HOLLAND&HART LLP

William F. Carr
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March 1, 2011

VIA HAND DELIVERY

Mr. Daniel Sanchez
Acting Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Case 14617

RECEIVED OCD
2011 MAR -1 P 4:48

Re: Application of Shell Exploration & Production Co. for approval of a salt water disposal well, Guadalupe County, New Mexico.

Dear Mr. Sanchez:

Enclosed is an original and one copy of the application of Shell Exploration & Production Co. in the above-referenced case (Oil Conservation Division Form C-108) as well as a copy of a legal advertisement.

Shell Exploration & Production Co. requests that this matter be placed on the docket for the March 31, 2011 Examiner Hearings.

Very truly yours,

William F. Carr
Ocean Munds-Dry
Attorneys for Shell Exploration & Production Co.

cc: Oil Conservation Division
District IV
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Shell Exploration & Production

State of New Mexico
Energy, Minerals and Natural Resources Dept.
Oil Conservation Division
Engineering and Geological Services Bureau
1220 South St. Francis Drive
Sante Fe, New Mexico 87505
Attn.: Will Jones

Shell Exploration & Production Co.
Regulatory Affairs-EP Americas
4582 S. Ulster Street Parkway
Suite 1400
Denver, Colorado 80237

December 3, 2010

Case 14617

Subject: Application for Authorization to Inject
Shell Exploration & Production Co., Webb 3-23 (API No. 30-019-20135)
Guadalupe County, New Mexico

Dear Mr. Jones:

Shell Exploration & Production Company (Shell), as service provider to SWEPI LP in New Mexico, is submitting our Application for Authorization to Inject (Form C-108) for the subject well to New Mexico Oil Conservation Division- Engineering and Geological Services Bureau (OCD) for your review and approval. Shell proposes to conduct a one-time disposal of flowback and produced water from our exploration project into the subject well, which is currently in temporary abandonment pending further evaluation of this wildcat prospect.

Shell has initiated notification of the surface owner and publication of a legal advertisement. Proof of notice will be provided upon completion.

If you have any questions or require any additional information regarding this application, please contact me at (303) 222-6347, or David Janney at AMEC in Albuquerque at (505) 821-1801.

Regards,

Michael L. Bergstrom
Senior Regulatory Advisor
Shell Exploration & Production Company

Attachments: Form C-108
Appendices

Cc: Ed Martin, District 4 Supervisor

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

Case 14617

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____Secondary Recovery _____Pressure Maintenance ___X___Disposal _____Storage
Application qualifies for administrative approval? ___X___Yes _____No

II. OPERATOR: SWEPI LP

ADDRESS: P.O. Box 576, Houston, Texas 77001

CONTACT PARTY: Michael L. Bergstrom, Senior Regulatory Advisor PHONE: (303) 222-6347

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____Yes ___X___No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

The Webb CD-1 and the Latigo Ranch 2-34 gas wells are within a two mile radius of the proposed injection well (Webb 3-23) and their locations are shown on Figure 1(Appendix A).

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

Other than the proposed injection well, the Webb 3-23, no wells of public record lie within the one-half mile Area of Review (AOR) that penetrate the proposed injection zone. Please refer to OCD Online for detailed construction and completions data for the Webb 3-23 gas well (API No. 30-019-20135).

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;

   The proposed avg. daily rate is 3 barrels per minute (bpm) and the proposed avg. daily volume is 4,300 barrels per day (bpd). The proposed maximum daily rate is 6 bpm and the maximum daily volume is 8,640 bpd.

2. Is the system open of closed?

   The system is closed.

3. Proposed average and maximum injection pressure;

   The proposed avg. injection pressure is 4,500 pounds per square inch (psi) and the proposed maximum injection pressure is 8,900 psi.

4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation, if other than reinjected produced water;

   The injection fluid will be produced and stimulation water generated from the Webb 3-23 and the Webb CD-1 gas wells. This water has been commingled in the completion pit on the Webb 3-23 well location. Laboratory analytical results for the injection fluid are presented in Appendix B.

5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

   The New Mexico Office of the State Engineers iWATERS database was searched for water quality results for wells in the area and no wells were identified that penetrated the proposed injection zone. Water Resources of Guadalupe County, New Mexico, New Mexico Bureau of Mines and Mineral Resources (NMBMMR), Hydrologic Report No. 8 was also reviewed and no wells were reported that penetrated the proposed injection

zone. Petroleum Geology of Pennsylvanian and Lower Permian strata, Tucumcari Basin, East-central, New Mexico, NMBMMR, Bulletin 119 was also reviewed and no water quality was reported for the proposed injection zone.

Mr. Ron Broadhead, petroleum geologist with the NMBMMR provided data on the Trans Pecos Latigo Ranch No. 1 C and the Trans Pecos Riley 35. These wells are located in Section 4 Twp. 9N; Rng. 23E and Section 35 Twp.10N; Rng. 24E, respectively. Data from the Trans-Pecos Latigo Ranch No. 1C is from swab runs in the Pennsylvanian and the data from the Riley 35 is from swab runs in the San Andres Formation. The laboratory analytical results indicate that water in the San Andres and Pennsylvanian have total dissolved solids concentrations (TDS) above 10,000 mg/l. Water from swab runs in the Pennsylvanian have TDS concentrations ranging from 36,454 mg/l and 191,179 mg/l, and chloride concentrations ranging from 16,000 mg/l to 132,000 mg/l. The laboratory analytic results for these wells are presented in Appendix C.

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth.

The geologic name of the formation in the proposed injection zone is the Pennsylvanian Magdalena Group, which is composed of three series of rocks which include, from oldest to youngest, the Atokan, Strawn, and Canyon Series. Only the Atokan and Strawn Series rocks are included in the proposed injection zone. The Atokan Series consists of gray mudstone and minor fine-grained sandstone and may be up to 100 feet thick. The Strawn Series consists of marine limestone, coarse-grained conglomeratic arkosic to quartzose sandstone and gray mudstone and may be up to 1,136 feet thick. Depth to the top of the Pennsylvanian is estimated to be 8,000 feet.

Please refer to OCD Online for detailed mud logs for the Webb 3-23 gas well (API No. 30-019-20135).

Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with TDS concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

Relatively shallow fresh water occurs in sandstone lenses in the upper Chinle Formation at a maximum depth of approximately 685 feet. While fresh water may occur in the Chinle Formation below 685, it is does not occur in useable quantities and it is not penetrated by any wells within two miles of the proposed injection well. No useable fresh water exists below approximately 685 feet until the upper sandstone bed of the Santa Rosa Formation is encountered at approximately 870 feet. The Santa Rosa Formation is the deepest fresh water-bearing formation overlying the proposed injection zone. The Santa Rosa Formation consists of an upper sandstone member, middle shale member, and lower sandstone member. The upper sandstone is brown to gray to white, fine-grained and locally calcareous. The shale member is red to gray. The lower sandstone is brown to gray to white, fine to med-grained and locally calcareous. Thicknesses of these members are variable but the Santa Rosa Formation, as a whole, may be up to 355 feet thick in eastern New Mexico. The depth to the bottom of the Santa Rosa Formation is estimated to be approximately 1,155 feet within one-half mile of the proposed injection well; therefore the Santa Rosa Formation at this location is approximately 285 feet thick. Freshwater bearing formations have not been identified below the Santa Rosa Formation in this general area. It is assumed that all formations encountered below the Santa Rosa Formation contain water with TDS concentrations above 10,000 mg/l.

IX. Describe the proposed stimulation program, if any.

No stimulation program is proposed.

*X. Attach appropriate logging and test data on the well.

Please refer to OCD Online for logging and test data for well API No. 30-019-20135 (Webb 3-23).

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

No chemical analysis exists for the Webb 3-23 water supply well (CR 05133), which is located approximately 500 feet east of the proposed injection well. There are no other water supply wells within 1.7 miles of the proposed injection well. The Webb CD-1 water supply well (CR 04512) is located approximately 1.7 miles southeast of the Webb 3-23 gas well and approximately 1,300 feet northwest of the Webb CD-1 gas well as shown on Figure 1.

The Webb CD-1 water supply well is completed in the Santa Rosa Formation, as is the Webb 3-23 water supply well, therefore, the water chemistry should be very similar, if not identical. Laboratory analytical results for the Webb CD-1water well, sampled on April 10, 2006, are included in Appendix D. The Webb CD-1 water supply well is the deepest fresh water well in the general area of the proposed injection well for which there exists laboratory analytical results. The construction details of each of these water supply wells are presented in Appendix E, Table 1.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

Shell Exploration & Production Company (Shell), as service provider to SWEPI LP in New Mexico, has examined the available geologic and geophysical logs, and available engineering data and find no evidence of open faults or any other hydrogeologic connection between the proposed disposal zones and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Michael L. Bergstrom TITLE: Senior Regulatory Advisor

SIGNATURE: Michael L Bergstrom DATE: December 2, 2010

E-MAIL ADDRESS: Michael.Bergstrom@shell.com

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Side 2

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) **The lease name is Hage and Webb Land and Cattle Co. Webb 34-23. The well is located in Section 23, Twp. 11N, Rng. 23E, 1654 feet from the south line and 1646 feet from the west line of Section 23.**
(2) **See *Injection Well Data Sheets, following on Pages 6 and 7 of this application.***
(3) **The tubing to be used will be 2 3/8" diameter coiled tubing with no lining material and a maximum setting depth of 13,076 feet (below the packer).**
(4) **Baker packer is set at 12,016.**

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) **Injection formation or pool name is the Cuervo Hill Pennsylvanian (pool code 97811) in the Webb Ranch Field.**
(2) **The injection intervals are perforated at 0.28" and 6 per foot in the interval.**
(3) **The original purpose of the well was for natural gas exploration/production.**
(4) **Depths of any the perforated intervals are presented below and a well sketch is presented in Figure 2 (Appendix A).**

Intervals	Size	Number
10,602'-10,695'	0.28"	6/foot
11,125'-11,199'	0.28"	6/foot
11,572'-11,679'	0.28"	6/foot
11,756'-11,842'	0.28"	6/foot
11,903'-12,010'	0.28"	6/foot
12,071'-12,163'	0.28"	6/foot
12,223'-12,428'	0.28"	6/foot
12,480'-12,581'	0.28"	6/foot
12,625'-12,767'	0.28"	6/foot
12,869'-13,000'	0.28"	6/foot
13,034'-13,078'	0.28"	6/foot

935 sx of cement used for 4 ½" production casing from 0-13,309'

(5) **No other gas or oil –producing zones, either above or below the proposed injection zone have been identified in the area of the proposed injection well.**

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include: The Public Notice will include the data below;

(1) The name, address, phone number, and contact party for the applicant is;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(2) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

Side 1

INJECTION WELL DATA SHEET

OPERATOR: SWEPI LP

LEASE NAME: Hage and Webb Land and Cattle Company

WELL NAME & NUMBER: Webb 3-23

WELL LOCATION: 1654' from S. Line/1646' from W. Line K 23 11N 23E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 14.75-inch

Casing Size: 10.75-inch

Cemented with: 636 sx.

or _____ ft^3

Top of Cement: 0 feet

Method Determined: _____

Intermediate Casing

Hole Size: 9.875-inch

Casing Size: 7.625-inch

Cemented with: 1,178 sx.

or _____ ft^3

Top of Cement: 6,500 feet

Method Determined: _____

Production Casing

Hole Size: 6.5-inch

Casing Size: 4.5-inch

Cemented with: 935 sx.

or _____ ft^3

Top of Cement: 4,200 est

Method Determined: _____

Total Depth: 13,327feet

Injection Interval

10,602 feet To 13,078 feet

(Perforated or Open Hole; indicate which)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 2.375-inch / 4.7 wt. Lining Material: L-80

Type of Packer: Baker, 1.875-inch bore

Packer Setting Depth: 12,016 feet

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? _____Yes _____X___No

   If no, for what purpose was the well originally drilled? originally drilled as a wildcat well for natural gas exploration/production

2. Name of the Injection Formation: Cuervo Hills Pennsylvanian

3. Name of Field or Pool (if applicable): Webb Ranch Field, Tucumcari Basin pool code 97811

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No, see item III B. 4 above for the perforated intervals and details.

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: No oil or gas-producing zones have been identified underlying or overlying the injection zone in this area.

29-Dec-09

FIGURE 2

Webb 3-23 Mechanical Well Sketch

Webb Ranch Field

Surface: 1654' FSL, 1646' FWL, Sec 23, T11N, R23E

Surface Elevation: 4554' KB: 22' to GL

API#: 30-019-20135

	Casing	Depth (From-To)		Size	Wt	Grade	Burst	Collapse	Collar	Drift	ID	bbl/ft	Hole	Mud	Cement	TOC	Comments
CSG. Info	Surf	0	971	10 3/4"	40.5#	K-55	3130	1580	STC R3	9.894	10.05	0.0981	14.75	8.4	636 sx	Surface	Bumped Plug, Floats Held, Full returns
	Prot	0	5,891	7 5/8"	29.7#	P-110	9470	5340	LTC	6.75	6.875	0.0459	9.875	9.6	1178 sx	6500'	Bumped Plug, Floats Held, Full returns
	Prod	0	13,309	4-1/2"	13.5#	P-110	12410	10670	DWC	3.795	3.92	0.0149	6	10.1	935 sx	4200' est	Bumped Plug, Floats Held, Full returns

NOTE: Per Casing Report: Flag Joints @ 9508, 10986, 12476 FC @ 13298' Per CBL: Flag Joints @ 9490', 10,980', 12,459' FC @ 13,281'.

	Depth	Size	Wt.	Grade	Coupling	Drift	Burst	Collapse	ID	bbl/ft
TBG. Info.	12016	2 3/8	4.7	L80	EUE 8rd	1.901	9840	11780	1.995	0.00387

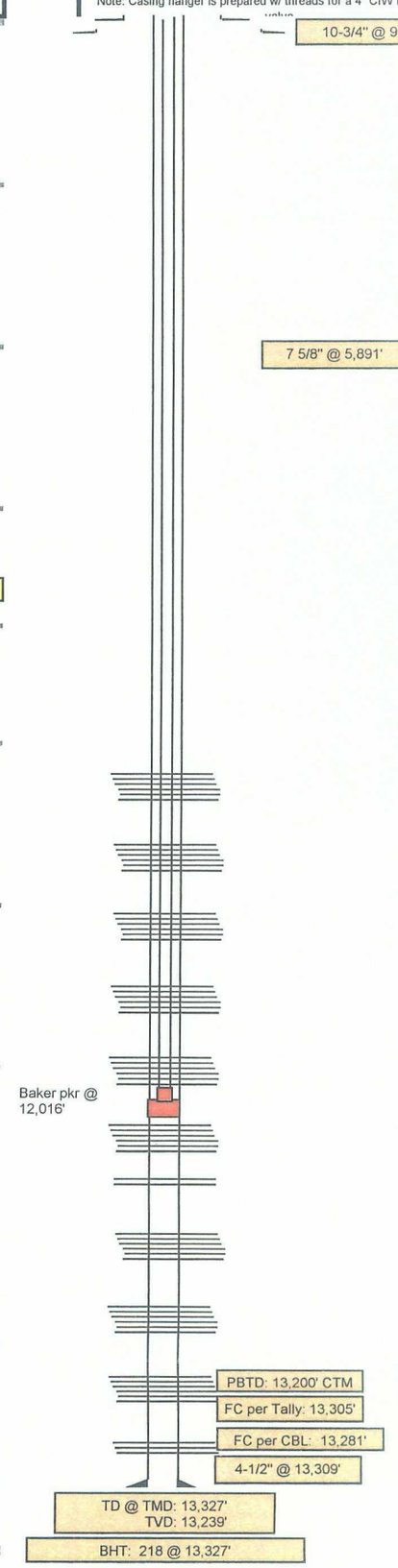
	Depth	Size	MFG	TYPE	Profile ID	NO GO ID
LNDG NIPPLE info.	11986	2 3/8"	Bkr	BX	1.875	

PACKER DETAIL	Depth	Type	Bore
	12016	Bkr	1.875

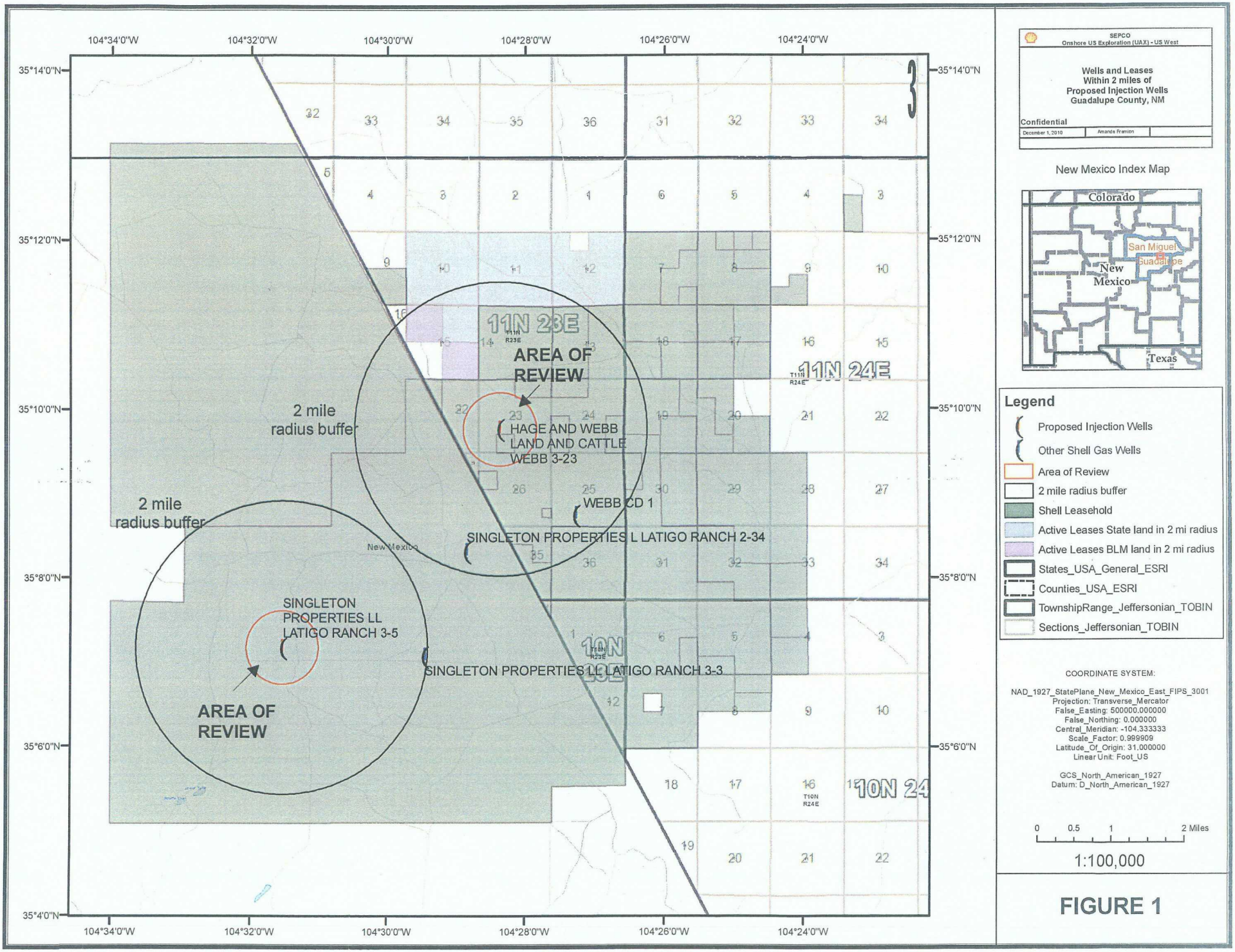
Stage	Perf Top	Perf Bot	Shots	Status	Rate (bbl/min)	Date Frac'ed	F.G.	Proppant Information size	Type	Lbs	mm/yy	BHP	BHT
11	10,602	10,604	12	Open	30	15-Dec-09	0.641	-	-	0	Oct-08	4,840	196
	10,625	10,627	12	backside			by TVD	30/50	ulk Sand 20/4	170000			
	10,647	10,649	12										
	10,682	10,684	12										
	10,693	10,695	12										
10	11,125	11,127	12	Open	30	15-Dec-09	0.639	-	-	0	Oct-08	4,950	198
	11,146	11,148	12	backside			by TVD	30/50	ulk Sand 20/4	171760			
	11,165	11,167	12										
	11,187	11,189	12										
	11,197	11,199	12										
9	11,572	11,574	6	Open	30	26-Nov-08	0.652	-	-	0	Oct-08	5,020	200
	11,588	11,589	3	backside			by TVD	20/40	Econoprop	157000			
	11,609	11,610	3										
	11,631	11,632	3										
	11,644	11,645	3	FG high due to gas ?									
	11,658	11,659	3										
	11,678	11,679	3			60 Quality N2 pumped							
8	11,756	11,757	3	Open	30	25-Nov-08	0.652	-	-	0	Oct-08	5,100	202
	11,776	11,777	3	backside			by TVD	20/40	Econoprop	132,743			
	11,799	11,800	3										
	11,818	11,820	6	FG high due to gas in the wellbore Screened out with 93.5% pumped in formation									
	11,840	11,842	6			60 Quality N2 pumped							
7	11,903	11,904	3	Open	30	22-Nov-08	0.649			0	Oct-08	5,160	204
	11,930	11,932	6	backside			by TVD	20/40	Econoprop	135000			
	11,969	11,970	3										
	11,993	11,995	6										
	12,008	12,010	6			60 Quality N2 pumped							
6	12,071	12,072	3	Open	30	22-Nov-08	0.688	-	-	0	Oct-08	5,230	205
	12,091	12,092	3				by TVD	20/40	Econoprop	12,000			
	12,114	12,115	3						Versaprop	100,000			
	12,126	12,127	3										
	12,142	12,143	3										
	12,150	12,151	3										
	12,162	12,163	3			60 Quality N2 pumped							
5	12,223	12,224	3	Open	30	21-Nov-08	0.603	-	-	0	Oct-08	5,345	207
	12,247	12,248	3				by TVD		Versaprop	128000			
	12,276	12,277	3										
	12,346	12,347	3			FG high due to gas ?							
	12,379	12,380	3										
	12,405	12,406	3	60 Quality N2 pumped									
	12,426	12,428	6	Shot perfs from 12,440-12,442'.									
4	12,480	12,481	3	Open	30	30-Oct-08	0.601	-	-	0	Oct-08	5,410	210
	12,490	12,491	3				by TVD		Versaprop	86200			
	12,501	12,502	3					20/40	Carboprop	56,800			
	12,522	12,523	3										
	12,544	12,545	3										
	12,565	12,566	3	FG high due to gas ?									
	12,579	12,581	6	60 Quality N2 pumped									
3	12,625	12,626	3	Open	30	28-Oct-08	0.597	-	-	0	Oct-08	5,500	211
	12,652	12,654	6				by TVD	20/40	CP 20/40	105000			
	12,692	12,693	3										
	12,705	12,706	3										
	12,766	12,767	3	60 Quality N2 pumped									
2	12,869	12,871	6	Open	30	28-Oct-08	0.709	-	-	0	Oct-08	5,590	214
	12,910	12,911	3				by TVD	20/40	CP 20/40	52,000			
	12,930	12,931	3										
	12,950	12,951	3	FG high due to gas in the wellbore Screened out with 53% pumped in formation									
	12,972	12,973	3										
	12,998	13,000	6	60 Quality N2 pumped									
1	13,034	13,039	15	Open	22	4-Oct-08	0.646	20/40	Bauxite	14,600	Oct-08	5,700	215
	13,052	13,057	15				by TVD	20/40	CP 20/40	86,400			
	13,068	13,078	30	60 Quality N2 pumped									

Upper Tree:	
Lower Tree:	4-1/16", 10K
Tbg Spool:	5-1/8", 10k

Note: Casing hanger is prepared w/ threads for a 4" CIW backpressure



APPENDIX A



SEPCO
Onshore US Exploration (UAX) - US West

Wells and Leases Within 2 miles of Proposed Injection Wells Guadalupe County, NM

Confidential

December 1, 2010	Amanda Fremion	

New Mexico Index Map

Legend

- Proposed Injection Wells
- Other Shell Gas Wells
- Area of Review
- 2 mile radius buffer
- Shell Leasehold
- Active Leases State land in 2 mi radius
- Active Leases BLM land in 2 mi radius
- States_USA_General_ESRI
- Counties_USA_ESRI
- TownshipRange_Jeffersonian_TOBIN
- Sections_Jeffersonian_TOBIN

COORDINATE SYSTEM:

NAD_1927_StatePlane_New_Mexico_East_FIPS_3001
Projection: Transverse_Mercator
False_Easting: 500000.000000
False_Northing: 0.000000
Central_Meridian: -104.333333
Scale_Factor: 0.999909
Latitude_Of_Origin: 31.000000
Linear Unit: Foot_US

GCS_North_American_1927
Datum: D_North_American_1927

0 0.5 1 2 Miles

1:100,000

FIGURE 1

APPENDIX B

Hall Environmental Analysis Laboratory, Inc.

Date: *19-Nov-10*

CLIENT:	AMEC	Client Sample ID:	CD1-11210-4
Lab Order:	1011172	Collection Date:	11/2/2010 1:45:00 PM
Project:	Shell-Cuervo	Date Received:	11/3/2010
Lab ID:	1011172-01	Matrix:	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	5.1	3.0		mg/L	1	11/5/2010 10:42:52 AM
Motor Oil Range Organics (MRO)	ND	15		mg/L	1	11/5/2010 10:42:52 AM
Surr: DNOP	118	86.9-151		%REC	1	11/5/2010 10:42:52 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.50		mg/L	10	11/4/2010 10:37:38 AM
Surr: BFB	98.7	84.5-118		%REC	10	11/4/2010 10:37:38 AM
EPA METHOD 300.0: ANIONS						Analyst: **SRM**
Fluoride	ND	5.0		mg/L	50	11/5/2010 2:01:34 AM
Chloride	82000	5000		mg/L	10000	11/5/2010 2:12:55 PM
Nitrogen, Nitrite (As N)	ND	100		mg/L	1000	11/5/2010 2:18:59 AM
Bromide	350	5.0		mg/L	50	11/5/2010 2:01:34 AM
Nitrogen, Nitrate (As N)	ND	5.0		mg/L	50	11/5/2010 2:01:34 AM
Phosphorus, Orthophosphate (As P)	ND	25		mg/L	50	11/5/2010 2:01:34 AM
Sulfate	ND	25		mg/L	50	11/5/2010 2:01:34 AM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **RAGS**
Calcium	9900	500		mg/L	500	11/4/2010 6:50:21 PM
Magnesium	1100	100		mg/L	100	11/4/2010 6:27:13 PM
Potassium	5300	100		mg/L	100	11/4/2010 6:27:13 PM
Sodium	26000	500		mg/L	500	11/4/2010 6:50:21 PM
EPA METHOD 200.7: METALS						Analyst: **RAGS**
Cadmium	ND	0.040		mg/L	20	11/5/2010 4:32:12 PM
Chromium	ND	0.12		mg/L	20	11/5/2010 4:32:12 PM
Copper	ND	0.12		mg/L	20	11/5/2010 4:32:12 PM
Lead	ND	0.10		mg/L	20	11/5/2010 4:32:12 PM
Manganese	15	0.040		mg/L	20	11/5/2010 4:32:12 PM
Silica	42	3.2		mg/L	20	11/5/2010 4:32:12 PM
Zinc	0.22	0.20		mg/L	20	11/5/2010 4:32:12 PM
EPA 200.8: METALS						Analyst: **SNV**
Arsenic	ND	0.050		mg/L	50	11/11/2010 6:30:13 PM
SM 2320B: ALKALINITY						Analyst: **IC**
Alkalinity, Total (As CaCO3)	350	20		mg/L CaCO3	1	11/4/2010 3:30:00 PM
Carbonate	ND	2.0		mg/L CaCO3	1	11/4/2010 3:30:00 PM
Bicarbonate	350	20		mg/L CaCO3	1	11/4/2010 3:30:00 PM

Qualifiers:

*	*Value exceeds Maximum Contaminant Level*	B	*Analyte detected in the associated Method Blank*
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	*Practical Quantitation Limit*	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *19-Nov-10*

CLIENT:	AMEC	**Client Sample ID:**	CD1-11210-4
Lab Order:	1011172	**Collection Date:**	11/2/2010 1:45:00 PM
Project:	Shell-Cuervo	**Date Received:**	11/3/2010
Lab ID:	1011172-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: IC
Specific Conductance	200000	0.50		µmhos/cm	50	11/5/2010 3:34:00 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	116000	1000		mg/L	1	11/5/2010 11:36:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

CLIENT:	AMEC	Client Sample ID:	W323-11210-1
Lab Order:	1011172	Collection Date:	11/2/2010 2:25:00 PM
Project:	Shell-Cuervo	Date Received:	11/3/2010
Lab ID:	1011172-02	Matrix:	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JB
Diesel Range Organics (DRO)	4.8	1.0		mg/L	1	11/5/2010 11:16:59 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/5/2010 11:16:59 AM
Surr: DNOP	117	86.9-151		%REC	1	11/5/2010 11:16:59 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.50		mg/L	10	11/4/2010 11:38:22 AM
Surr: BFB	97.9	84.5-118		%REC	10	11/4/2010 11:38:22 AM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Fluoride	ND	5.0		mg/L	50	11/5/2010 3:28:39 AM
Chloride	75000	5000		mg/L	10000	11/8/2010 6:27:11 PM
Nitrogen, Nitrite (As N)	ND	100		mg/L	1000	11/5/2010 4:03:29 AM
Bromide	230	5.0		mg/L	50	11/5/2010 3:28:39 AM
Nitrogen, Nitrate (As N)	ND	5.0		mg/L	50	11/5/2010 3:28:39 AM
Phosphorus, Orthophosphate (As P)	ND	25		mg/L	50	11/5/2010 3:28:39 AM
Sulfate	110	25		mg/L	50	11/5/2010 3:28:39 AM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: RAGS
Calcium	6200	100		mg/L	100	11/4/2010 6:31:27 PM
Magnesium	740	100		mg/L	100	11/4/2010 6:31:27 PM
Potassium	8900	100		mg/L	100	11/4/2010 6:31:27 PM
Sodium	22000	500		mg/L	500	11/4/2010 6:53:33 PM
EPA METHOD 200.7: METALS						Analyst: RAGS
Cadmium	ND	0.020		mg/L	10	11/5/2010 4:16:52 PM
Chromium	ND	0.060		mg/L	10	11/5/2010 4:16:52 PM
Copper	ND	0.060		mg/L	10	11/5/2010 4:16:52 PM
Lead	ND	0.050		mg/L	10	11/5/2010 4:16:52 PM
Manganese	12	0.040		mg/L	20	11/5/2010 4:36:04 PM
Silica	33	1.6		mg/L	10	11/5/2010 4:16:52 PM
Zinc	ND	0.10		mg/L	10	11/5/2010 4:16:52 PM
EPA 200.8: METALS						Analyst: SNV
Arsenic	ND	0.050		mg/L	50	11/11/2010 6:35:55 PM
SM 2320B: ALKALINITY						Analyst: IC
Alkalinity, Total (As CaCO3)	460	20		mg/L CaCO3	1	11/4/2010 4:05:00 PM
Carbonate	ND	2.0		mg/L CaCO3	1	11/4/2010 4:05:00 PM
Bicarbonate	460	20		mg/L CaCO3	1	11/4/2010 4:05:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *19-Nov-10*

CLIENT:	AMEC	**Client Sample ID:**	W323-11210-1
Lab Order:	1011172	**Collection Date:**	11/2/2010 2:25:00 PM
Project:	Shell-Cuervo	**Date Received:**	11/3/2010
Lab ID:	1011172-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: **IC**
Specific Conductance	200000	0.50		µmhos/cm	50	11/5/2010 3:36:00 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**
Total Dissolved Solids	111000	1000		mg/L	1	11/5/2010 11:36:00 AM

Qualifiers:

*	*Value exceeds Maximum Contaminant Level*
E	Estimated value
J	Analyte detected below quantitation limits
NC	Non-Chlorinated
PQL	Practical Quantitation Limit
B	*Analyte detected in the associated Method Blank*
H	Holding times for preparation or analysis exceeded
MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit
S	Spike recovery outside accepted recovery limits

Chain-of-Custody Record

Client: AMEC

Mailing Address: 6219 Jefferson NE
Albuquerque, NM 87113

Phone #: 505.821.1801

email or Fax#: david.janney@amec.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) Excel

Turn-Around Time:
☐ Standard ☒ Rush 48hr

Project Name: Shell-Curero

Project #: HOU10160210-Phase 04

Project Manager: David Janney

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1011172	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Cations/anions balance	TDS	Total Metals As, Cd, Cr, Pb, Zn, Cr, Mn, Si		Air Bubbles (Y or N)
11-2-10	1345	W	CD1-11210-4	125ml-p-2 40ml-g-4 500ml-p-1	HNO3/H2SO4 HgCl2	-1			X									X	X	X		
"	1425	"	W323-11210-1	125ml-p-2 40ml-g-4 500ml-p-1	HNO3/H2SO4 HgCl2	-2			X									X	X	X		
"	1655	"	LD234-11210-1	125ml-p-2 40ml-g-4 500ml-p-1	HNO3/H2SO4 HgCl2	-3			X									X	X	X		
"	1715	"	LD35-11210-1	125ml-p-2 40ml-g-4 500ml-p-1	HNO3/H2SO4 HgCl2	-4			X									X	X	X		
"	1815	"	LD33-11210-1	125ml-p-2 40ml-g-4 500ml-p-1	HNO3/H2SO4 HgCl2	-5			X									X	X	X		
			Trip Blank AT 11/3/10			-6			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
11/3/10	1358	David Janney		11/03/10	1358
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Need results before COB 11/9/10

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

APPENDIX C

Roswell Town Tap Water

ab. Request No. 93 Page 4 of 4 Source

ab. Sample No.

ontractor Roswell City Water

ate Sampled Contact To: Mr. Charlie Spearnon

ate Received

ate Reported

Sample			Riley Cuervo State #1 8-15-83 State of Plano		Riley Cuervo State #1 8-23-83 Well Head		No. Samples	Cost
	Mg/Liter	Meq/Liter	Mg/Liter	Meq/Liter	Mg/Liter	Meq/Liter		
odium (Na)	49970	2173.55	33000	1435.41	33600	1461.51	12 X 10	120.00
otassium (K)	2100	53.71	750	12.29	620	15.85	12 X 10	120.00
alcium (Ca)	10025	500.25	780	38.92	800	39.92	12 X 10	120.00
agnesium (Mg)	1155	94.98	18	1.48	12	.99	12 X 10	120.00
hloride (Cl)	98374	2775.01	47503	1340.00	48566	1369.99	12 X 8	96.00
ulfate (SO_4)	100	2.08	6500	135.33	6500	135.33	11 X 8	88.00
icarbonate (HCO_3)	132	2.16	820	13.44	1025	16.80	11 X 8	8800
arbonate (CO_3)								
ron, Total (Fe)	1.50		< Pal		0.30		12 X 8	96.00
ilica (SiO_2)								
is. Solids, Calc.								
is. Solids, Evap.	165100		90890		92200		11 X 8	88.00
H	5.73		11.24		11.81		11 X 5	55.00
onductivity (25°C)	227200		137600		140,00		N/C See Rw	
pecific Gravity								
otal Hardness ($CaCO_3$)	29750		2025		2025		11 X 8	88.00
Alkalinity ($CaCO_3$)								
Alkalinity ($CaCO_3$)								
arbon Dioxide (CO_2)								
issolved Oxygen (O_2)								
hlorine Total (Cl_2)								
hlorine Free (Cl_2)								
anganese (Mn)	0.418		[illegible]		[illegible]			
~~Rw (Ohms)~~	~~4.46~~		~~7.26~~		~~7.44~~		11 X 5	55.00
inc (Zn)								
hosphate Total (PO_4)								
hosphate Ortho (PO_4)								1135.00
itrate (NO_3)			Less 10%		Volume Disc			1135.00
Per Cent Petroleum	-0-		-0-		-0-			
Sample Odor	Very Slight Pet.		NO Odor		NO Odor			1021.50
Sample Color	Brown		Light Brown To Gray		Brown To Gray			

emarks:

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601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

MPANY : TRANS PECOS RESOURCES
TE : 8-17-83
ELD,LEASE&WELL : RILEY STATE#1
MPLING POINT: SWAB RUN #1
TE SAMPLED : 7-22-83

ECIFIC GRAVITY = 1.058
TAL DISSOLVED SOLIDS = 86163
= 9.64

		ME/L	MG/L
CATIONS			
CIUM	(CA)+2	66.6	1336
NESIUM	(MG)+2	13.3	162.
IUM	(NA),CALC.	1374.	31590.
ANIONS			
ARBONATE	(HCO3)-1	0	0
RBONATE	(CO3)-2	1.6	48.0
ROXIDE	(OH)-1	2.2	37.4
FATE	(SO4)-2	124.	6000
ORIDES	(CL)-1	1325.	46989.
DISSOLVED GASES			
EON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
CEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		777.
IUM	(BA)+2		.2
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	2.44
CIUM CARBONATE SCALING	LIKELY
FATE INDEX	-7.4
CIUM SULFATE SCALING	UNLIKELY

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601 NORTH LEECH P.O.ROX1499

HOBBS, NEW MEXICO 88240

IPANY : TRANS PECOS RESOURCES
'E : 8-17-83
:LD,LEASE&WELL : RILEY STATE #1
IPLING POINT: SWAB RUN #1
'E SAMPLED : 7-26-83

:CIFIC GRAVITY = 1.063
'AL DISSOLVED SOLIDS = 93599
= 11.34

		ME/L	MG/L
CATIONS			
.CIUM	(CA)+2	93.3	1870.
:NESIUM	(MG)+2	26.6	324.
)IUM	(NA),CALC.	1464.	33673.
ANIONS			
:ARBONATE	(HCO3)-1	0	0
:BONATE	(CO3)-2	4	120.
)ROXIDE	(OH)-1	7.2	122.
.FATE	(SO4)-2	135.	6500
:ORIDES	(CL)-1	1438.	50988.
DISSOLVED GASES			
:BON DIOXIDE	(CO2)	NOT RUN	
)ROGEN SULFIDE	(H2S)	NOT RUN	
'GEN	(O2)	NOT RUN	
)N(TOTAL)	(FE)		542.
:IUM	(BA)+2		.2
:ICANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
:BONATE INDEX	4.78
.CIUM CARBONATE SCALING	LIKELY
.FATE INDEX	10.4
.CIUM SULFATE SCALING	LIKELY

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HOBBS, NEW MEXICO 88240

ANY : TRANS PECOS RESOURCES
: 8-17-83
D,LEASE&WELL : RILEY CUERVO STATE #1
LING POINT: PUMP JACK #1
SAMPLED : 8-1-83

IFIC GRAVITY = 1.026
L DISSOLVED SOLIDS = 38433
: 9.76

		ME/L	MG/L
ATIONS			
IUM	(CA)+2	73.3	1469.
NESIUM	(MG)+2	36.6	445.
UM	(NA),CALC.	541.	12443.
ANIONS			
RBONATE	(HCO3)-1	0	0
BONATE	(CO3)-2	.8	24.0
ROXIDE	(OH)-1	3.2	54.4
FATE	(SO4)-2	83.2	4000
RIDES	(CL)-1	564	19995.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
GEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		14.3
IUM	(BA)+2		.3
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	2.71
CIUM CARBONATE SCALING	LIKELY
FATE INDEX	2.29
CIUM SULFATE SCALING	LIKELY

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HOBBS, NEW MEXICO 88240

ANY : TRANS PECOS RESOURCES
: 8-17-83
D,LEASE&WELL : RILEY CUERVO STATE #1
LING POINT: WELLHEAD LAST SAMPLE
SAMPLED : 8-8-83

IFIC GRAVITY = 1.056
L DISSOLVED SOLIDS = 83716
= 10.76

		ME/L	MG/L
CATIONS			
IUM	(CA)+2	80	1603.
NESIUM	(MG)+2	6.6	81.0
IUM	(NA),CALC.	1324.	30455.
ANIONS			
ARBONATE	(HCO3)-1	0	0
BONATE	(CO3)-2	1.6	48.0
ROXIDE	(OH)-1	7.2	122.
FATE	(SO4)-2	133.	6416.
ORIDES	(CL)-1	1269	44989.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
GEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		9
IUM	(BA)+2		.6
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C
	86F
BONATE INDEX	4.00
CIUM CARBONATE SCALING	LIKELY
FATE INDEX	4.84
CIUM SULFATE SCALING	LIKELY

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HOBBS, NEW MEXICO 88240

PANY : TRANS PECOS RESOURCES
E : 8-17-83
LD,LEASE&WELL : RILEY CUERVO STATE #1
PLING POINT: PUMP JACK #1
E SAMPLED : 8-8-83

CIFIC GRAVITY = 1.055
AL DISSOLVED SOLIDS = 82533
= 9.62

		ME/L	MG/L
CATIONS			
CIUM	(CA)+2	93.3	1870.
NESIUM	(MG)+2	6.6	81.0
IUM	(NA),CALC.	1289.	29635.
ANIONS			
ARBONATE	(HCO3)-1	0	0
BONATE	(CO3)-2	1.6	48.0
ROXIDE	(OH)-1	4.4	74.8
FATE	(SO4)-2	142.	6833.
ORIDES	(CL)-1	1240.	43990.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
GEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		8.9
IUM	(BA)+2		.3
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	2.76
CIUM CARBONATE SCALING	LIKELY
FATE INDEX	16.6
CIUM SULFATE SCALING	LIKELY

Roswell Test Facility

Request No. 97- Page 6 of 6 — Sample Source Tank Pecos Resources Inc

Sample No. 1-13-265-83

Factor Roswell City Water

Sampled

Received 9-22-83 — Copies To: Mr. Charlie Spearnon

Reported 9-30-83

Sample	Riley Cuervo State #1 Well Head 9-12-83-1100						Cost For Riley Cuervo State #1	
	Mg/Liter	Meq/Liter	Mg/Liter	Meq/Liter	Mg/Liter	Meq/Liter		
m (Na)	33910	1474.99						10.00
sium (K)	600	15.34						10.00
um (Ca)	1604	80.04						10.00
sium (Mg)	< 1	—						10.00
ide (Cl)	50516	1424.99						8.00
te (SO_4)	5675	118.15						8.00
bonate (HCO_3)	1028	16.84						8.00
nate (CO_3)								
Total (Fe)	7.10							10.00
n (SiO_2)								
Solids, Calc.								
Solids, Evap.	93580							8.00
	11.57							5.00
ctivity (25°C)								
fic Gravity								
Hardness ($CaCO_3$)	4000							8.00
alinity ($CaCO_3$)	814							N/C
alinity ($CaCO_3$)	884							N/C
n Dioxide (CO_2)								
lved Oxygen (O_2)								
ine Total (Cl_2)								
ine Free (Cl_2)								
nese (Mn)								
r (Cu)								
(Zn)								
nate Total (PO_4)								
nate Ortho (PO_4)								
te (NO_3)								
stivity (Rw)	0.713							5.00
							Riley Cuervo State #1 Total	100.00

Page #1 200.00

#4 800.00

#5 200.00

#6 100.00

1300.00

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HOBBS, NEW MEXICO 88240

PANY : TRANS PECOS RESOURCES
E : 7-26-83
LD,LEASE&WELL : RILEY CUERVO #1
PLING POINT: RUN #1
E SAMPLED : 7-5-83

CIFIC GRAVITY = 1.061
AL DISSOLVED SOLIDS = 90793
= 11.01

		ME/L	MG/L
CATIONS			
CIUM	(CA)+2	93.3	1870.
NESIUM	(MG)+2	56.6	688.
IUM	(NA),CALC.	1391.	31991.
ANIONS			
ARBONATE	(HCO3)-1	0	0
BONATE	(CO3)-2	1.2	36.0
ROXIDE	(OH)-1	12.8	217.
FATE	(SO4)-2	145.	7000
ORIDES	(CL)-1	1381.	48988.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
GEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		637.
IUM	(BA)+2	NOT RUN	
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	4.54
CIUM CARBONATE SCALING	LIKELY
FATE INDEX	14.8
CIUM SULFATE SCALING	LIKELY

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HOBBS, NEW MEXICO 88240

'ANY : TRANS PECOS RESOURCES
: 7-26-83
:D,LEASE&WELL : RILEY CUERVO #1
'LING POINT:
: SAMPLED : 7-1-83

:IFIC GRAVITY = 1.047
\L DISSOLVED SOLIDS = 70088
= 11.14

		ME/L	MG/L
:ATIONS			
:IUM	(CA)+2	93.3	1870.
NESIUM	(MG)+2	86.6	1053.
IUM	(NA),CALC.	1020.	23458.
ANIONS			
\RBONATE	(HCO3)-1	0	0
BONATE	(CO3)-2	2	60.0
ROXIDE	(OH)-1	14	238
FATE	(SO4)-2	112.	5416.
DRIDES	(CL)-1	1071.	37991.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
GEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		121.
IUM	(BA)+2	NOT RUN	
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	4.70
CIUM CARBONATE SCALING	LIKELY
FATE INDEX	8.03
CIUM SULFATE SCALING	LIKELY

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HOBBS, NEW MEXICO 88240

PANY : TRANS PECOS RESOURCES
E : 7-26-83
LD,LEASE&WELL : RILEY CUERVO #1
PLING POINT: LAST SWAB RUN
E SAMPLED : 6-30-83

CIFIC GRAVITY = 1.014
AL DISSOLVED SOLIDS = 21079
= 7.69

		ME/L	MG/L
CATIONS			
CIUM	(CA)+2	48	961.
NESIUM	(MG)+2	36	437.
IUM	(NA),CALC.	272.	6264.
ANIONS			
ARBONATE	(HCO3)-1	1.2	73.2
BONATE	(CO3)-2	0	0
ROXIDE	(OH)-1	0	0
FATE	(SO4)-2	59.2	2843.
ORIDES	(CL)-1	296.	10497.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
GEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		157
IUM	(BA)+2	NOT RUN	
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
RBONATE INDEX	.095
CIUM CARBONATE SCALING	LIKELY
FATE INDEX	-6.3
CIUM SULFATE SCALING	UNLIKELY

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HOBBS, NEW MEXICO 88240

PANY : TRANS PECOS RESOURCES
E : 7-26-83
LD,LEASE&WELL : RILEY CUERVO #1
PLING POINT: SWAB RUN #1
E SAMPLED : 7-17-83

CIFIC GRAVITY = 1.037
AL DISSOLVED SOLIDS = 85479
= 8.88

		ME/L	MG/L
CATIONS			
CIUM	(CA)+2	100	2004
NESIUM	(MG)+2	50	607.
IUM	(NA),CALC.	1296.	29798.
ANIONS			
ARBONATE	(HCO3)-1	0	0
BONATE	(CO3)-2	2	60.0
ROXIDE	(OH)-1	1.2	20.4
FATE	(SO4)-2	145.	7000
ORIDES	(CL)-1	1297.	45989.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
GEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		1255
IUM	(BA)+2	NOT RUN	
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	1.79
CIUM CARBONATE SCALING	LIKELY
FATE INDEX	20.5
CIUM SULFATE SCALING	LIKELY

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HOBBS, NEW MEXICO 88240

PANY : TRANS PECOS RESOURCES
E : 7-26-83
LD.LEASE&WELL : RILEY CUERVO #1
PLING POINT: RUN #3
E SAMPLED : 7-6-83

CIFIC GRAVITY = 1.06
AL DISSOLVED SOLIDS = 89104
= 10.91

		ME/L.	MG/L
CATIONS			
CIUM	(CA)+2	86.6	1736.
NESIUM	(MG)+2	53.3	648.
IUM	(NA),CALC.	1370.	31517.
ANIONS			
ARBONATE	(HCO3)-1	0	0
BONATE	(CO3)-2	1.2	36.0
ROXIDE	(OH)-1	10.4	176.
FATE	(SO4)-2	145.	7000
ORIDES	(CL)-1	1353.	47989.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
GEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		695
IUM	(BA)+2	NOT RUN	
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	4.32
CIUM CARBONATE SCALING	LIKELY
FATE INDEX	11.2
CIUM SULFATE SCALING	LIKELY

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HOBBS, NEW MEXICO 88240

IPANY : TRANS PECOS RESOURCES
:E : 7-26-83
:LD,LEASE&WELL : LATIGO RANCH WELL #C-1 ZONE B AND C
IPLING POINT: SWAB RUN #1
:E SAMPLED : 7-15-83

:CIFIC GRAVITY = 1.098
:AL DISSOLVED SOLIDS = 145931
= 6.02

		ME/L	MG/L
CATIONS			
:CIUM	(CA)+2	960	19238.
:NESIUM	(MG)+2	160	1944.
)IUM	(NA),CALC.	1453.	33408.
ANIONS			
:ARBONATE	(HCO3)-1	1.8	109.
RBONATE	(CO3)-2	0	0
)ROXIDE	(OH)-1	0	0
:FATE	(SO4)-2	5.2	250
:ORIDES	(CL)-1	2566.	90979.
DISSOLVED GASES			
RBON DIOXIDE	(CO2)	NOT RUN	
)ROGEN SULFIDE	(H2S)	NOT RUN	
YGEN	(O2)	NOT RUN	
)N(TOTAL)	(FE)		2235
RIUM	(BA)+2	NOT RUN	
NGANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C
	86F
RBONATE INDEX	.090
LCIUM CARBONATE SCALING	LIKELY
LFATE INDEX	-7.5
LCIUM SULFATE SCALING	UNLIKELY

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HOBBS, NEW MEXICO 88240

'ANY : TRANS PECOS RESOURCES
: 7-26-83
.D,LEASE&WELL : LATIGO RANCH WELL #C-1 ZONE B AND C
'LING POINT: SWAB RUN #44
: SAMPLED : 7-13-83

:IFIC GRAVITY = 1.087
AL DISSOLVED SOLIDS = 128412
= 5.67

		ME/L	MG/L
:ATIONS			
:IUM	(CA)+2	873.	17501.
1ESIUM	(MG)+2	146.	1782.
IUM	(NA),CALC.	1246.	28647.
ANIONS			
ARBONATE	(HCO3)-1	1	61.0
BONATE	(CO3)-2	0	0
ROXIDE	(OH)-1	0	0
FATE	(SO4)-2	9.1	437.
DRIDES	(CL)-1	2256	79981.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
GEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		162
IUM	(BA)+2	NOT RUN	
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	-.70
CIUM CARBONATE SCALING	UNLIKELY
FATE INDEX	-9.6
CIUM SULFATE SCALING	UNLIKELY

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HOBBS, NEW MEXICO 88240

NY : TRANS PECOS RESOURCES
: 7-26-83
),LEASE&WELL : LATIGO RANCH WELL #C-1 ZONE B AND C
ING POINT: SWAB RUN #1
SAMPLED : 7-13-83

IFIC GRAVITY = 1.087
L DISSOLVED SOLIDS = 128795
5.63

		ME/L	MG/L
ATIONS			
IUM	(CA)+2	826.	16566.
ESIUM	(MG)+2	113.	1377.
UM	(NA),CALC.	1324.	30446.
ANIONS			
RBONATE	(HCO3)-1	1.6	97.6
ONATE	(CO3)-2	0	0
OXIDE	(OH)-1	0	0
ATE	(SO4)-2	6.7	325
RIDES	(CL)-1	2256	79981.
DISSOLVED GASES			
ON DIOXIDE	(CO2)	NOT RUN	
OGEN SULFIDE	(H2S)	NOT RUN	
EN	(O2)	NOT RUN	
(TOTAL)	(FE)		256
UM	(BA)+2	NOT RUN	
ANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
ONATE INDEX	-.57
IUM CARBONATE SCALING	UNLIKELY
ATE INDEX	-7.6
IUM SULFATE SCALING	UNLIKELY

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HOBBS, NEW MEXICO 88240

NY : TRANS PECOS RESOURCES
: 7-26-83
LEASE&WELL : LATIGO RANCH WELL #C-1 ZONE B AND C
ING POINT: SWAB 27
SAMPLED : 7-12-83

FIC GRAVITY = 1.077
DISSOLVED SOLIDS = 113666
5.98

		ME/L	MG/L
TIONS			
JM	(CA)+2	753.	15096.
SIUM	(MG)+2	186.	2269.
4	(NA),CALC.	1074.	24706.
NIONS			
BONATE	(HCO3)-1	1	61.0
NATE	(CO3)-2	0	0
XIDE	(OH)-1	0	0
TE	(SO4)-2	11.4	550
IDES	(CL)-1	2002.	70983.
DISSOLVED GASES			
N DIOXIDE	(CO2)	NOT RUN	
GEN SULFIDE	(H2S)	NOT RUN	
N	(OZ)	NOT RUN	
TOTAL)	(FE)		264
M	(RA)+2	NOT RUN	
NESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
NATE INDEX	-.55
JM CARBONATE SCALING	UNLIKELY
TE INDEX	-4.3
JM SULFATE SCALING	UNLIKELY

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601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

IPANY : TRANS PECOS RESOURCES
:E : 7-26-83
:LD,LEASE&WELL : LATIGO RANCH WELL #C-1 ZONE B AND C
IPLINC POINT: SWAB RUN #1
:E SAMPLED : 7-12-83

:CIFIC GRAVITY = 1.058
:AL DISSOLVED SOLIDS = 85848
= 6.21

		ME/L	MG/L
CATIONS			
.CIUM	(CA)+2	553.	11088.
;NESIUM	(MG)+2	86.6	1053.
)IUM	(NA),CALC.	869.	19987.
ANIONS			
:ARBONATE	(HCO3)-1	1.6	97.6
(BONATE	(CO3)-2	0	0
)ROXIDE	(OH)-1	0	0
.FATE	(SO4)-2	13.1	633.
.ORIDES	(CL)-1	1494.	52988.
DISSOLVED GASES			
(BON DIOXIDE	(CO2)	NOT RUN	
)ROGEN SULFIDE	(H2S)	NOT RUN	
'GEN	(O2)	NOT RUN	
)N(TOTAL)	(FE)		5500
(IUM	(BA)+2	NOT RUN	
ICANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
(BONATE INDEX	-.41
.CIUM CARBONATE SCALING	UNLIKELY
.FATE INDEX	-5.9
.CIUM SULFATE SCALING	UNLIKELY

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601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

ANY : TRANS PECOS RESOURCES
: 7-26-83
D,LEASE&WELL : LATIGO RANCH WELL #C-1 ZONE B AND C
LING POINT: SWAB RUN #1
SAMPLED : 7-11-83

IFIC GRAVITY = 1.024
L DISSOLVED SOLIDS = 36454
= 6.02

		ME/L	MG/L
ATIONS			
IUM	(CA)+2	20	400.
NESIUM	(MG)+2	70	850.
UM	(NA),CALC.	544.	12514.
ANIONS			
RBONATE	(HCO3)-1	1.8	109.
ONATE	(CO3)-2	0	0
OXIDE	(OH)-1	0	0
ATE	(SO4)-2	12.1	583.
RIDES	(CL)-1	620.	21995.
DISSOLVED GASES			
ON DIOXIDE	(CO2)	NOT RUN	
OGEN SULFIDE	(H2S)	NOT RUN	
EN	(O2)	NOT RUN	
N(TOTAL)	(FE)		7840
UM	(BA)+2	NOT RUN	
ANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
ONATE INDEX	-1.9
IUM CARBONATE SCALING	UNLIKELY
ATE INDEX	-57.
IUM SULFATE SCALING	UNLIKELY

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601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

'ANY : TRANS PECOS RESOURCES
: : 7-26-83
:D,LEASE&WELL : LATIGO RANCH ZONE B AND C
'LING POINT: SWAB RUN 38
: SAMPLED : 7-14-83

:IFIC GRAVITY = 1.088
\L DISSOLVED SOLIDS = 131059
= 5.98

		MF/L	MG/L
:ATIONS			
:IUM	(CA)+2	893.	17902.
NESIUM	(MG)+2	186.	2269.
IUM	(NA),CALC.	1240.	28512.
ANIONS			
ARBONATE	(HCO3)-1	1.4	85.4
BONATE	(CO3)-2	0	0
ROXIDE	(OH)-1	0	0
FATE	(SO4)-2	6.4	308.
DRIDES	(CL)-1	2312.	81981.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
:EN	(O2)	NOT RUN	
N(TOTAL)	(FE)		390
IUM	(BA)+2	NOT RUN	
:ANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	-.20
:IUM CARBONATE SCALING	UNLIKELY
FATE INDEX	-7.1
:IUM SULFATE SCALING	UNLIKELY

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601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

PANY : TRANS PECOS RESOURCES
E : 7-26-83
LD,LEASE&WELL : LATIGO RANCH WELL #C-1 ZONE B AND C
PLING POINT: SWAB RUN #1
E SAMPLED : 7-14-83

IFIC GRAVITY = 1.089
L DISSOLVED SOLIDS = 131482
= 5.96

		ME/L	MG/L
CATIONS			
IUM	(CA)+2	873.	17501.
NESIUM	(MG)+2	146.	1782.
UM	(NA),CALC.	1299.	29868.
ANIONS			
RBONATE	(HCO3)-1	1.6	97.6
BONATE	(CO3)-2	0	0
DXIDE	(OH)-1	0	0
ATE	(SO4)-2	5.2	250
RIDES	(CL)-1	2312.	81981.
DISSOLVED GASES			
ON DIOXIDE	(CO2)	NOT RUN	
OGEN SULFIDE	(H2S)	NOT RUN	
EN	(O2)	NOT RUN	
N(TOTAL)	(FE)		514
UM	(BA)+2	NOT RUN	
ANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	-.18
IUM CARBONATE SCALING	UNLIKELY
ATE INDEX	-8.6
IUM SULFATE SCALING	UNLIKELY

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601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

ANY : TRANS PECOS RESOURCES
: 7-26-83
D,LEASE&WELL : LATICO RANCH C1 ZONE B AND C
PLING POINT: SWAB RUN #18
SAMPLED : 7-13-83

CIFIC GRAVITY = 1.08
AL DISSOLVED SOLIDS = 118983
= 6.02

		ME/L	MG/L
CATIONS			
CIUM	(CA)+2	793.	15898.
NESIUM	(MG)+2	126.	1539.
IUM	(NA),CALC.	1177.	27060.
ANIONS			
ARBONATE	(HCO3)-1	.6	36.6
BONATE	(CO3)-2	0	0
ROXIDE	(OH)-1	0	0
FATE	(SO4)-2	9.6	465
ORIDES	(CL)-1	2086.	73983.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
GEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		226
IUM	(BA)+2	NOT RUN	
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	-.69
CIUM CARBONATE SCALING	UNLIKELY
FATE INDEX	-4.9
CIUM SULFATE SCALING	UNLIKELY

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601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

ANY : TRANS PECOS RESOURCES
: 7-26-83
D,LEASE&WELL : LATIGO RANCH C1
LING POINT: LAST SAMPLE
SAMPLED : 6-25-83

IFIC GRAVITY = 1.122
L DISSOLVED SOLIDS = 180492
4.97

		ME/L	MG/L
ATIONS			
IUM	(CA)+2	1286.	25784.
IESIUM	(MG)+2	333.	4052
UM	(NA),CALC.	1595	36668.
ANIONS			
RBONATE	(HCO3)-1	.2	12.2
ONATE	(CO3)-2	0	0
OXIDE	(OH)-1	0	0
ATE	(SO4)-2	0	0
RIDES	(CL)-1	3214.	113974.
DISSOLVED GASES			
ON DIOXIDE	(CO2)	NOT RUN	
OGEN SULFIDE	(H2S)	NOT RUN	
EN	(O2)	NOT RUN	
N(TOTAL)	(FE)		54.1
UM	(BA)+2	NOT RUN	
ANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
ONATE INDEX	-1.6
IUM CARBONATE SCALING	UNLIKELY
ATE INDEX	-8.8
IUM SULFATE SCALING	UNLIKELY

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601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

PANY : TRANS PECOS RESOURCES
E : 7-26-83
ID,LEASE&WELL : LATICO RANCH WELL #1-C
PLING POINT: TOP OF SAMPLE CATCHER
E SAMPLED : 6-24-84

CIFIC GRAVITY = 1.129
AL DISSOLVED SOLIDS = 191179
= 4.32

		ME/L	MG/L
CATIONS			
CIUM	(CA)+2	1320	26452.
NESIUM	(MG)+2	250	3050
IUM	(NA),CALC.	1814	41703.
ANIONS			
ARBONATE	(HCO3)-1	0	0
BONATE	(CO3)-2	0	0
ROXIDE	(OH)-1	0	0
FATE	(SO4)-2	0	0
ORIDES	(CL)-1	3384	119972.
DISSOLVED GASES			
BON DIOXIDE	(CO2)	NOT RUN	
ROGEN SULFIDE	(H2S)	NOT RUN	
GEN	(O2)	NOT RUN	
N(TOTAL)	(FE)		105.
IUM	(BA)+2	NOT RUN	
GANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
BONATE INDEX	-2.6
CIUM CARBONATE SCALING	UNLIKELY
FATE INDEX	-8.4
CIUM SULFATE SCALING	UNLIKELY

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601 NORTH LEECH P.O.BOX1499

HOBBS, NEW MEXICO 88240

ANY : TRANS PECOS RESOURCES
: 7-26-83
D,LEASE&WELL : LATIGO RANCH WELL #C1 ZONE B AND C
LING POINT: SWAB RUN #15
SAMPLED : 7-15-83

IFIC GRAVITY = 1.044
I. DISSOLVED SOLIDS = 65226
6.13

		ME/L	MG/L
ATIONS			
IUM	(CA)+2	373.	7481.
ESIUM	(MG)+2	66.6	810.
UM	(NA),CALC.	703.	16178.
ANIONS			
RBONATE	(HCO3)-1	.8	48.8
ONATE	(CO3)-2	0	0
OXIDE	(OH)-1	0	0
ATE	(SO4)-2	14.9	716.
RIDES	(CL)-1	1128	39990.
DISSOLVED GASES			
ON DIOXIDE	(CO2)	NOT RUN	
OGEN SULFIDE	(H2S)	NOT RUN	
EN	(O2)	NOT RUN	
I(TOTAL)	(FE)		1865
UM	(BA)+2	NOT RUN	
ANESE	(MN)	NOT RUN	

SCALING INDEX	TEMP
	30C 86F
ONATE INDEX	-1.0
IUM CARBONATE SCALING	UNLIKELY
ATE INDEX	-8.7
IUM SULFATE SCALING	UNLIKELY

YOUR EXT. NO.

THE WESTERN COMPANY

WATER ANALYSIS

ANALYSIS NO. 1

GENERAL INFORMATION

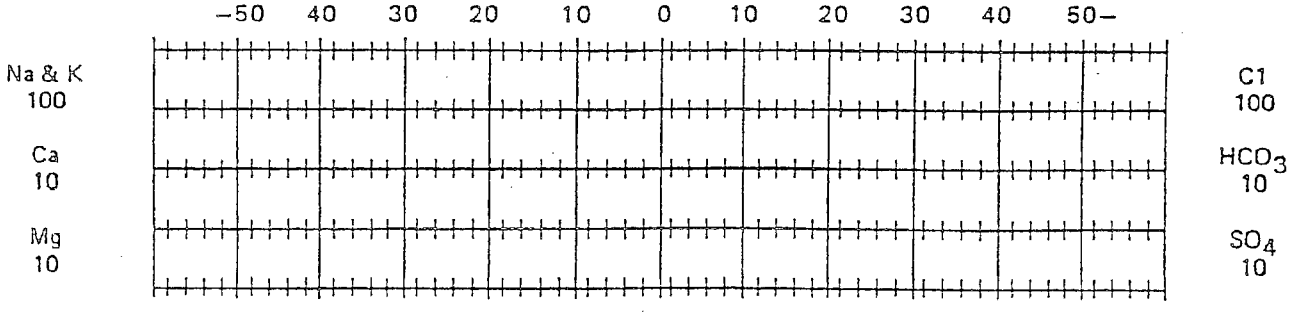
OPERATOR Trans Pecos Resources	DATE SAMPLED 3-11-83
WELL #1 Irwin Ranch Blk "C"	DATE RECEIVED 3-14-83
FIELD	SUBMITTED BY
FORMATION	WORKED BY Christopher Shipp
COUNTY	SAMPLE DESCRIPTION: Clear
STATE N. M.	
DEPTH	

PHYSICAL AND CHEMICAL DETERMINATIONS

SPECIFIC GRAVITY 1.125 AT 65 °F	TOTAL DISSOLVED SOLIDS PPM
pH 6.2	RESISTIVITY .055 PPM
IRON Strong	SULFATE X18 Negligible PPM
HYDROGEN SULFIDE None	BICARBONATE 1.3 X122 158.60 PPM
HARDNESS 10.8 X10,000 108,000	CHLORIDE 110,800 PPM
CALCIUM .1 7.3 X4,000 29,200	SODIUM CHLORIDE 183,263.20 PPM
MAGNESIUM H-C X2430 8,505 PPM	SODIUM PPM
SODIUM & POTASSIUM 22,332.31 PPM	POTASSIUM PPM
PHOSPHATE	

REMARKS:

for Stiff type plot (in meq./1.)



FORM 052-1025 (3/81)

ANALYST _____

WSTN CO.

— WATER ANAYSIS —

1-C Latigo

Breakdown	SPL DATE #2 3-12-83	SPL DATE #3 3-14-83
SG	1.135 @ 62°F	1.13 @ 63°F
PH	6	6
Iron	Moderate Tr.	Strong Tr.
H_2S	None	None
Hrdness	61,000	55,000
Calc.	20,400	20,400
Mg.	2430	972
Sodium-Potassium	47,008	46,155
Resistivity	0.058	0.06
Sulphate	negative	negative
Bicarbonates	97.6	158.6
Clorides	115,600	110,000
NaCl	191,202	181,940

APPENDIX D

NEW MEXICO BUREAU OF GEOLOGY AND MINERAL RESOURCES
NEW MEXICO TECH
801 LEROY PLACE, SOCORRO, NM 87801
PH: 505-835-5130 FAX: 505-835-5333

GENERAL CHEMISTRY FORM

Lab. Number	06-0342	County		Township, Range	
Collection Date	4/10/2006	Collected By		Section	
Well Depth		Water Depth		Basin	
Sample Description	WEBB CD-1 water well				

Name	Brian Brister
Address	Cuervo Explorations LLC.
Address 2	PO Box 97508
City, State, Zip code	Wichita Falls, Tx 76307
Phone	940-723-5585
FAX	
Email	

Date Received	4/19/2006
Date Completed	5/4/2006
CHARGES	$60.00
pH	8.4
Conductivity (uS/cm)	1870
TDS (ppm) (calculation)	1252
TDS (ppm) (gravimetric)	

ANALYSIS	Conc. (ppm)	meq/L
Hardness (CaCO3)	181	
Alkalinity		
Carbonate (CO32-)	<10	
Bicarbonate (HCO3-)	530	8.6867
Major Anions		
Bromide (Br)	<1.0	0.0000
Chloride (Cl-)	65	1.8337
Fluoride (F-)	1.7	0.0895
Nitrite (NO2-)	<1.0	0.0000
Nitrate (NO3-)	<1.0	0.0000
Phosphate (PO43-)	<5.0	0.0000
Sulfate (SO42-)	465	9.6813
Major Cations		
Sodium (Na)	380	16.5300
Potassium (K)	6.0	0.1552
Magnesium (Mg)	23	1.8920
Calcium (Ca)	35	1.7150
Total meq/L Cations		20.43
Total meq/L Anions		20.29
% Difference		0.33

Approved By: _____

APPENDIX E

Table 1.

Fresh Water Wells Overlying the Proposed Injection Zone and Within 1.7 Miles of the Webb Ranch 3-23 Proposed Injection Well
API No. 30-019-2035, Guadalupe Co., New Mexico

POD #	Well Name	Use	Well Depth (ft)	Screen Interval (ft)	Water Depth (ft)	q64	q16	q4	Sec	Twn	Rng	UTM Coordinates X	UTM Coordinates Y	Finish Date	Distance To Proposed Injection Well
CR 04940	Webb Ranch 3-23	PRO	912	590-912	232				23	11N	23E	548192	3891176	7/16/2008	500 feet
CR 04512	CD-1	PRO	1120	930-1120	900	2	4	4	26	11N	23E	356513	3889377	3/11/2006	1.7 miles

NOTES:

PRO = Prospecting

UTM = Universal Transverse Mercator

CASE 14617: **Application of Shell Exploration & Production Co. for approval of a salt water disposal well, Guadalupe County, New Mexico.** Applicant seeks approval to utilize its Webb 3-23 Well (API No. 30-019-20135) located 1654feet from the South line and 1646 feet from the West line (Unit K) of Section 23, Township 11 North, Range 23 East, NMPM, to inject up to 8,640 barrels of water per day, at a maximum pressure of 8,900 psi, into the into the Cuervo Hills Pennsylvanian formation, Webb Ranch Pool, in the perforated interval from 10,602 feet to 13,078 feet. This well is located approximately 8 miles northwest of Cuervo, New Mexico and two miles west of County Road CR1 (Mesa Del Gato Road).

NOTIFICATION LIST

APPLICATION OF SHELL EXPLORATION & PRODUCTION, CO.
FOR SALT WATER DISPOSAL
GUADALUPE COUNTY, NEW MEXICO

Webb CD-1 Well
(API No. 30-019-20135)
Section 23, Township 11 North, Range 23 East

SURFACE OWNERSHIP:

Mr. Larry Webb
Hage & Webb Land & Cattle, Inc.
HCR 67, Box6
Newkirk, New Mexico88431