AP - 062

REPORT

11/08/2005

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Oil Conservation Division
Environmental Bureau

SAMSON RESOURCES

LIVESTOCK 30 STATE #1 LEASE
GROUNDWATER INVESTIGATION
REPORT
SEC 30 T21S-R35E
API #30-025-35200
LEA COUNTY, NEW MEXICO

Ocotillo ENVIRONMENTAL

NOVEMBER 8, 2005

PREPARED FOR:
SAMSON RESOURCES
TWO WEST SECOND STREET
TULSA, OKLAHOMA 74103-3103

BY:
OCOTILLO ENVIRONMENTAL
414 NORTH TURNER
HOBBS, NM 88240
(505) 393-6371

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Ocotillo ENVIRONMENTAL

Dirt Work . On-Site Remediation . Soil Testing . Construction . Excavation

TABLE OF CONTENTS

414 North Turner . Hobbs, New Mexico 88240 . (505) 393-6371 . Fax (505) 393-6374

I. **Company Contacts**

Tom Koscelny	Samson Resources	918-591-1386
Jerry Brian	Ocotillo Environmental	505-393-6371

II. **Background**

Ocotillo Environmental was engaged on 7/05/05 to evaluate and conduct a subsurface investigation on the Livestock 30 State #1 Lease, API # 30-025-35200, located in Sec. 30, T21S-R35E in Lea County, NM (see Figures 1 and 2). Subsurface sampling was conducted utilizing a hollow-stem drilling rig to determine the vertical/horizontal extent of chloride impact (see Appendix A). An initial "dig and haul" of impacted soil, in conjunction with sampling and analysis, had already been conducted at the site.

III. **Soils**

The surface soils in the area are of the Simona-Tonuco association and the Midessa series. The Midessa series consists of calcareous, nearly level to gently sloping, well-drained soils that have a loam to clay loam subsoil. These soils formed in wind-deposited and water-deposited, calcareous sediments on plains. Slopes are 0 to 3 percent. The vegetation consists of short and mid grasses and shrubs. The average annual precipitation is 10 to 12 inches.

Typically, the surface layer is dark grayish –brown loam about 4 inches thick. In places it is fine sandy loam. The subsoil is grayish-brown to pale-brown clay loam about 18 inches thick. The substratum, to a depth of 60 inches, is light-gray clay loam that has high lime content. The soul is calcareous throughout.

The soil is used as range and wildlife habitat.

IV. **Groundwater**

Based on the New Mexico State Engineer's Office database, there were not any records found (see Appendix B).

As indicated on the Approved C-144 (see Appendix C) by Mr. Tom Koscelny, personal interview with the landowner indicated that depth to groundwater (dgw) was from 50'-100' below ground surface (bgs).

New Mexico Oil Conservation Division (NMOCD) internal data indicated that the dgw was 40'bgs. Groundwater was actually encountered at 40' bgs.

V. **Work Performed**

On July 8, 2005, Ocotillo Environmental viewed the site. The site had already undergone an excavation / dig and haul procedure to reduce the source of impacted soils. A sampling event had already been conducted under the supervision of Mr. Tom Koscelny. Soil samples had been transported under chain-of-custody to Cardinal Labs at Hobbs, NM for TPH, BTEX, and chloride analysis (see Appendix F). TPH and total Xylenes were below the accepted maximum contaminant level (MCL).

The Koscelny sampling event consisted of five sampling points at 10' bgs, one in each quadrant and one in the center of the excavated area (see Figure 3) Analytical results for chlorides in the Center, NW quadrant, NE quadrant, SW quadrant, and the SE quadrant were 8,080 ppm, 4160 ppm, 3920 ppm, 5520 ppm, and 6880 ppm respectively. All samples exceeded the accepted MCL for chlorides of 250 ppm.

On the 9/15/05, Ocotillo Environmental returned to the site to delineate the vertical and horizontal extent of chloride impact as per the NMOCD approved Delineation Sampling Plan (see Figure 4 and Appendix D).

Nine bore holes (BH) were drilled and split spoon sampling conducted every 5'(see Figure 4). A total of 51 discrete grab samples were retrieved . A Temporary Monitoring Well (TMW) was completed in BH #1. The well was developed and sampled. The samples were properly packaged, preserved, and transported under Chain-of-Custody (see Appendix F) to Cardinal Laboratories of Hobbs, New Mexico for analysis. All samples were analyzed for Chlorides (EPA Method: 4500-Cl B), and Total Ions (EPA Methods: SM3500-Ca-D; 3500-Mg E; SM4500-Cl-B).

BH # 1 (inside the pit area) was sampled at 15', 20', 25', 30', 35', 40', and 50' (TMW) bgs respectively.

Chloride analysis at 15', 20', 25', 30', 35', 40', and 50'(TMW) bgs indicated concentrations at BH #1 were 3071 ppm, 768 ppm, 1121 ppm, 1312 ppm, 1296 ppm, 864 ppm, and 3999 ppm (TMW), respectively (see Figure 5, table, or Appendix E).

BH # 2,3,4, and 5 (inside the pit area) were sampled at 15', 20', 25', 30' , 35', 40', and 45' bgs respectively.

Chloride analysis at 15' bgs indicated concentrations at BH #2, BH #3, BH #4, BH #5 were 1400 ppm, 432 ppm, 3551 ppm, and 3007 ppm respectively (see Figure 5, table, or Appendix E).

Chloride analysis at 20' bgs indicated concentrations at BH #2, BH #3, BH #4, BH #5 were 2431 ppm, 432 ppm, 5998 ppm, and 5726 ppm respectively (see Figure 5, table, or Appendix E).

Chloride analysis at 25' bgs indicated concentrations at BH #2, BH #3, BH #4, BH #5 were 1887 ppm, 432 ppm, 14080 ppm, and 3039 ppm respectively (see Figure 5, table, or Appendix E).

Chloride analysis at 30' bgs indicated concentrations at BH #2, BH #3, BH #4, BH #5 were 1344 ppm, 688 ppm, 6718 ppm, and 3839 ppm respectively (see Figure 5, table, or Appendix E).

Chloride analysis at 35' bgs indicated concentrations at BH #2, BH #3, BH #4, BH #5 were 800 ppm, 720 ppm, 2799 ppm, and 2031 ppm respectively (see Figure 5, table, or Appendix E).

Chloride analysis at 40' bgs indicated concentrations at BH #2, BH #3, BH #4, BH #5 were 496 ppm, 704 ppm, 1424 ppm, and 1104 ppm respectively (see Figure 5, table, or Appendix E).

Chloride analysis at 45' bgs indicated concentrations at BH #2, BH #3, BH #4, BH #5 were 592 ppm, 368 ppm, 1232 ppm, and 1168 ppm respectively (see Figure 5, table, or Appendix E).

BH # 6,7,8,and 9 (outside the pit area) were sampled at 15', 20', 25', and 30' bgs respectively.

Chloride analysis at 15' bgs indicated concentrations at BH #6, BH #7, BH #8, BH #9 were 16 ppm, 112 ppm, 116 ppm, and 224 ppm respectively (see Figure 5, table, or Appendix E).

Chloride analysis at 20' bgs indicated concentrations at BH #6, BH #7, BH #8, BH #9 were 16 ppm, 80 ppm, 128 ppm, and 64 ppm respectively (see Figure 5, table, or Appendix E).

Chloride analysis at 25' bgs indicated concentrations at BH #6, BH #7, BH #8, BH #9 were 32 ppm, 32 ppm, 128 ppm, and 240 ppm respectively (see Figure 5, table, or Appendix E).

Chloride analysis at 30' bgs indicated concentrations at BH #6, BH #7, BH #8, BH #9 were 32 ppm, 16 ppm, 112 ppm, and 48 ppm respectively (see Figure 5, table, or Appendix E).

DATE	ID		Cl
9/19/2005	BH #1	15' BGS	3071
9/19/2005	BH #1	20' BGS	768
9/19/2005	BH #1	25' BGS	1120
9/19/2005	BH #1	30' BGS	1312
9/19/2005	BH #1	35' BGS	1296
9/19/2005	BH #1	40' BGS	864
9/20/2005	BH #1	50' BGS	3999
9/22//2005	BH #2	15' BGS	1400
9/22//2005	BH #2	20' BGS	2431
9/22//2005	BH #2	25' BGS	1887
9/22//2005	BH #2	30' BGS	1344
9/22//2005	BH #2	35' BGS	800
9/22//2005	BH #2	40' BGS	496
9/22//2005	BH #2	45' BGS	592
9/20/2005	BH #3	15' BGS	432
9/20/2005	BH #3	20' BGS	432
9/20/2005	BH #3	25' BGS	432
9/20/2005	BH #3	30' BGS	688
9/20/2005	BH #3	35' BGS	720
9/20/2005	BH #3	40' BGS	704
9/20/2005	BH #3	45' BGS	368
9/22/2005	BH #4	15' BGS	3551
9/22/2005	BH #4	20' BGS	5998
9/22/2005	BH #4	25' BGS	14080
9/22/2005	BH #4	30' BGS	6718
9/22/2005	BH #4	35' BGS	2799
9/22/2005	BH #4	40' BGS	1424
9/22/2005	BH #4	45' BGS	1232
9/20/2005	BH #5	15' BGS	3007
9/20/2005	BH #5	20' BGS	5726
9/20/2005	BH #5	25' BGS	3039
9/20/2005	BH #5	30' BGS	3839
9/20/2005	BH #5	35' BGS	2031

9/20/2005	BH #5	40' BGS	1104
9/20/2005	BH #5	45' BGS	1168
9/19/2005	BH #6	15' BGS	16
9/19/2005	BH #6	20' BGS	16
9/19/2005	BH #6	25' BGS	32
9/19/2005	BH #6	30' BGS	32
9/19/2005	BH #7	15' BGS	112
9/19/2005	BH #7	20' BGS	80
9/19/2005	BH #7	25' BGS	32
9/19/2005	BH #7	30' BGS	16
9/19/2005	BH #8	15' BGS	16
9/19/2005	BH #8	20' BGS	128
9/19/2005	BH #8	25' BGS	128
9/19/2005	BH #8	30' BGS	112
9/19/2005	BH #9	15' BGS	224
9/19/2005	BH #9	20' BGS	64
9/19/2005	BH #9	25' BGS	240
9/19/2005	BH #9	30' BGS	48

V. Conclusions

Analytical results of soil samples extracted outside the pit area (BH # 6,7,8, and 9) indicate chloride levels do not exceed the MCL of 250 ppm. This would suggest that a horizontal migration is minimal outside the original pit area.

Analytical results of all soil samples extracted inside the pit area (BH #1,2,3,4, and 5) indicate that the MCL for chlorides has been exceeded from 15' bgs to groundwater, which was encountered at 40' bgs. This would suggest that the migratory pathway for the majority of the chloride release is a downward vertical migration.

The analytical results of the TMW completed at 50'bgs were 3999 ppm. This indicates that a groundwater impact has occurred.

Notification of a groundwater impact was reported by phone to Roger Anderson at the NMOCD office in Santa Fe, NM on the 10/04/05.

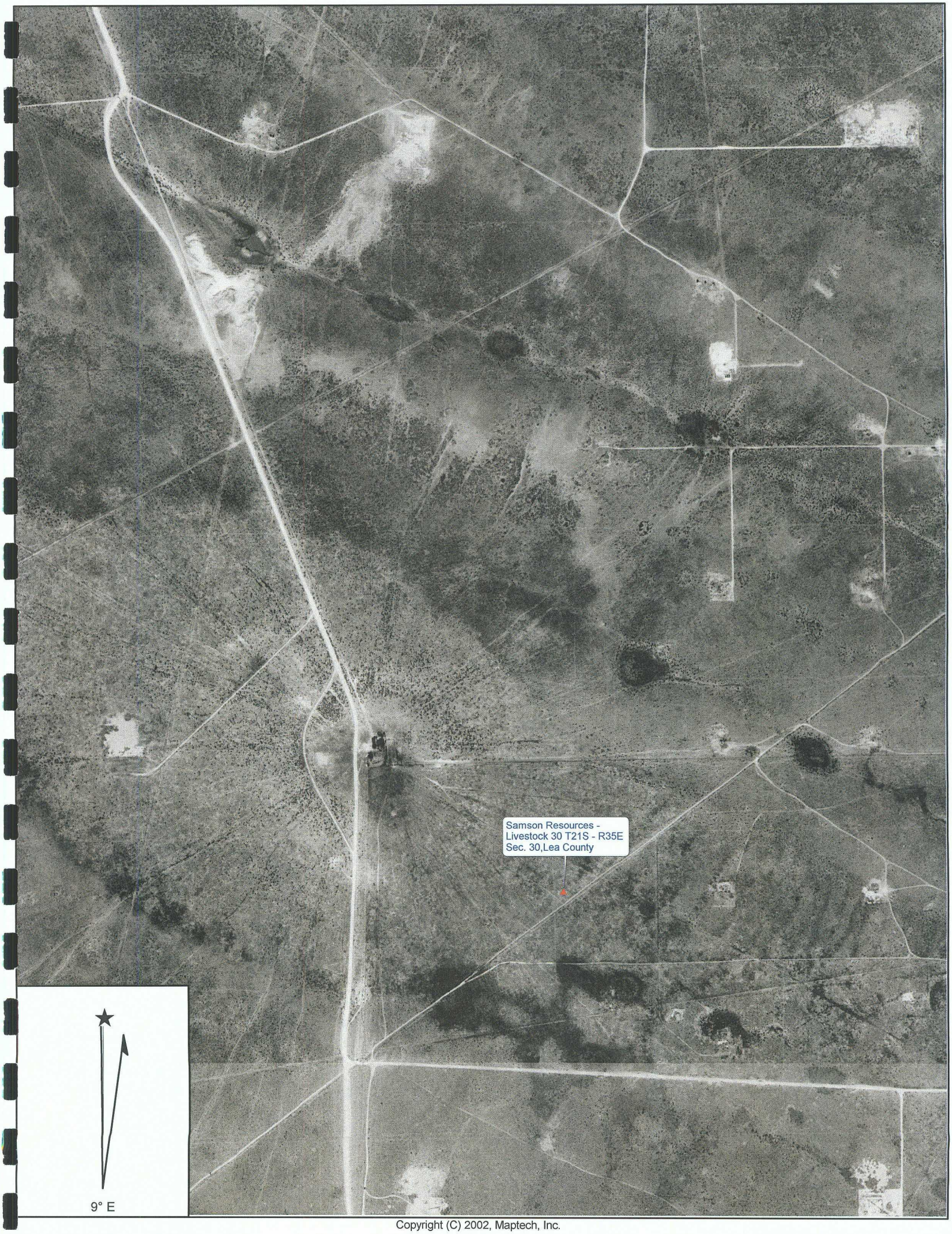
VI. Proposed Action Plan

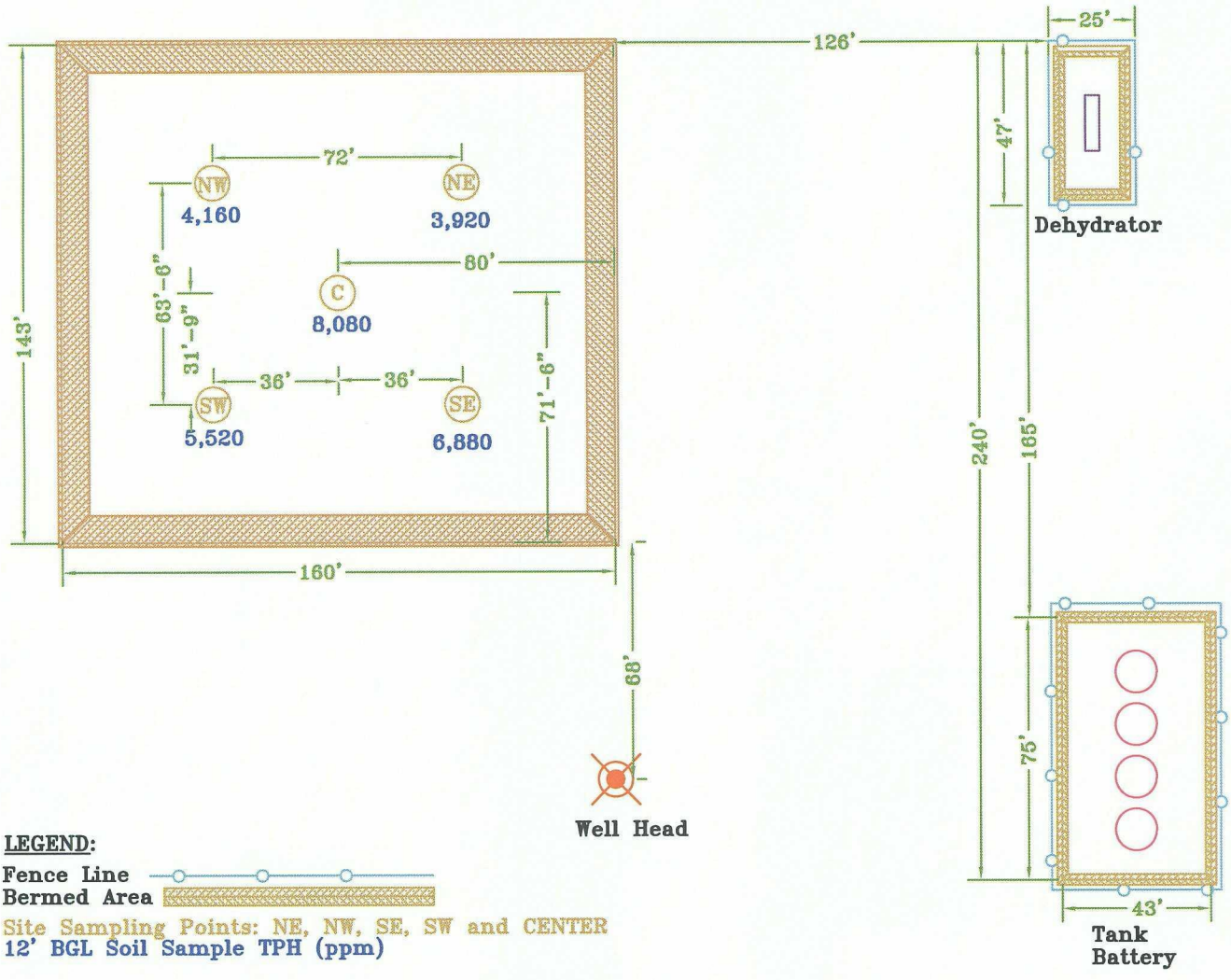
Based upon the results of this site investigation, we propose the following actions for your consideration and approval:

1. remove an additional 20 ft of impacted material from the pit to a depth of 30 ft below ground level (bgl)
2. remove the temporary monitoring well located in the center of the pit area and plug with bentonite
3. cap the excavated bottom with a 20 ml liner
4. backfill to grade with clean soil and return site to natural conditions
5. drill 3 monitoring wells (two down gradient and one upgradient) to determine groundwater flow and gradient
6. begin to establish plume boundaries
7. evaluate data and modify plan accordingly

VII. Figures & Appendices

Figure 1 – Vicinity Map
Figure 2 – Aerial Map
Figure 3 – Koscelny Site Sampling Map
Figure 4 – Proposed Site Delineation Sampling Plan
Figure 5 – Site Map Analytical Results
Appendix A - Site Photos
Appendix B - NM State Engineers Groundwater Records Search
Appendix C - NMOCD Approved C-144
Appendix D - NMOCD Approved Site Delineation Plan
Appendix E - Analytical Results
Appendix F – Chain-of-Custody





LEGEND:

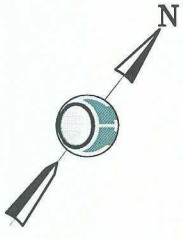
Fence Line

Bermed Area

Site Sampling Points: NE, NW, SE, SW and CENTER

12' BGL Soil Sample TPH (ppm)

Property: Livestock 30 State No. 1
660' FSL and 990' FEL, Section 30
Township 21 South, Range 35 East
Lea County, New Mexico
API No.: 30-025-35200
N 32° 26' 40.4"
W 103° 24' 05.3"
Elevation 3,624'



Project: SAM-05-001
Location:
Livestock 30 State No. 1
Lea County, New Mexico
Drilling Pit Closure
Site Map - Analytical Results
Sampling Plan
Date: 7/26/05 Scale:1"= 50'

Samson Investment Company

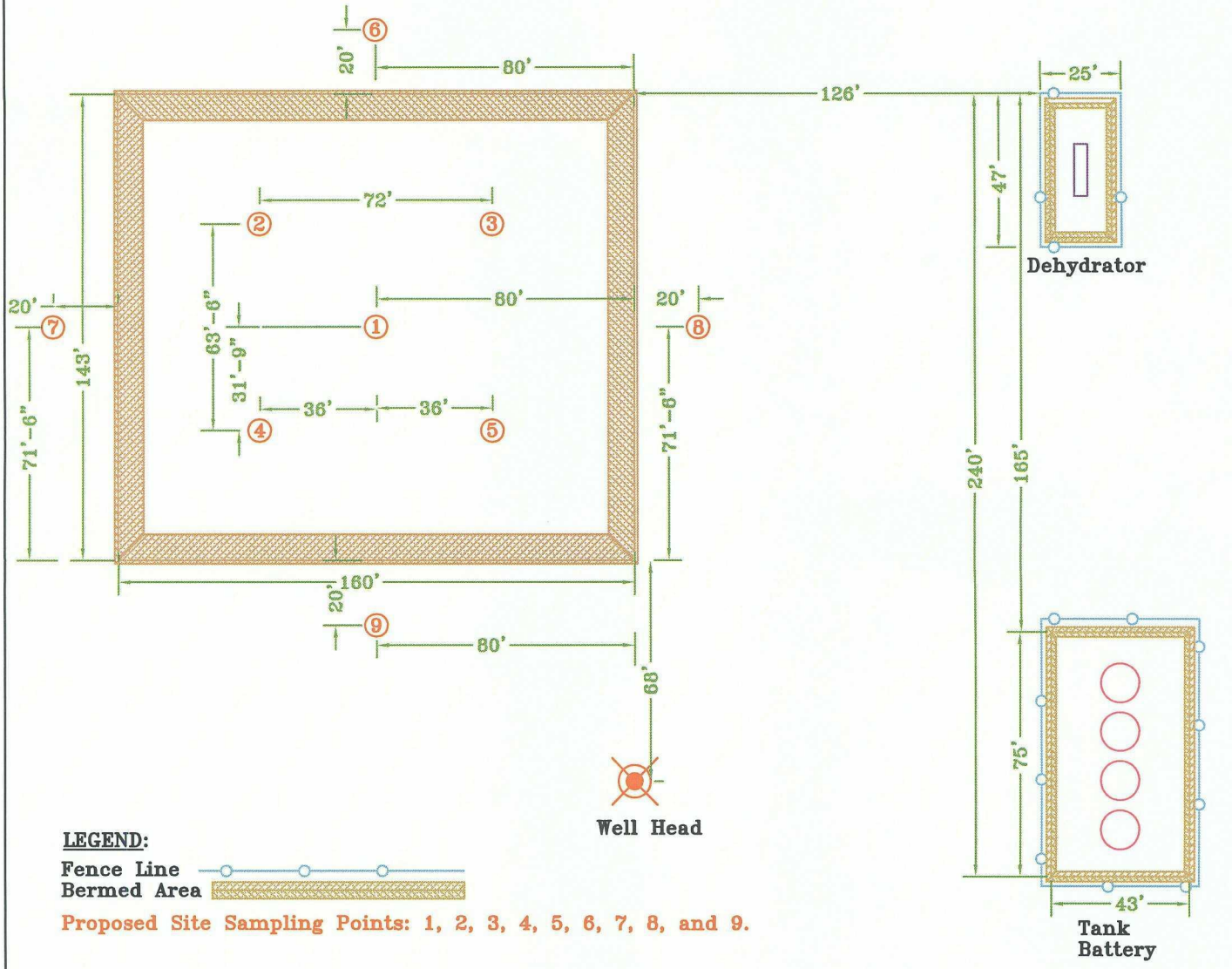
Samson

Samson Plaza
Two West Second Street
Tulsa, OK 74103-3103

P.O. Box 1816

Ocotillo ENVIRONMENTAL

Hobbs, NM 88240



LEGEND:

Fence Line

Bermed Area

Proposed Site Sampling Points: 1, 2, 3, 4, 5, 6, 7, 8, and 9.

N

50' 25' 0 50' 100'

Property: Livestock 30 State No. 1
660' FSL and 990' FEL, Section 30
Township 21 South, Range 35 East
Lea County, New Mexico
API No.: 30-025-35200
N 32° 26' 40.4"
W 103° 24' 05.3"
Elevation 3,624'

Project: SAM-05-001
Location:
Livestock 30 State No. 1
Lea County, New Mexico
Drilling Pit Closure
Site Map - Proposed Delineation Sampling Plan
Date: 7/26/05 Scale:1"= 50'

Samson Investment Company

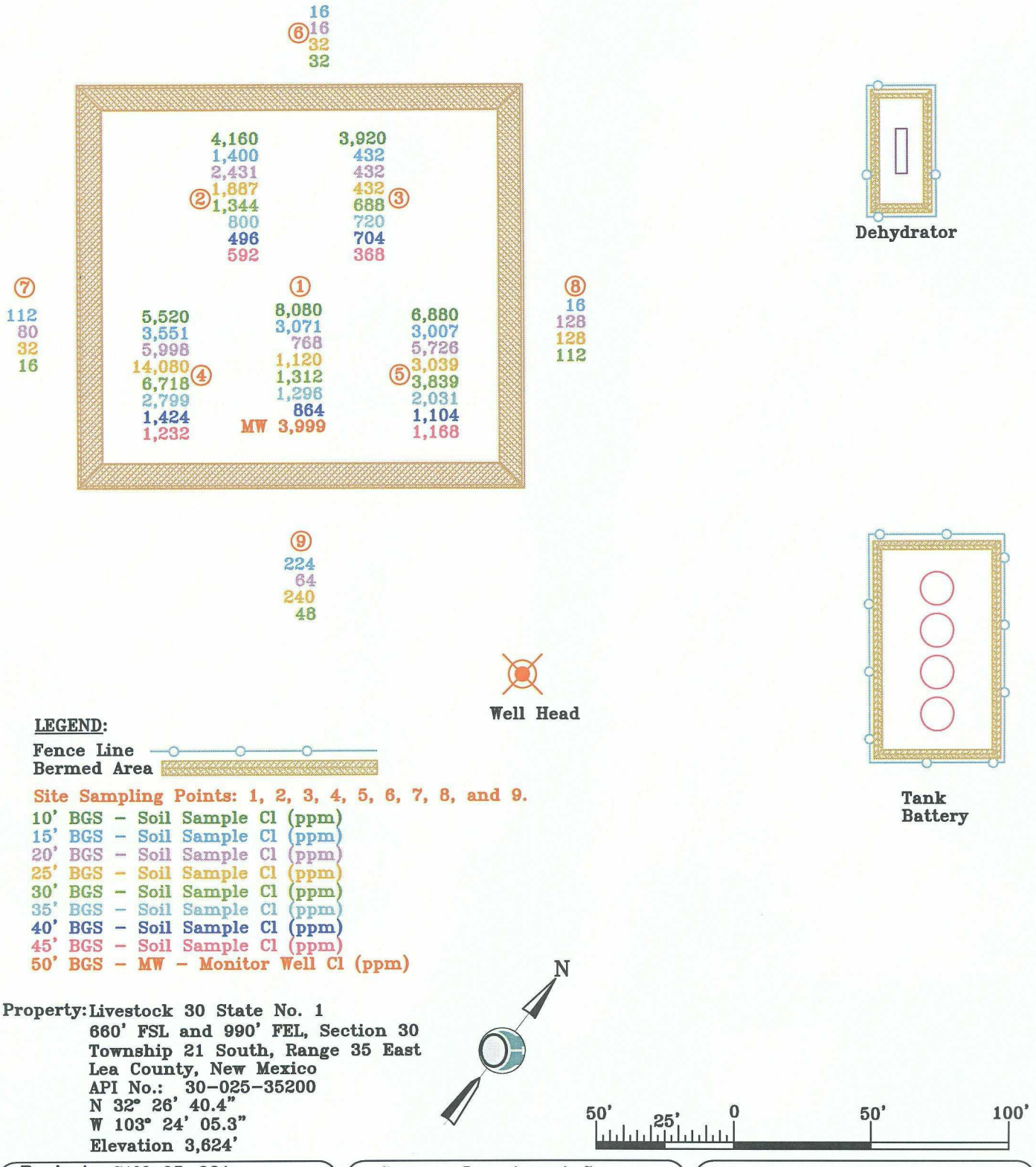
Samson

Samson Plaza
Two West Second Street
Tulsa, OK 74103-3103

P.O. Box 1816

Ocotillo ENVIRONMENTAL

Hobbs, NM 88240



Property: Livestock 30 State No. 1
660' FSL and 990' FEL, Section 30
Township 21 South, Range 35 East
Lea County, New Mexico
API No.: 30-025-35200
N 32° 26' 40.4"
W 103° 24' 05.3"
Elevation 3,624'

Project: SAM-05-001
Location:
Livestock 30 State No. 1
Lea County, New Mexico
Drilling Pit Closure
Site Map – Analytical Results
Delineation Sampling Plan
Date: 10/18/05 Scale:1"= 50'

Samson Investment Company

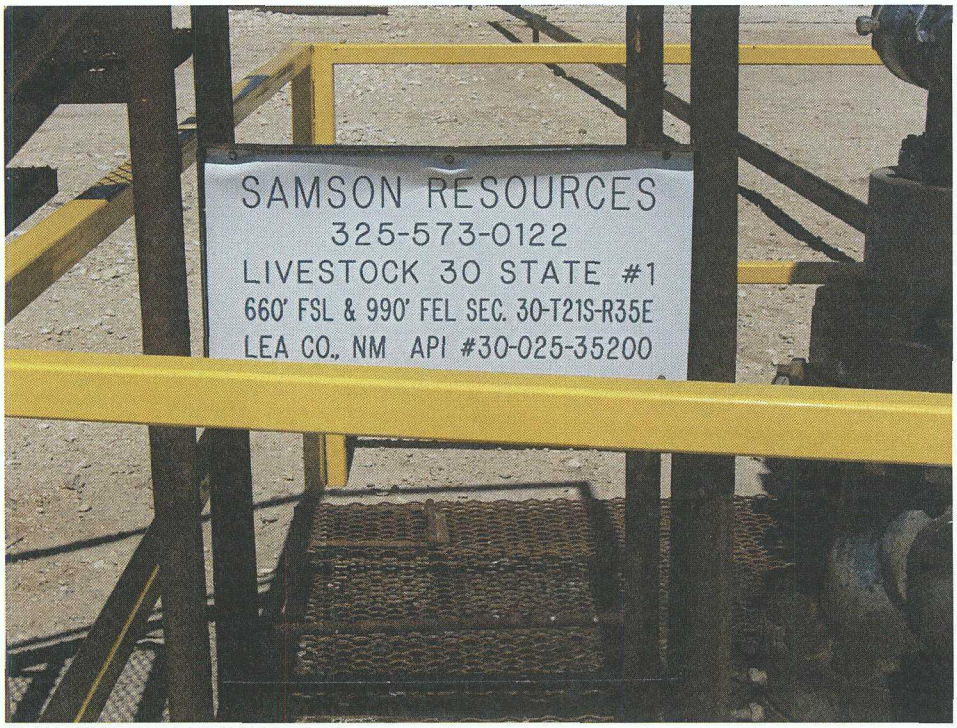
Samson

Samson Plaza
Two West Second Street
Tulsa, OK 74103-3103

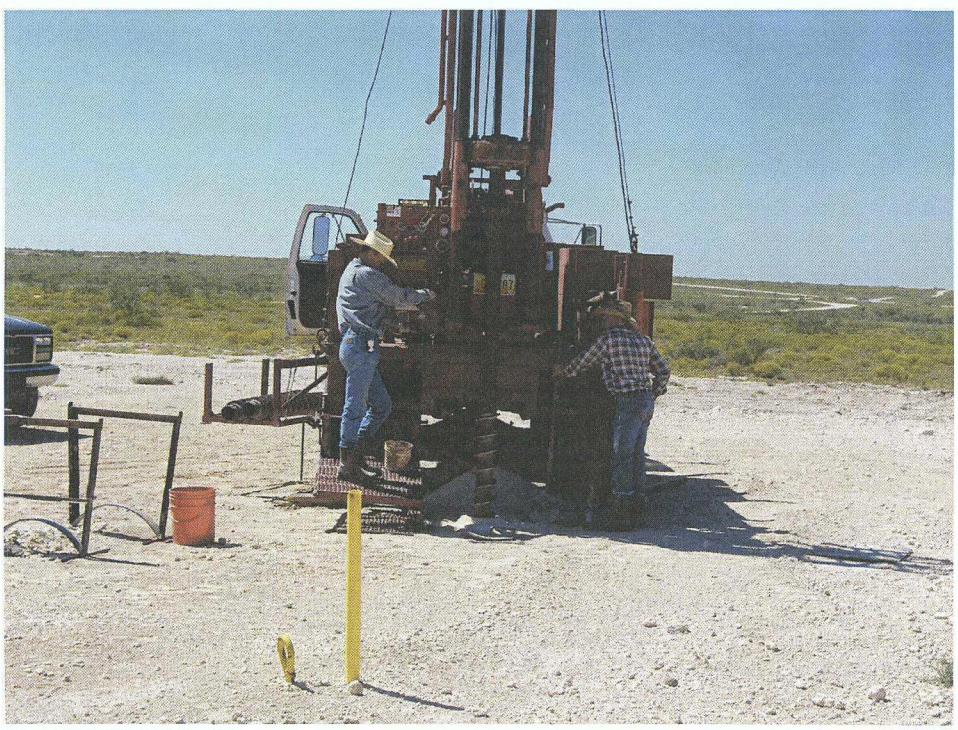
P.O. Box 1816

Ocotillo ENVIRONMENTAL

Hobbs, NM 88240



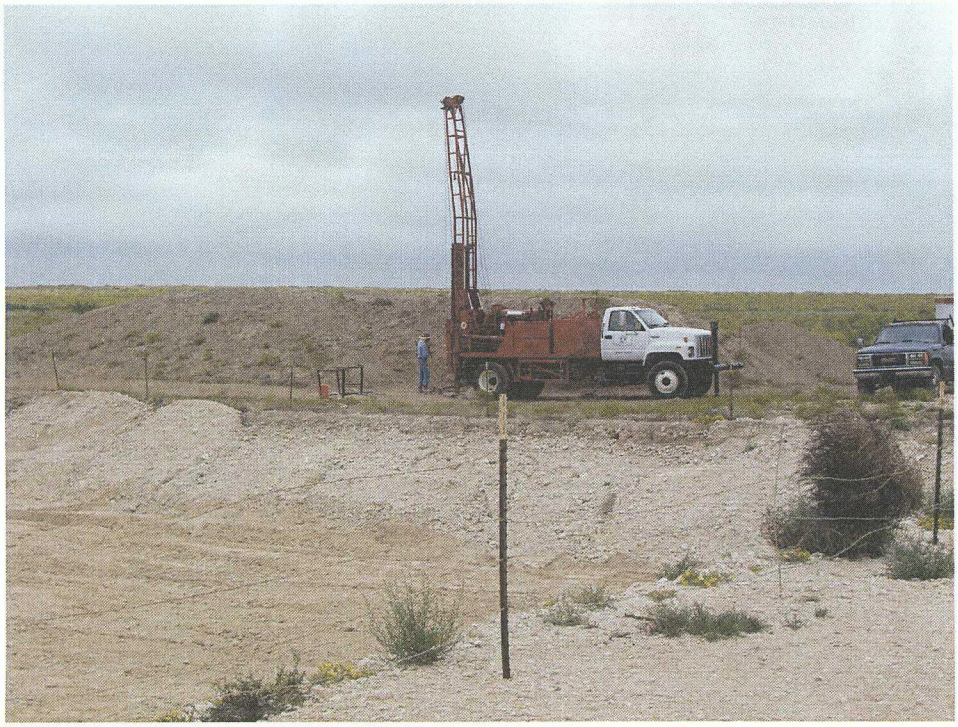
SAMSON RESOURCES
LIVESTOCK 30 STATE #1



BORE HOLE #9

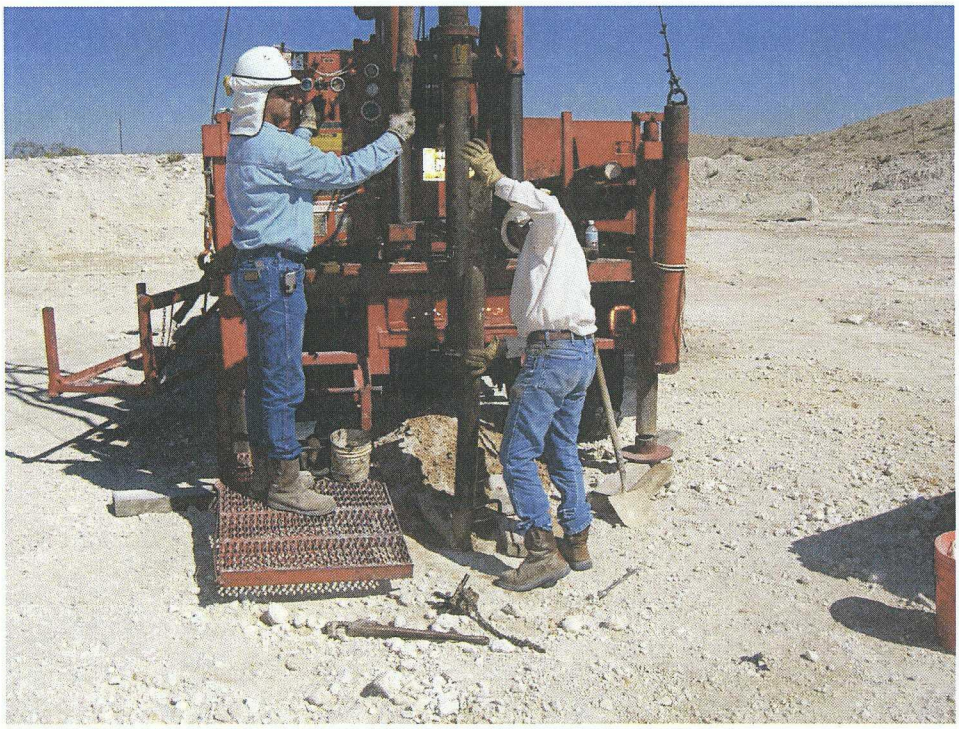
BORE HOLE #7 – LOOKING N

BORE HOLE #6 – LOOKING NW



BORE HOLE #8 – LOOKING E

SMOOTHING EXCAVATED BOTTOM – PREPARING TO DRILL



BORE HOLE #1/TEMPORY MONITORING WELL

COMPLETED MW (BH #1) – LOOKING NE TOWARDS BH#3

BORE HOLE #3 – LOOKING SW

BORE HOLE #5 – LOOKING NE

BORE HOLE #2 – LOOKING NW

BORE HOLE #4 – LOOKING S

BH #1, 2, 3. 4, 5 – LOOKING SE

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 21S Range: 35E Sections: 19,20,24,30,31,32

NAD27 X: Y: Zone: Search Radius:

County: LE Basin: L Number: Suffix:

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

Well / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | WATERS Menu | Help

WELL / SURFACE DATA REPORT 07/11/2005

DB File Nbr	Use	(acre ft per annum) Diversion	Owner	Well Number	(quarters (quarters Sourc

No Records found, try again

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-144
March 12, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒
Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: SAMSON RESOURCES CO Telephone: 918/591-1386 e-mail address: TKOSCELNY@SAMSON.COM
Address: TWO WEST SECOND ST., TULSA, OK 74103-3103
Facility or well name: Livestock 30-1 API #: _____ U/L or Qtr/Qtr _____ Sec 30 T 21S R35E
County: Lea Latitude 32.444 Longitude -103.40093 NAD: 1927 ☒ 1983 ☐ Surface Owner Federal ☐ State ☐ Private ☒ Indian ☐

Pit	**Below-grade tank**	
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☒ Unlined ☐ Liner type: Synthetic ☒ Thickness 20 mil Clay ☐ Volume _____ bbl	Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points)
	Ranking Score (Total Points)	30

If this is a pit closure: (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: onsite ☐ offsite ☐ If offsite, name of facility_____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface_____ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.**
Date: 2/16/05
Printed Name/Title TOM KOSCELNY, ENVIRONMENTAL SUPERVISOR Signature _____
Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Date: _____
Printed Name/Title_____ Signature_____

WTR @ 32'

Ocotillo
ENVIRONMENTAL
Dirt Work . On-Site Remediation . Soil Testing . Excavation . Consultation

July 28, 2005

Mr. Larry Johnson
Environmental Engineer Specialist
NM Oil Conservation Division
1625 N. French Dr.
Hobbs, NM 88240

Reference:
Site Delineation Plan-Samson Resources
Livestock 30 State # 1
Sec. 30, T21S-R35E
Lea County, NM

Mr. Johnson:

On 5/11/05, a sampling event was conducted at the Livestock 30-State #1 lease. Five samples were taken at the base of the excavation [approx. 12' below ground level (bgl)]. Samples were taken in the NE corner, NW corner, SE corner, SW corner, and center locations. Analytical results for Cl^- were 3920 ppm, 4160 ppm, 6880 ppm, 5520 ppm, and 8080 ppm respectively (see attached "Site Map-Analytical Results").

All samples exceed the accepted MCL's. We propose the following delineation plan to determine the vertical and horizontal extent of possible Cl^- contamination.

1. Drill 5 soil borings within the pit and 4 on the outside perimeter (see attached "Site Map-Proposed Delineation Sampling Plan").
2. Conduct split spoon sampling every 5'.
3. Use field analytical techniques for chloride (HACH Field Test Kit) and evaluate the chloride concentration in each split spoon sample.
4. Evaluate the lithology of the samples.
5. Cease drilling/sampling when chloride concentration is <250ppm (plus 4').
6. Collect 3 representative samples for laboratory analysis.
7. If field chloride sampling suggests that the release reached groundwater, complete a 2-inch PVC glued and coupled monitoring well with 10 feet of well screen within the uppermost portion of the saturated zone.

If you need additional information regarding the delineation plan, please contact me by telephone at (505) 393-6371, or by e-mail at jbrian@valornet.com.

Sincerely,
Jerry R. Brian, REM
Geologist

414 North Turner . Hobbs, New Mexico 88240 . (505) 393-6371 . Fax (505) 393-6374

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
OCOTILLO ENVIRONMENTAL
ATTN: J. BRIAN
414 N. TURNER
HOBBS, NM 88240
FAX TO: (505) 393-6374

Receiving Date: 09/19/05
Reporting Date: 09/19/05
Project Number: SAM-05-001
Project Name: LIVESTOCK 30 STATE #1
Project Location: LEA COUNTY, NM

Analysis Date: 09/19/05
Sampling Date: 09/16/05
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: HM

LAB NUMBER	SAMPLE ID	Cl^- (mg/Kg)
H10200-1	BH #1 15' BGS	3071
H10200-2	BH #1 20' BGS	768
H10200-3	BH #1 25' BGS	1120
H10200-4	BH #1 30' BGS	1312
H10200-5	BH #1 35' BGS	1296
H10200-6	BH #1 40' BGS	864
Quality Control		1020
True Value QC		1000
% Recovery		102
Relative Percent Difference		0.2

METHOD: Standard Methods	4500-ClˉB

Note: Analyses performed on 1:4 w:v aqueous extracts.

Amy Hill
Chemist

9/19/05
Date

H10200c

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
OCOTILLO ENVIRONMENTAL
ATTN: J. BRIAN
414 N. TURNER
HOBBS, NM 88240
FAX TO: (505) 393-6374

Receiving Date: 09/19/05
Reporting Date: 09/20/05
Project Number: SAM-05-001
Project Name: LIVESTOCK 30 STATE #1
Project Location: LEA COUNTY, NM

Sampling Date: 09/16/05
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: HM

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity ($mgCaCO_3$/L)
ANALYSIS DATE:	09/19/05	09/19/05	09/19/05	09/19/05	09/19/05	09/19/05
H10200-6 BH #1 40' BGS	647	64	12	25	3511	400
Quality Control	NR	46	54	5.24	1391	NR
True Value QC	NR	50	50	5.00	1413	NR
% Recovery	NR	92.0	108.0	105.0	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^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)
ANALYSIS DATE:	09/19/05	09/19/05	09/19/05	09/19/05	09/19/05
H10200-6 BH #1 40' BGS	864	77	211*	0	9.63
Quality Control	1020	48.52	NR	985	7.20
True Value QC	1000	50.00	NR	1000	7.00
% Recovery	102	97.0	NR	98.5	103
Relative Percent Difference	2.0	4.8	NR	0.9	1.1
METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1

Note: Analyses performed on a 1:4 aqueous extract.
*OH^- = 16.3

Amy Hill
Chemist

9/20/05
Date

H10200

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
OCOTILLO ENVIRONMENTAL
ATTN: J. BRIAN
414 N. TURNER
HOBBS, NM 88240
FAX TO: (505) 393-6374

Receiving Date: 09/20/05
Reporting Date: 09/20/05
Project Number: SAM-05-001
Project Name: LIVESTOCK 30
Project Location: LEA COUNTY, NM

Analysis Date: 09/20/05
Sampling Date: 09/19/05
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: HM

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)
H10206-8	BH #1 (T.M.W.) 50' BGS	3999
Quality Control		1020
True Value QC		1000
% Recovery		102
Relative Percent Difference		0.2

METHOD: Standard Methods	4500-ClB

Amy Hill
Chemist

9/20/05
Date

H102069

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
OCOTILLO ENVIRONMENTAL
ATTN: J. BRIAN
414 N. TURNER
HOBBS, NM 88240
FAX TO: (505) 393-6374

Receiving Date: 09/21/05
Reporting Date: 09/22/05
Project Number: SAM-05-001
Project Name: LIVESTOCK 30
Project Location: LEA COUNTY, NM

Analysis Date: 09/22/05
Sampling Date: 09/20/05
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl^- (mg/Kg)
H10213-1	BH #2-15' BGS	1400
H10213-2	BH #2-20' BGS	2431
H10213-3	BH #2-25' BGS	1887
H10213-4	BH #2-30' BGS	1344
H10213-5	BH #2-35' BGS	800
H10213-6	BH #2-40' BGS	496
H10213-7	BH #2-45' BGS	592
Quality Control		1020
True Value QC		1000
% Recovery		102
Relative Percent Difference		2.0

METHOD: Standard Methods	4500-ClˉB

Note: Analyses performed on 1:4 w:v aqueous extracts.

Amy Hill
Chemist

9/22/05
Date

H10213

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
OCOTILLO ENVIRONMENTAL
ATTN: J. BRIAN
414 N. TURNER
HOBBS, NM 88240
FAX TO: (505) 393-6374

Receiving Date: 09/20/05
Reporting Date: 09/20/05
Project Number: SAM-05-001
Project Name: LIVESTOCK 30
Project Location: LEA COUNTY, NM

Analysis Date: 09/20/05
Sampling Date: 09/19/05
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: HM

LAB NUMBER	SAMPLE ID	Cl^- (mg/Kg)
H10205-1	BH #3-15' BGS	432
H10205-2	BH #3-20' BGS	432
H10205-3	BH #3-25' BGS	432
H10205-4	BH #3-30' BGS	688
H10205-5	BH #3-35' BGS	720
H10205-6	BH #3-40' BGS	704
H10205-7	BH #3-45' BGS	368
Quality Control		1020
True Value QC		1000
% Recovery		102
Relative Percent Difference		0.2

METHOD: Standard Methods	4500-ClB

Note: Analyses performed on 1:4 w:v aqueous extracts.

Amy Hill
Chemist

9/20/05
Date

H10205

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
OCOTILLO ENVIRONMENTAL
ATTN: J. BRIAN
414 N. TURNER
HOBBS, NM 88240
FAX TO: (505) 393-6374

Receiving Date: 09/21/05
Reporting Date: 09/22/05
Project Number: SAM-05-001
Project Name: LIVESTOCK 30
Project Location: LEA COUNTY, NM

Analysis Date: 09/22/05
Sampling Date: 09/20/05
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl^- (mg/Kg)
H10212-1	BH #4-15' BGS	3551
H10212-2	BH #4-20' BGS	5998
H10212-3	BH #4-25' BGS	14080
H10212-4	BH #4-30' BGS	6718
H10212-5	BH #4-35' BGS	2799
H10212-6	BH #4-40' BGS	1424
H10212-7	BH #4-45' BGS	1232
Quality Control		1020
True Value QC		1000
% Recovery		102
Relative Percent Difference		2.0

METHOD: Standard Methods	4500-Cl^-B

Note: Analyses performed on 1:4 w:v aqueous extracts.

Amy Hill
Chemist

9/22/05
Date

H10212

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
OCOTILLO ENVIRONMENTAL
ATTN: J. BRIAN
414 N. TURNER
HOBBS, NM 88240
FAX TO: (505) 393-6374

Receiving Date: 09/20/05
Reporting Date: 09/20/05
Project Number: SAM-05-001
Project Name: LIVESTOCK 30
Project Location: LEA COUNTY, NM

Analysis Date: 09/20/05
Sampling Date: 09/19/05
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: HM

LAB NUMBER	SAMPLE ID	Cl^- (mg/Kg)
H10206-1	BH #5-15' BGS	3007
H10206-2	BH #5-20' BGS	5726
H10206-3	BH #5-25' BGS	3039
H10206-4	BH #5-30' BGS	3839
H10206-5	BH #5-35' BGS	2031
H10206-6	BH #5-40' BGS	1104
H10206-7	BH #5-45' BGS	1168
Quality Control		1020
True Value QC		1000
% Recovery		102
Relative Percent Difference		0.2

METHOD: Standard Methods	4500-Cl^-B

Note: Analyses performed on 1:4 w:v aqueous extracts.

Amy Hill
Chemist

9/20/05
Date

H10206

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
OCOTILLO ENVIRONMENTAL
ATTN: J. BRIAN
414 N. TURNER
HOBBS, NM 88240
FAX TO: (505) 393-6374

Receiving Date: 09/19/05
Reporting Date: 09/19/05
Project Number: SAM-05-001
Project Name: LIVESTOCK 30 STATE #1
Project Location: LEA COUNTY, NM

Analysis Date: 09/19/05
Sampling Date: 09/16-09/15/05
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: HM

LAB NUMBER	SAMPLE ID	Cl^- (mg/Kg)
H10201-1	BH #6-15' BGS	16
H10201-2	BH #6-20' BGS	16
H10201-3	BH #6-25' BGS	32
H10201-4	BH #6-30' BGS	32
H10201-5	BH #7-15' BGS	112
H10201-6	BH #7-20' BGS	80
H10201-7	BH #7-25' BGS	32
H10201-8	BH #7-30' BGS	16
H10201-9	BH #8-15' BGS	16
H10201-10	BH #8-20' BGS	128
H10201-11	BH #8-25' BGS	128
H10201-12	BH #8-30' BGS	112
H10201-13	BH #9-15' BGS	224
H10201-14	BH #9-20' BGS	64
H10201-15	BH #9-25' BGS	240
H10201-16	BH #9-30' BGS	48
Quality Control		1020
True Value QC		1000
% Recovery		102
Relative Percent Difference		0.2

METHOD: Standard Methods	4500-ClB

Note: Analyses performed on 1:4 w:v aqueous extracts.

Amy Hill
Chemist

9/19/05
Date

H10201

CARDINAL LABORATORIES

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

RECEIVED
Environmental Safety Services
MAY 2 0 2005

ANALYTICAL RESULTS FOR
SAMSON
ATTN: TOM KOSCELNY
TWO WEST SECOND ST.
TULSA, OK 74103-3103
FAX TO: (918) 591-7386

Receiving Date: 05/11/05
Reporting Date: 05/13/05
Project Number: NOT GIVEN
Project Name: NEW MEXICO PIT SAMPLING
Project Location: NOT GIVEN

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

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE		05/11/05	05/11/05	05/12/05
H9786-1	NE CORNER PQ OSUDO #2	<10.0	15.1	1600
H9786-2	NW CORNER PQ OSUDO #2	<10.0	238	1380
H9786-3	SE CORNER PQ OSUDO #2	<10.0	238	176
H9786-4	SW CORNER PQ OSUDO #2	<10.0	529	144
H9786-5	CENTER PQ OSUDO #2	<10.0	262	12400
H9786-6	NE CORNER LIVESTOCK	<10.0	70.6	3920
H9786-7	NW CORNER LIVESTOCK	<10.0	<10.0	4160
H9786-8	SE CORNER LIVESTOCK	<10.0	549	6880
H9786-9	SW CORNER LIVESTOCK	<10.0	<10.0	5520
H9786-10	CENTER LIVESTOCK	<10.0	262	8080
Quality Control		738	792	960
True Value QC		800	800	1000
% Recovery		92.2	99.0	96.0
Relative Percent Difference		0.7	3.2	1.0

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

5/13/05
Date

H9786A.XLS

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAMSON
ATTN: TOM KOSCELNY
TWO WEST SECOND ST.
TULSA, OK 74103-3103
FAX TO: (918) 591-7386

Receiving Date: 05/11/05
Reporting Date: 05/13/05
Project Number: NOT GIVEN
Project Name: NEW MEXICO PIT SAMPLING
Project Location: NOT GIVEN

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

LAB NO.	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		05/11/05	05/11/05	05/11/05	05/11/05
H9786-1	NE CORNER PQ OSUDO #2	<0.005	<0.005	<0.005	<0.015
H9786-2	NW CORNER PQ OSUDO #2	<0.005	<0.005	<0.005	<0.015
H9786-3	SE CORNER PQ OSUDO #2	<0.005	<0.005	<0.005	<0.015
H9786-4	SW CORNER PQ OSUDO #2	<0.005	<0.005	<0.005	<0.015
H9786-5	CENTER PQ OSUDO #2	0.026	0.528	0.128	0.889
H9786-6	NE CORNER LIVESTOCK	<0.005	<0.005	<0.005	<0.015
H9786-7	NW CORNER LIVESTOCK	<0.005	<0.005	<0.005	<0.015
H9786-8	SE CORNER LIVESTOCK	<0.005	<0.005	<0.005	<0.015
H9786-9	SW CORNER LIVESTOCK	<0.005	<0.005	<0.005	<0.015
H9786-10	CENTER LIVESTOCK	<0.005	<0.005	<0.005	<0.015
Quality Control		0.090	0.087	0.094	0.276
True Value QC		0.100	0.100	0.087	0.300
% Recovery		89.7	87.2	87.2	92.1
Relative Percent Difference		2.7	<0.1	3.0	0.7

METHOD: EPA SW-846 8260

Burgess J.A. Cooke
Chemist

5/13/05
Date

H9786BTXS

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(325) 673-7001 Fax (325) 673-7020 (505) 393-2326 Fax (505) 393-2476

Page____ of ____

Company Name:	Ocotillo Env	BILL TO	
Project Manager:	Brian	P.O. #:	
Address:	414 W. Turner	Company:	
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	393-6371 Fax #: 393-6374	Address:	
Project #:	SAM-05-001 Project Owner: Samson Resources	City:	
Project Name:	Livestock 30 State #1	State: Zip:	
Project Location:	Lea County	Phone #:	
Sampler Name:	Brian	Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX	Chlorides
H10200-1	BH#1 -15' BGS	G				X							9/16/05	2:10 pm		
-2	" -20' BGS													2:25		
-3	" -25' BGS													2:40		
-4	" -30' BGS													3:25		
-5	" -35' BGS													4:00		
-6	" -40' BGS	↓				↓							↓	4:30	↓	X

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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: Brian	Date: 9/16/05 Time: 9:00 AM	Received By:	Phone Result: ☐ Yes ☐ No
Relinquished By:	Date: Time:	Received By: (Lab Staff)	Fax Result: ☐ Yes ☐ No REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Temp, °C: Intact? ☑ Yes ☐ No	Checked By: (Initials) MA	

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (325) 673-7001 Fax (325) 673-7020

101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page____ of ____

		BILL TO	
Company Name:	Ocotillo	P.O. #:	
Project Manager:	J Brim	Company:	
Address:	414 N. Turner	Attn:	
City:	Hobbs	State: NM Zip: 88240	Address:
Phone #:	393-6371	Fax #: 393-6374	City:
Project #:	SAM-05-001	Project Owner: Samson Resources	State: Zip:
Project Name:	Livestock 30		Phone #:
Project Location:	Lea County		Fax #:
Sampler Name:	J Brim		

ANALYSIS REQUEST: BTEX

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME
H10213-1	BH # 2 - 15 BDS	G				X							9/20/05	11:00 AM
-2	20' BDS													11:30
-3	25' BDS													12:00 PM
-4	30' BDS													12:30
-5	35' BDS													1:00
-6	40' BDS													1:30
-7	45 BDS													2:00 PM

Sampler Relinquished: J Brim	Date: 9/21/05	Received By:	Phone Result: ☐ Yes ☐ No
	Time: 10:22 AM		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date:	Received By: (Lab Staff)	REMARKS:
	Time:		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Temp, °C: Intact? ☑ Yes ☐ No	Checked By: (Initials)	

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CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(325) 673-7001 Fax (325) 673-7020 (505) 393-2326 Fax (505) 393-2476

Page____ of ____

Company Name:	Ocotillo	**BILL TO**	ANALYSIS REQUEST
Project Manager:	B. Brian	P.O. #:	
Address:	414 N. Turner	Company:	
City:	Hobbs	State: NM Zip: 88240	Attn:
Phone #:	393-6371	Fax #: 393-6374	Address:
Project #:	SAM-05-001	Project Owner: Samson Resources	City:
Project Name:	Livestock 30		State: Zip:
Project Location:	Lea County, NM		Phone #:
Sampler Name:	B. Brian		Fax #:

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Cl
H10205-1	BH#3 - 15' BGS	G				X							9/19/05	10:00 AM	
-2	- 20' BGS													10:15	
-3	25' BGS													10:30	
-4	30' BGS													10:45	
-5	35' BGS													11:10	
-6	40' BGS													11:30	
-7	45' BGS	↓				↓							↓	12:00	↓

Sampler Relinquished: B. Brian	Date: 9/19/05 Time: 6:10 AM	Received By:	Phone Result: ☐ Yes ☐ No
Relinquished By:	Date: 9/20/05 Time:	Received By: (Lab Staff)	Fax Result: ☐ Yes ☐ No
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Temp, °C; Intact? ☒ Yes ☐ No	Checked By: (Initials)	REMARKS:

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CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 (325) 673-7001 Fax (325) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page ____ of ____

		BILL TO	ANALYSIS REQUEST
Company Name:	Cactillo	P.O. #:	
Project Manager:	J Brim	Company:	
Address:	414 N. Turner	Attn:	
City:	Hobbs State: NM Zip: 88240	Address:	
Phone #:	393-6371 Fax #: 393-6374	City:	
Project #:	SAM-05-001 Project Owner: Samson Resources	State: Zip:	
Project Name:	Livestock 30	Phone #:	
Project Location:	Lea County	Fax #:	
Sampler Name:	J Brim		

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING DATE	SAMPLING TIME	BTEX
H10212-1	BH #4 – 15' Bbs	C				X							9/20/05	8:00 AM	
-2	20' Bbs													8:20	
-3	25' Bbs													8:40	
-4	30' Bbs													9:05	
-5	35' Bbs													9:25	
-6	40' Bbs													9:50	
-7	45' Bbs													10:15	

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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: J Brim	Date: 9/21/05 Time: 10:17 AM	Received By:	Phone Result: ☐ Yes ☐ No
Relinquished By:	Date: Time:	Received By: (Lab Staff)	Fax Result: ☐ Yes ☐ No
Delivered By: (Circle One) Sample - UPS - Bus - Other:	Sample Condition: Temp, °C; Intact? ☑ Yes ☐ No	Checked By: (Initials) MT	REMARKS:

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CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page____ of____

Company Name: Castillo		BILL TO	
Project Manager: G. Brim		P.O. #:	
Address: 414 N. Turner		Company:	
City: Hobbs	State: NM Zip: 88240	Attn:	
Phone #: 393-6371	Fax #: 393-6374	Address:	
Project #: SAM-05-001	Project Owner: Samson Resources	City:	
Project Name: Livestock 30		State: Zip:	
Project Location: Lea County, NM		Phone #:	
Sampler Name: G. Brim		Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST
H10706-1	BH#5-15 BGS	G				X							9/19/05	1:30 PM	
-2	20' BGS													1:45	
-3	25' BGS													2:10	
-4	30' BGS													2:30	
-5	35' BGS													3:00	
-6	40' BGS													3:25	
-7	45' BGS													3:50	
-8	BH#1 (T.M.W.) 50' BGS	G		X									9/19/05	4:00	

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 the client for the 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 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.

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: G. Brim	Date: 9/19/05 Time: 8:20	Received By:	Phone Result: ☐ Yes ☐ No
Relinquished By:	Date: 9/20/05 Time:	Received By: (Lab Staff) Nick Fullerton	Fax Result: ☐ Yes ☐ No REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Temp, °C / Intact? ☐ Yes ☐ No	Checked By: (Initials)	

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES, INC.
2111 Beechwood, Abilene, TX 79603 (325) 673-7001 Fax (325) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page____ of ____

Company Name: Ocotillo Env	**BILL TO**
Project Manager: J Brim	P.O. #:
Address: 414 W. Turner	Company:
City: Hobbs State: Zip:	Attn:
Phone #: Fax #:	Address:
Project #: SAM-05-001 Project Owner: Samson Resources	City:
Project Name: Livestock 30 State #1	State: Zip:
Project Location: Lea County	Phone #:
Sampler Name: J Brim	Fax #:

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: Cl							
H10201-1	BH#6 - 15' BBS	G				X							9/16/05	7:55 Am	✓							
-2	" - 20' BBS	↓				↓							↓	8:40 Am	↓							
-3	- ~~25~~ 25' BBS	↓				↓							↓	9:00 Am	↓							
-4	- 30' BBS	↓				↓							↓	9:20 Am	↓							
-5	BH #7 - 15' BBS	↓				↓							9/15/05	2:50PM	↓							
-6	-20' BBS	↓				↓							↓	3:00PM	↓							
-7	25' BBS	↓				↓							↓	3:15PM	↓							
-8	30' BBS	↓				↓							↓	3:30PM	↓							

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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: J Brim	Date: 9/19/05 Time: 9:05AM	Received By:	Phone Result: ☐ Yes ☐ No Fax Result: ☐ Yes ☐ No REMARKS:
Relinquished By:	Date: Time:	Received By: (Lab Staff) [signature]	
Delivered By: (Circle One) (Sampler) UPS - Bus - Other:	Sample Condition Temp. °C Intact? ☑ Yes ☐ No	Checked By: (Initials) NJ	

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CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 (325) 673-7001 Fax (325) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page ____ of ____

Company Name: Ocotillo Env.	BILL TO		ANALYSIS REQUEST
Project Manager: J Brim	P.O. #:		
Address: 414 N. Turner	Company:		
City: Hobbs State: NM Zip:	Attn:		
Phone #: 393-6371 Fax #: 393-6374	Address:		
Project #: SAM-05-001 Project Owner: Samson Resources	City:		
Project Name: Livestock 30 - State #1	State: Zip:		
Project Location: Lea County	Phone #:		
Sampler Name: J Brim	Fax #:		

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	1/0
H10201-9	BH# 8 - 15' BDS	G				X							9/16/05	11:00 AM	
-10	- 20' BDS													11:20 AM	
-11	25' BDS													12:00 PM	
-12	30' BDS													12:10 PM	
-13															
-13	BH #9 - 15' BDS												9/15/05	11:50 AM	
-14	20' BDS													12:00 PM	
-15	25' BDS													12:05 PM	
-16	30' BDS													12:35 PM	

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 the client for the 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 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.

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: J Brim	Date: 9/19/05 Time: 9:11 AM	Received By:	Phone Result: ☐ Yes ☐ No
Relinquished By:	Date: Time:	Received By: (Lab Staff)	Fax Result: ☐ Yes ☐ No REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Temp, °C: Intact? ☐ Yes ☐ No	Checked By: (Initials)	

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CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

Company Name:	E Samson	BILL TO	PO #:
Project Manager:	Roseley	Company:	
Address:	Two West Second St.	Attn:	Same
City:	Tulsa State OK Zip: 74103	Address:	
Phone #:	(918) 591-1386	City:	
Fax #:	(918) 591-7386	State:	Zip:
Project #:	Project Owner:	Phone #:	
Project Name:	New Mexico P.I Sampling	Fax #:	
Project Location:			

ANALYSIS REQUEST

RECEIVED
Environ
MAY 2 0 2005

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRES.: ACID:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	TPH (GRO+DRO)	BTEX	Chlorides
H9786-1	NE Corner					X					X		5/11/05		X	X	X
-2	NW																
-3	SE	PQ Quad #2															
-4	SW																
-5	Center																
-6	NE	Live Stock															
-7	NW	Livestock															
-8	SE																
-9	SW																
-10	Center					↓					↓		5/11/05		X	X	X

Sampler Relinquished:	Date: 5/11/05	Received By:	
	Time:		
Relinquished By:	Date:	Received By: (Lab Staff)	
	Time:		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Additional Fax #:
Fax Result: ☐ Yes ☐ No
REMARKS:

Fax to (918) 591-7386

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