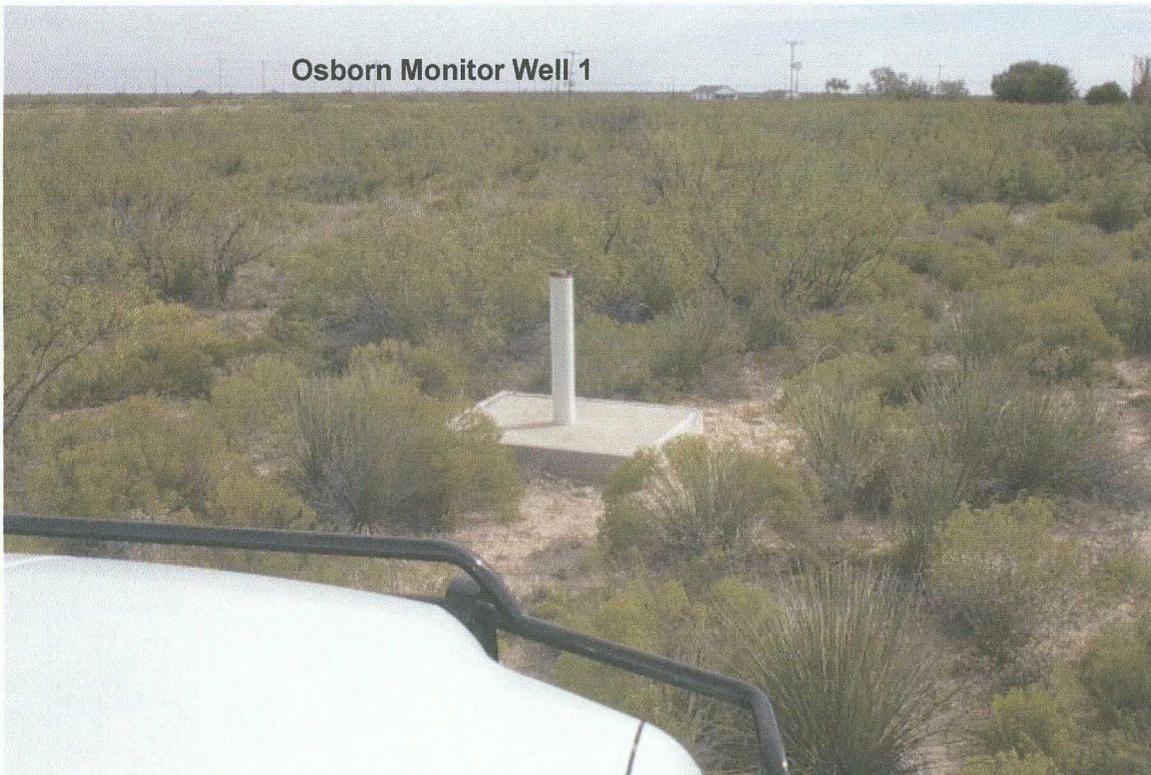
Osborn East House # 3



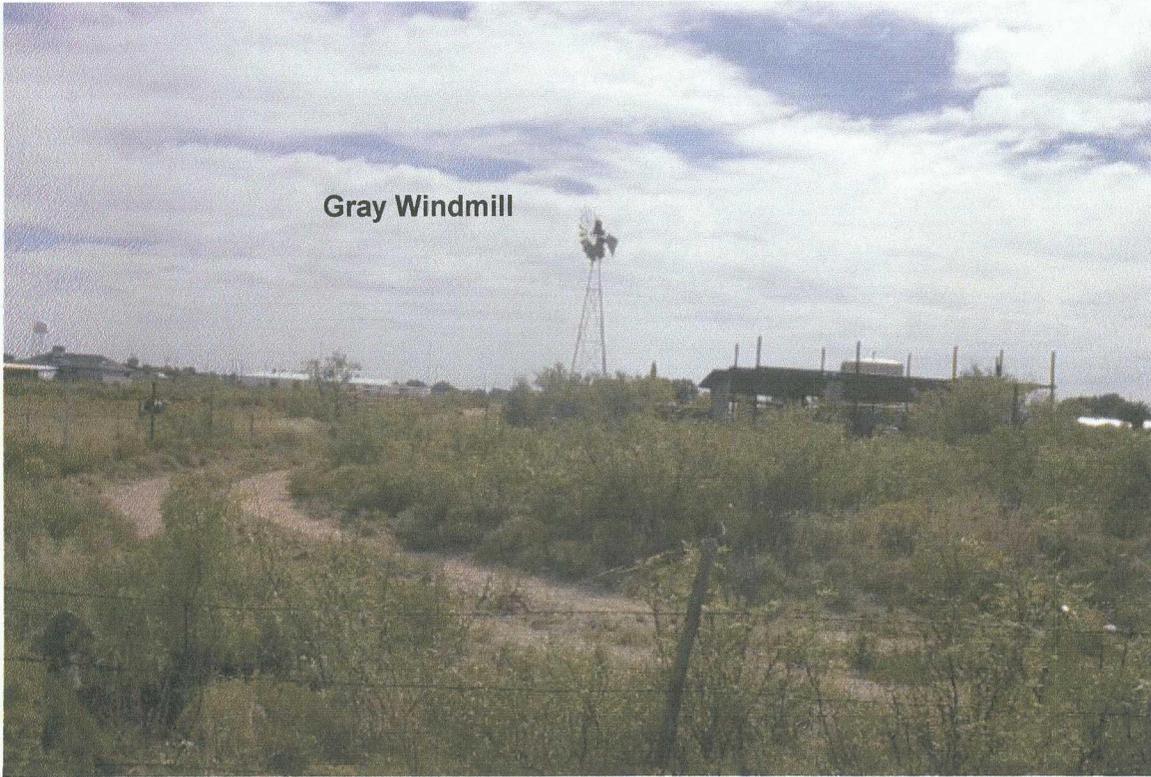
Osborn East House # 4



Osborn Pond



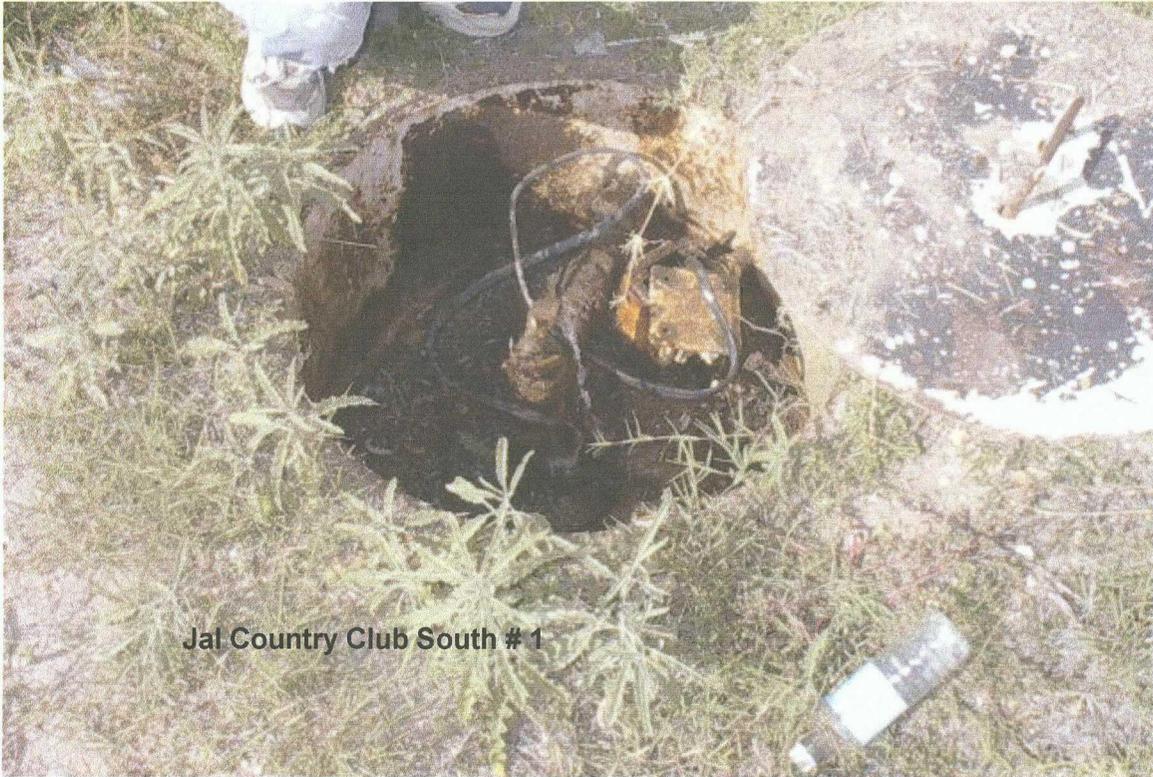
Osborn Monitor Well 1



**Gray Windmill**



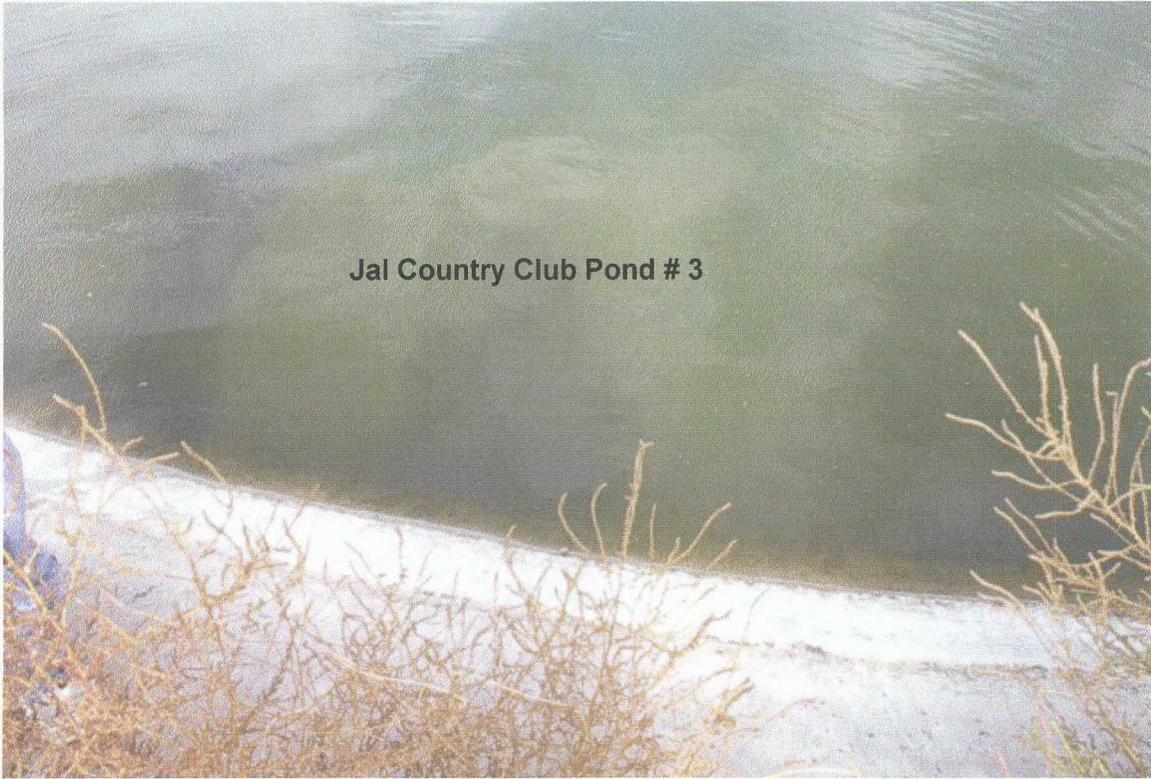
**Chance Water Well**



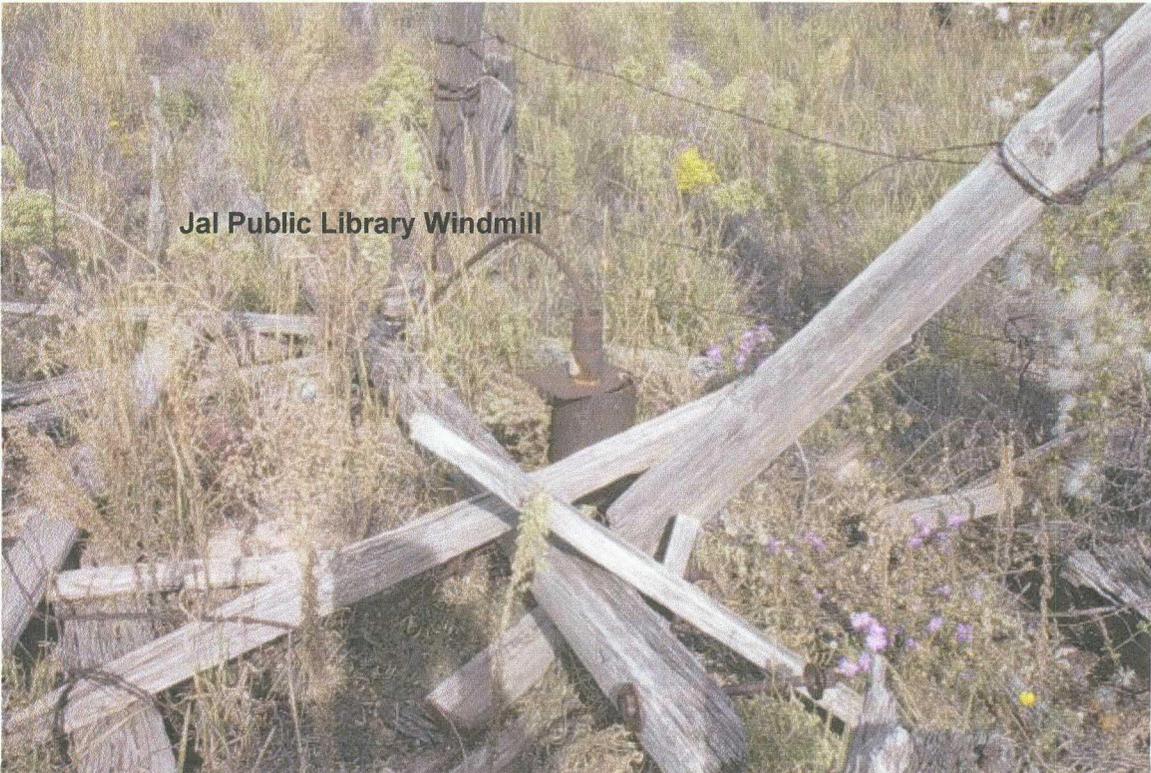
Jal Country Club South # 1



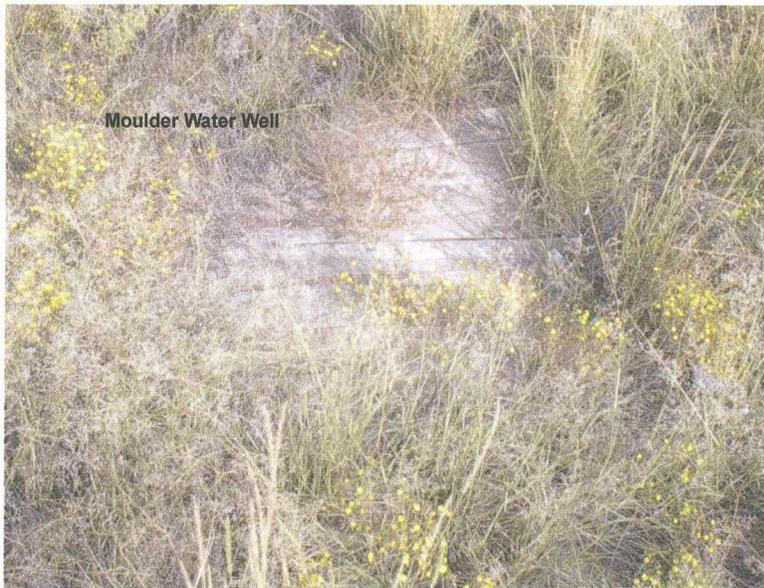
Jal Country Club North # 2



**Jal Country Club Pond # 3**



**Jal Public Library Windmill**



**WEBB (Abandoned)**



**RUSCHE (Abandoned)**



**MILLER (Abandoned)**



## CHAPARRAL #1



## CHAPARRAL #2



# CHAPARRAL #3

