BW - __12___

MONITORING REPORTS

DATE: __8-30-11__

Hansen, Edward J., EMNRD

From: Jason Henry [JHenry@paalp.com]
Sent: Tuesday, August 30, 2011 3:33 PM
To: Hansen, Edward J., EMNRD
Cc: Jeffrey P Dann; Wayne E Roberts
Subject: FW: Saline #1 - Plains Marketing Brine Well Facility (NMOCD Reference # BW-12-0)
Attachments: Saline #1 MW sampling 2007.pdf; Saline #1 MW-2 sampling 2001.pdf; Saline #1 MW sampling 2011.pdf; Saline #1 MW-2 Information.pdf; Saline #1 GW Analytical Results and GW Gauging data.xls

Ed,

Please accept this email as Plains Marketing's request to plug and abandon (P&A) monitor wells MW-1 and MW-2 at the above referenced facility. This request to P&A the monitor wells is based on the laboratory results for analyses of Chlorides concentrations in groundwater samples which were collected from monitor wells MW-1 and MW-2 during the course of three (3) sampling events at the site. A summary of the analytical results obtained from each groundwater sampling event is provided in the attached Excel document and the associated laboratory reports are also attached.

With the exception of one (1) sample, the Chlorides concentrations detected in all of the groundwater samples collected from monitor wells MW-1 and MW-2 were <250 mg/L.

The laboratory report for the groundwater sample collected from monitor well MW-1 on 08/04/2011 indicated that the Chlorides concentration was 632 mg/L. This elevated result from monitor well MW-1 is believed to be due to the lack of a sufficient water column (≤ 1')being present in the well at the time of sampling. Attempts to purge monitor well MW-1 prior to sample collection resulted in the well going dry multiple times. After allowing monitor well MW-1 time to recharge, Basin Environmental personnel were only able to collect 115 mL of water in the 250 mL container supplied by the lab. Additionally, the suspended solids that were observed in the sample collected from monitor well MW-1 call into question the validity of the analytical result for this sample.

Upon completion of P&A activities, Plains Marketing will submit plugging reports to the NMOCD to document the proper plugging and abandonment of monitor wells MW-1 and MW-2.

Please let me know if you have any questions or need more information.

Thank you,
Jason Henry
575-441-1099

From: Jason Henry
Sent: Tuesday, August 30, 2011 11:33 AM
To: 'Hansen, Edward J., EMNRD'
Cc: Jeffrey P Dann; Wayne E Roberts
Subject: Saline #1 - Plains Marketing Brine Well Facility

Ed,

Attached for your review are several documents pertaining to monitor wells MW-1 and MW-2 at the above referenced facility. I will be mailing paper copies of these documents to you for your files.

Please let me know if you have any questions or need more information.

Analytical Report 293991

for

PLAINS ALL AMERICAN EH&S

Project Manager: JIMMY BRYANT

Saline Brine Station

07-DEC-07

12600 West I-20 East Odessa, Texas 79765

A Xenco Laboratories Company

Texas certification numbers:
Houston, TX T104704215

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675

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

LAB OF

07-DEC-07

Project Manager: **JIMMY BRYANT**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **293991**
Saline Brine Station
Project Address: Lea County, NM

JIMMY BRYANT:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 293991. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 293991 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 293991

PLAINS ALL AMERICAN EH&S, Midland, TX

Saline Brine Station

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Dec-04-07 15:25		293991-001
MW-2	W	Dec-04-07 16:00		293991-002

Project Id:
Contact: JIMMY BRYANT
Project Location: Lea County, NM

Project Name: Saline Brine Station

Date Received in Lab: Wed Dec-05-07 08:35 am
Report Date: 07-DEC-07
Project Manager: Brent Barron, II

Analysis Requested								
	Lab Id:	293991-001		293991-002				
	Field Id:	MW-1		MW-2				
	Depth:							
	Matrix:	WATER		WATER				
	Sampled:	Dec-04-07 15:25		Dec-04-07 16:00				
Total Chloride by EPA 325.3	***Extracted:***							
	Analyzed:	Dec-06-07 11:34		Dec-06-07 11:34				
	Units/RL:	mg/L	RL	mg/L	RL			
Chloride		117	5.00	53.2	5.00			

Brent Barron
Odessa Laboratory Director

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

* Outside XENCO'S scope of NELAC Accreditation

	Phone	Fax
11381 Meadowglen Lane Suite L Houston, Tx 77082-2647	(281) 589-0692	(281) 589-0695
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, Suite 104, San Antonio, TX 78238	(210) 509-3334	(201) 509-3335
2505 N. Falkenburg Rd., Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555

Laboratories

Blank Spike Recovery

Project Name: Saline Brine Station

Work Order #: 293991

Project ID:

Lab Batch #: 709928 | Sample: 709928-1-BKS | Matrix: Water

Date Analyzed: 12/06/2007 | Date Prepared: 12/06/2007 | Analyst: IRO

Reporting Units: mg/L | Batch #: 1

Total Chloride by EPA 325.3 Analytes	BLANK /BLANK SPIKE RECOVERY STUDY					
	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	100	95.7	96	80-120	

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

ENVIRONMENTAL LAB OF

Form 3 - MS / MSD Recoveries

Project Name: Saline Brine Station

Work Order #: 293991 **Project ID:**

Lab Batch ID: 709928 **QC- Sample ID:** 293991-002 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 12/06/2007 **Date Prepared:** 12/06/2007 **Analyst:** IRO

Reporting Units: mg/L

Total Chloride by EPA 325.3 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	53.2	500	542	98	500	553	100	2	80-120	20	

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

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

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

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

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

Project Manager: Ken Dutton PAGE 01 OF 01

Company Name: Basin Environmental Service Technologies, LLC

Company Address: 2800 Plains Hwy

City/State/Zip: Lovington, NM 88260

Telephone No: (505) 441-2124 Fax No: (505) 396-1429

Sampler Signature: [signature] e-mail: kdutton@basinenv.com

Project Name: SALINE BRINE STATION

Project #:

Project Loc: Lea County, NM

PO #: PAA - D. Bryant

Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 293991

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	CHLORIDES			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
001	MW-1			04-Dec-07	1525		1	X								GW												X				X
002	MW-2			04-Dec-07	1600		1	X								GW												X				X

Analyze For: TCLP: / TOTAL:

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Ken Dutton [signature]	5 Dec 07	0835			
Relinquished by:			Received by:		
Relinquished by:			Received by ELOT: [signature]	12/05/07	0835

Laboratory Comments: 2-1.2 [illegible]
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N
Labels on container(s) Y N
Custody seals on container(s) Y N
Custody seals on cooler(s) Y N
Sample Hand Delivered Y N
by Sampler/Client Rep.? Y N
by Courier? UPS DHL FedEx Lone Star
Temperature Upon Receipt: 5.0 °C

Environmental Lab of Texas

Variance/ Corrective Action Report--Sample Log-In

Client: Basin Environ.

Date/ Time: 12/05/07 18:35

Lab ID #: 293991

Initials: qm

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	5.0 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20	VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

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

QUEST CONSULTING, INC.

6700 W. LOOP SOUTH, SUITE 310 • BELLAIRE, TEXAS 77401 • TEL (713) 667-6323 • FAX (713) 667-6213

October 1, 2001

Mr. Ky Nichols
Plains Marketing L.P.
Route 1, Box 595
Cushing, Oklahoma 74023

Re: Monitor Well Installation and Sampling — Hobbs Brine Production Well Facility
Lea County, New Mexico
Quest Project No. 02420

Dear Ky:

This letter documents the installation and sampling of a monitor well at the Plains Marketing (PM) brine production well location in Hobbs, New Mexico. County, Texas. Quest Consulting, Inc. (Quest) was retained by PM to assist in addressing concerns raised by the New Mexico Oil Conservation Division (NMOCD) regarding elevated chloride levels in water supply wells located to the east of the PM facility. The objective of the well installation was to allow collection of a groundwater sample from a location directly between the PM brine production well and an offsite water well that exhibited elevated chloride levels in a recent sampling event. This report describes the construction and sampling of the monitor well, and the laboratory analytical results for the groundwater sample collected.

Background and Work Scope

The Hobbs brine production well is located approximately 2 miles west of the town of Hobbs, on the north side of US Highway 62/180. The site presently consists of a brine production well and associated pumping and piping equipment, three brine storage tanks, and some surplus tankage and other equipment. A monitor well is located approximately 90 feet to the east-southeast of the brine production well. The site is bounded by an undeveloped tract to the east, and further to the east by a property owned and operated by Guardian, an oilfield supply company. A water supply well is located on the northern part of the Guardian property. Another commercial property is located directly to the west, where a water supply well identified as the McNabb well is located. Figure 1 shows the general layout of the subject site and vicinity.

According to a letter dated May 31, 2001, from Environmental Strategies Corporation (ESC) to Mr. Wayne Price of the NMOCD, several samples collected from the Guardian water well in 2000 and 2001 had chloride concentrations in excess of 1,000 mg/l. The New Mexico State Water Quality Control Commission (WQCC) has set a standard of 250 mg/l of chloride for water-bearing

zones. The monitor well on the PM property showed a chloride concentration of 134 mg/l when sampled in August 1998 (at the time of installation). The ESC report states that preliminary data shows groundwater flow in the upper water-bearing unit (the Ogallala, found from the surface to a depth of about 200 ft below ground surface, or bgs) to be to the north and east. The ESC report provides a scope of work for installing a single monitor well to the east of the brine production well, on PM property.

Quest discussed the proposed well construction details with Mr. Price of the NMOCD prior to commencing any work at the site. Mr. Price indicated that the agency wanted the well to be completed to the bottom of the Ogallala water-bearing unit (approximately 175 ft bgs), and that only the bottom 10 ft of the well was to be screened, in order to determine if high-density brine had been released from the brine production well. The construction details were agreed upon by Quest and the NMOCD prior to the start of construction.

Well Installation

The well installation was performed on September 6 and 7, 2001. The drilling and well construction was performed by Eades Drilling and Pump Service of Hobbs, with a Quest geologist logging cuttings and overseeing the well construction. Mr. Paul Sheeley and Mr. Larry Johnson of the NMOCD Hobbs district office were present during much of the drilling, well construction, and well development activities. The well location, which was determined by Mr. Price, was approximately 250 ft east-northeast of the brine production well, approximately 20 ft west of the western boundary fence of the PM property. The monitor well was placed on the direct line from the brine production well to the Guardian water well.

The boring was emplaced using a truck mounted drilling rig, using air rotary (top 50 ft) and wet rotary (remainder to total boring depth) methods. The drillers utilized a very small amount (less than one quart) of synthetic water-based polymer to aid in keeping the boring from collapsing during drilling and well construction activities. The boring diameter was approximately eight inches. Cuttings were circulated to the surface, where they were inspected and logged by the Quest geologist, and then into several settling tanks. The water used in the drilling operations was provided by Eades from a fresh water well at the company's yard in Hobbs. The subsurface geology was generally a progression of poorly sorted, unconsolidated sand layers, with some gravel, with intercalated hard caliche and sandstone layers. Saturated sands were encountered at approximately 50 ft bgs. The boring was completed to 171 ft, when cuttings indicated that the "red bed" clay layer had been encountered. This stratum is considered to be the base of the Ogallala water-bearing zone, and was the agreed-upon base for the well installation. The boring log for the monitor well, providing a description of the subsurface geology, is presented in Attachment A.

The monitor well (identified as MW-2) was constructed using four-inch diameter PVC screen and riser. The well had 10 ft of .020-inch machine-slotted screen (set at 170 ft bgs), and approximately 165 ft of solid riser. A sand pack, using 12/20 size quartz sand, was set to approximately 2 ft above the top of the screen (tagged using a weighted tape measure). A 2 ft thick layer of bentonite chips was placed atop the sand pack; this layer was also tagged using

the tape measure. The remaining annulus space was filled with a cement/bentonite slurry, which was placed using a tremie pipe. The tremie pipe was originally placed to a depth of 150 ft, and was successively elevated as the annulus was filled with the slurry. The well was completed with a concrete pad and locking steel protective cover over the PVC stickup. The well construction details are presented in Attachment A.

The water used in drilling operations, and the cuttings from the well boring, were discharged into a former caliche pit directly south of the monitor well on the PM site.

Well Sampling and Analytical Results

Prior to development of the well, the static water level was measured using a water level indicator. Groundwater was encountered at a depth of 54.02 ft below the top of the well casing. The groundwater level in the nearby MW-1 was also measured at this time, with a result of 51.11 ft below top of casing.

The monitor well was developed using an electric submersible pump, which was lowered to the bottom of the well on one-inch PVC pipe. After several attempts to pump at a higher rate, which pumped the well dry, the well was pumped at a steady rate of approximately 8 gal/min for 90 minutes. It is estimated that 800 gal in total was removed from the well. For the final 25 minutes of the pumping, Quest measured pH, total dissolved solids (TDS), conductivity, and temperature on a regular basis to determine if the well had stabilized. These parameters varied less than 5% during the measurement period, and it was determined that the well had been adequately developed and purged.

A sample of the groundwater was collected into laboratory-supplied containers, and was subsequently transported to e-Lab, Inc. in Houston, Texas by overnight courier for analysis. Standard chain-of-custody procedures were followed for handling of the sample. The sample was analyzed for total dissolved solids (TDS; EPA Method 160.1), and for chlorides (EPA Method 325.3), as proposed in the ESC letter and in discussions with the NMOCD. The laboratory data sheets and chain-of-custody documentation are found in Attachment B.

The analytical results are as follows:

TDS	300 mg/l
chloride	30 mg/l

The chloride results are substantially lower than the WQCC standard of 250 mg/l. The laboratory TDS result is similar to the field results noted during the well development and purging (average of about 360 mg/l).

Conclusions

A monitor well was installed in the location recommended by the NMOCD to determine if a possible release of brine from the PM brine production well had impacted other water wells to the

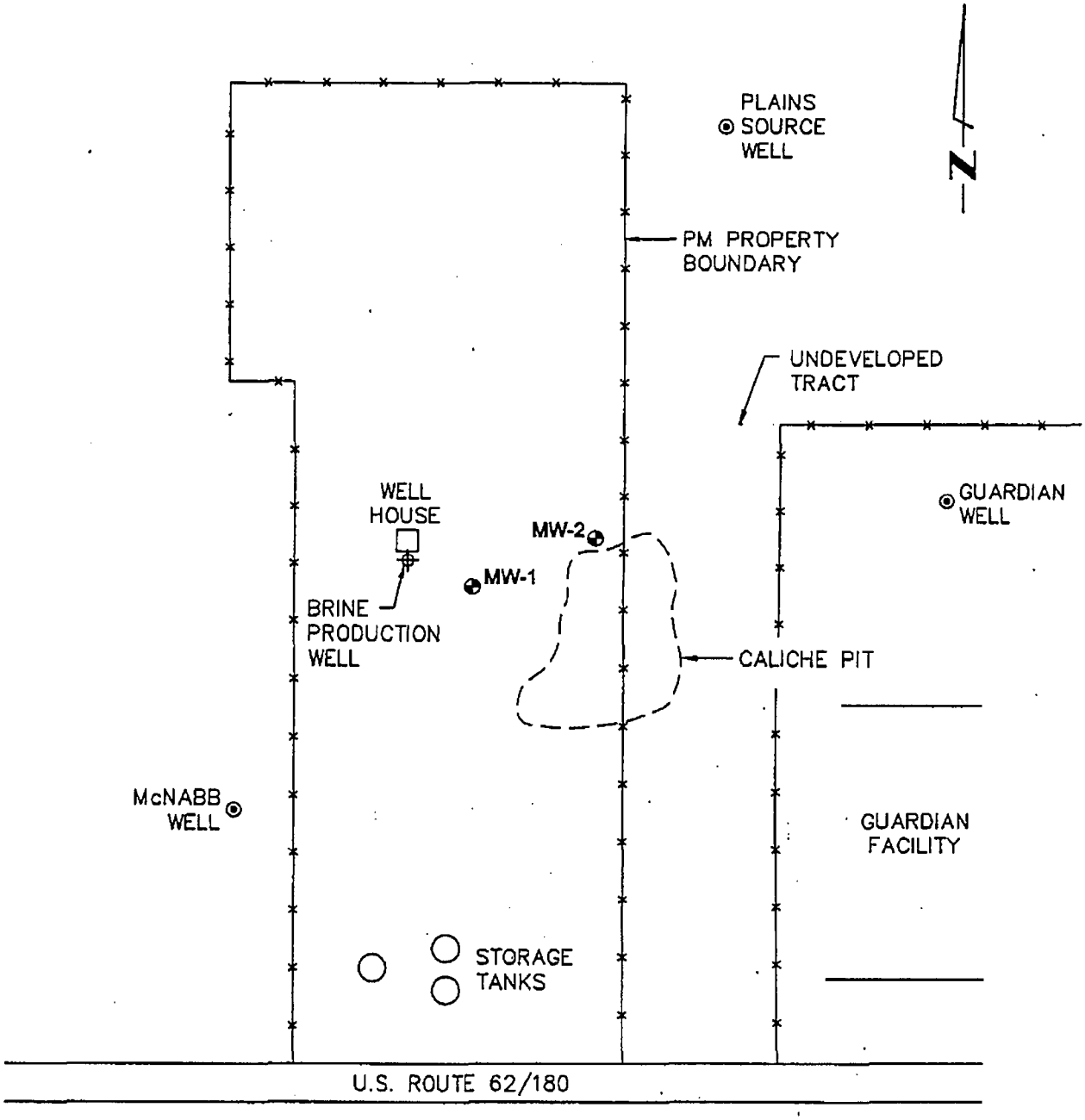
east of the PM site. The well construction details were agreed upon between PM and NMOCD prior to the drilling and installation activities, and the well was constructed using these guidelines. The results of the monitor well sampling indicate no chloride impact in the Ogallala water-bearing zone in the area to the east of the brine production well. Therefore, the brine production well is not the source of elevated chlorides in the Guardian water well, or other water wells located to the east of the PM site.

We appreciate the opportunity to assist you with your environmental needs. If you have any questions regarding this project, please contact me at 713-667-6323.

Sincerely,

Douglas S Kennedy
Project Manager

Attachments



LEGEND:

- ◓ – MONITOR WELL
- ⊙ – FRESH WATER WELL
- ⌖ – BRINE PRODUCTION WELL

0 200

FEET
APPROX.SCALE

QUEST CONSULTING, INC.

Figure 1
Site Map
PM Hobbs Brine Production Well
Hobbs, New Mexico

PROJ. NO: 02420	CK:	DATE: 9/01

09/27/01 22:18 TDR F:\ACAD\QUEST\02420\02420-01.dwg

Attachment A

Boring Log and Monitor Well Construction Detail

QUEST CONSULTING, INC. Sh. 1 of 2

SKETCH MAP

WELL NUMBER MW-2
PROJECT Plains – Hobbs Brine
OWNER Plains Marketing
LOCATION Hobbs, New Mexico
PROJECT NO. 02420
TOTAL DEPTH 170 ft. SURFACE ELEV. N/A BOREHOLE DIA. .
WATER FIRST ENCOUNTERED Approx. 50 ft. 24-HRS. .
SCREEN DIA. 4 inches LENGTH 10 ft. SLOT SIZE 0.010 inches
CASING DIA. 4 inches LENGTH 160 ft. TYPE Sch. 40 PVC
SCREENED INTERVAL 170–160 ft. bgs OTHER .
DRILLING COMPANY Eades Drilling DRILLING METHOD Air/Water Rotary
DRILLER . GEOLOGIST D. Kennedy DATE DRILLED 9/6/2001

DEPTH (feet)	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION	WELL CONSTRUCTION	CONSTRUCTION NOTES
				Steel Protective Well Cover
0		0–45 Buff/pink silty SAND, very fine-grained		
		– thin caliche layers 0–5 ft		
10		– hard caliche layer at 15 ft.		
20				
30		– hard caliche layer at 26–30 ft.		Cement / Bentonite Grout
40		– hard caliche layers at 40–45 ft.		
		– grades to below		
		45–104 Tan silty SAND, poorly sorted, moist		
50		– saturated at 50 ft.		
60				
70				
80				
		– thin sandstone layers at 85–98 ft.		
90				
100				

09/22/01 22:18 TDR F:\ACAD\QUEST\02420\mw-2a.dwg

QUEST CONSULTING, INC. Sh. 2 of 2

WELL NUMBER MW-2

PROJECT Plains – Hobbs Brine | OWNER Plains Marketing

LOCATION Hobbs, New Mexico | PROJECT NO. 02420

TOTAL DEPTH 170 ft. | SURFACE ELEV. N/A | BOREHOLE DIA. .

WATER FIRST ENCOUNTERED Approx. 50 ft. | 24-HRS. .

SCREEN DIA. 4 inches | LENGTH 10 ft. | SLOT SIZE 0.010 inches

CASING DIA. 4 inches | LENGTH 160 ft. | TYPE Sch. 40 PVC

SCREENED INTERVAL 170–160 ft. bgs | OTHER .

DRILLING COMPANY Eades Drilling | DRILLING METHOD Air/Water Rotary

DRILLER . | GEOLOGIST D. Kennedy | DATE DRILLED 9/6/2001

SKETCH MAP

DEPTH (feet)	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION	WELL CONSTRUCTION	CONSTRUCTION NOTES
100		– very hard sandstone layer at 102 ft.		
		104–110 White/buff sandy CLAY – soft.		
110		110–114 Very hard precipitated carbonate layer.		
		114–135 Tan silty SAND		Cement / Bentonite Grout
120				
130		– grades to below		
		135–168 Unconsolidated gravelly SAND – with chert and quartzite pebbles – poorly sorted, soft.		
140		– pink sandy clay layers at 140–160 ft.		
150				
160				Bentonite
				Sand Pack
170		168–171 Red silty CLAY.		
		TOTAL DEPTH = 171 FT.		
180				
190				

09/22/01 22:36 TDR F:\ACAD\QUEST\02420\mw-2b.dwg

Attachment B

Laboratory Analytical Data Sheets and
Chain of Custody Documentation

e-Lab
QUALITY • INTEGRITY • SERVICE

e-Lab, Inc.
10450 Stancliff Road, Suite 210 • Houston, Texas 77099 • Ph: 281.530.5656 • Fax 281.530.5887

September 19, 2001

Doug Kennedy
Quest Consulting
6700 West Loop South
Suite 310
Houston, TX 77401
TEL: (713) 667-6323
FAX (713) 667-6213

RE: Hobbs Brine 02420 Work Order No.: 0109031

Dear Doug Kennedy,

e-Lab, Inc. received 1 sample on 9/8/01 9:42:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by e-Lab, Inc. and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by e-Lab Inc. The total number of pages in this report is 7.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Shannon L. Tyrell
Project Manager

e-Lab, Inc.

Date: *September 19, 2001*

CLIENT:	Quest Consulting
Project:	Hobbs Brine 02420
Work Order:	0109031
Date Received:	9/8/01

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0109031-01	MW-2		9/7/01 10:32:00 AM

e-Lab, Inc. **Date:** *September 19, 2001*

CLIENT: Quest Consulting **Work Order:** 0109031
Project: Hobbs Brine 02420

Lab ID: 0109031-01A **Collection Date:** 9/7/01 10:32:00 AM
Client Sample ID: MW-2 **Matrix:** WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
TOTAL DISSOLVED SOLIDS			**E160.1**			Analyst: **SAM**
Total Dissolved Solids (Residue, Filterable)	300	10		mg/L	1	9/13/01

Lab ID: 0109031-01B **Collection Date:** 9/7/01 10:32:00 AM
Client Sample ID: MW-2 **Matrix:** WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
CHLORIDE			**E325.3**			Analyst: **SAM**
Chloride	30	1.0		mg/L	1	9/19/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc.

CLIENT: Quest Consulting
Work Order: 0109031
Project: Hobbs Brine 02420

Date: *Sep 19 2001*

QC BATCH REPORT

Batch ID: **R6015** InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WMBLKW1-0913** Test Code: **E160.1** Units: **mg/L** Analysis Date **9/13/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

LCS Sample ID: **WLCSW1-0913** Test Code: **E160.1** Units: **mg/L** Analysis Date **9/13/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	994	10	1000	0	99.4	75	125	0			

LCSD Sample ID: **WLCSW2-0913** Test Code: **E160.1** Units: **mg/L** Analysis Date **9/13/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	922	10	1000	0	92.2	75	125	0			

LCSD Sample ID: **WLCSW3-0913** Test Code: **E160.1** Units: **mg/L** Analysis Date **9/13/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	902	10	1000	0	90.2	75	125	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
U - Analyzed for but not detected

CLIENT: Quest Consulting
Work Order: 0109031
Project: Hobbs Brine 02420

QC BATCH REPORT

Batch ID: **R6050** InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WBLKW1-0919** Test Code: **E325.3** Units: **mg/L** Analysis Date **9/19/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	1.0									

LCS Sample ID: **WLCSW1-0919** Test Code: **E325.3** Units: **mg/L** Analysis Date **9/19/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	999.8	1.0	1000	0	100	80	120	0			

MS Sample ID: **0109031-01BMS** Test Code: **E325.3** Units: **mg/L** Analysis Date **9/19/01** Prep Date:
Client ID: **MW-2** Run ID: **WET CHEMISTRY_0109** SeqNo: **109738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	47.13	1.0	20	29.52	88.1	80	120	0			

DUP Sample ID: **0109031-01BDUP** Test Code: **E325.3** Units: **mg/L** Analysis Date **9/19/01** Prep Date:
Client ID: **MW-2** Run ID: **WET CHEMISTRY_0109** SeqNo: **109737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	28.57	1.0	0	0	0	0	0	29.52	3.28	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
U - Analyzed for but not detected

e-Lab, Inc.
10456 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

Page 1 of 1

e-Lab, Inc.
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

e-Lab Project Manager:

e-Lab Work Order #: 0109031

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hobbs Brine	A	Total Dissolved Solids
Work Order		Project Number	02420	B	Chloride (325.3)
Company Name	Quest Consulting	Bill To Company	Quest Consulting	C	
Send Report To	Doug Kennedy	Invoice Attn	Doug Kennedy	D	
Address	6700 West Loop South #310	Address	6700 West Loop South #310	E	
City/State/Zip	Houston, TX 77401	City/State/Zip	Houston, TX 77401	F	
Phone	713-667-6323	Phone	713-667-6323	G	
Fax	713-667-6213	Fax	713-667-6213	H	
e-Mail Address				I	
				J	

Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
MW-2	9/7/01	1032	water	Ø	2	X	X									

Sample(s): Please Print & Sign: DS KENNEDY

Shipment Method:

Required Turnaround Time: (Check Box) ☒ STD. 10 W. Days ☐ 5 W. Days ☐ 2 W. Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Notes:
DSK	9 7 01	1115		
Relinquished by:	Date: 9/8/01	Time: 0945	Received by (Laboratory):	
Logged by (Laboratory):	Date: 9/10/01	Time:	Checked by (Laboratory):	

e-Lab Cooler ID	Cooler Temp.	QC Package: (Check Box Below)	X
0046	5.1°C	Level II: Standard QC	
		Level III: Standard QC + Raw Data	
		Level IV: SW846 Methods/CLP	
		Other:	

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to e-Lab, Inc.

e-Lab
QUALITY • INTEGRITY • SERVICE

e-Lab, Inc.
10450 Stancliff Road, Suite 210 • Houston, Texas 77099 • Ph: 281.530.5656 • Fax: 281.530.5887

September 19, 2001

Doug Kennedy
Quest Consulting
6700 West Loop South
Suite 310
Houston, TX 77401
TEL: (713) 667-6323
FAX (713) 667-6213

RE: Hobbs Brine 02420 Work Order No.: 0109031

Dear Doug Kennedy,

e-Lab, Inc. received 1 sample on 9/8/01 9:42:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by e-Lab, Inc. and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by e-Lab Inc. The total number of pages in this report is 7.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Shannon L. Tyrell
Project Manager

e-Lab, Inc. **Date:** *September 19, 2001*

CLIENT: Quest Consulting **Work Order:** 0109031
Project: Hobbs Brine 02420

Lab ID: 0109031-01A **Collection Date:** 9/7/01 10:32:00 AM
Client Sample ID: MW-2 **Matrix:** WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
TOTAL DISSOLVED SOLIDS			**E160.1**			Analyst: **SAM**
Total Dissolved Solids (Residue, Filterable)	300	10		mg/L	1	9/13/01

Lab ID: 0109031-01B **Collection Date:** 9/7/01 10:32:00 AM
Client Sample ID: MW-2 **Matrix:** WATER

Analyses	Result	Report Limit	Qual	Units	Dilution Factor	Date Analyzed
CHLORIDE			**E325.3**			Analyst: **SAM**
Chloride	30	1.0		mg/L	1	9/19/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results percent difference > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

e-Lab, Inc.

CLIENT: Quest Consulting
Work Order: 0109031
Project: Hobbs Brine 02420

Date: *Sep 19 2001*

QC BATCH REPORT

Batch ID: R6015 InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WMBLKW1-0913** Test Code: **E160.1** Units: **mg/L** Analysis Date **9/13/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

LCS Sample ID: **WLCSW1-0913** Test Code: **E160.1** Units: **mg/L** Analysis Date **9/13/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	994	10	1000	0	99.4	75	125	0			

LCSD Sample ID: **WLCSW2-0913** Test Code: **E160.1** Units: **mg/L** Analysis Date **9/13/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	922	10	1000	0	92.2	75	125	0			

LCSD Sample ID: **WLCSW3-0913** Test Code: **E160.1** Units: **mg/L** Analysis Date **9/13/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	902	10	1000	0	90.2	75	125	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
U - Analyzed for but not detected

CLIENT: Quest Consulting
Work Order: 0109031
Project: Hobbs Brine 02420

QC BATCH REPORT

Batch ID: R6050 InstrumentID: **Wet Chemistry**

MBLK Sample ID: **WBLKW1-0919** Test Code: **E325.3** Units: **mg/L** Analysis Date **9/19/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	1.0									

LCS Sample ID: **WLCSW1-0919** Test Code: **E325.3** Units: **mg/L** Analysis Date **9/19/01** Prep Date:
Client ID: Run ID: **WET CHEMISTRY_0109** SeqNo: **109735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	999.8	1.0	1000	0	100	80	120	0			

MS Sample ID: **0109031-01BMS** Test Code: **E325.3** Units: **mg/L** Analysis Date **9/19/01** Prep Date:
Client ID: **MW-2** Run ID: **WET CHEMISTRY_0109** SeqNo: **109738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	47.13	1.0	20	29.52	88.1	80	120	0			

DUP Sample ID: **0109031-01BDUP** Test Code: **E325.3** Units: **mg/L** Analysis Date **9/19/01** Prep Date:
Client ID: **MW-2** Run ID: **WET CHEMISTRY_0109** SeqNo: **109737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	28.57	1.0	0	0	0	0	0	29.52	3.28	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
U - Analyzed for but not detected

e-Lab, Inc.

Date: *September 19, 2001*

CLIENT:	Quest Consulting
Project:	Hobbs Brine 02420
Work Order:	0109031
Date Received:	9/8/01

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date
0109031-01	MW-2		9/7/01 10:32:00 AM

e-Lab, Inc.

e-Lab, Inc
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

Page 1 of 1

e-Lab, Inc
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

e-Lab Project Manager:

e-Lab Work Order #: 0109031

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Hobbs Brine	A	Total Dissolved Solids
Work Order		Project Number	02420	B	Chloride (325.3)
Company Name	Quest Consulting	Bill To Company	Quest Consulting	C	
Send Report To	Doug Kennedy	Invoice Attn	Doug Kennedy	D	
Address	6700 West Loop South #310	Address	6700 West Loop South #310	E	
City/State/Zip	Houston, TX 77401	City/State/Zip	Houston, TX 77401	F	
Phone	713-667-6323	Phone	713-667-6323	G	
Fax	713-667-6213	Fax	713-667-6213	H	
e-Mail Address				I	
				J	

#	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-2	9/7/01	1032	water	Ø	2	X	X									
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign: DS KENNEDY

Shipment Method:

Required Turnaround Time: (Check Box) ☐ Other ☒ STD. 10 W. Days ☐ 5 Wk. Days ☐ 2 Wk. Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Notes:
DSK	9 7 01	1115		
Relinquished by:	Date: 9/8/01	Time: 0945	Received by (Laboratory):	e-Lab Cooler ID: 0064
Relinquished by (Laboratory):	Date: 9/10/01	Time:	Checked by (Laboratory):	Cooler Temp: 5.1°C

QC Package: (Check Box Below)

	X
Level II: Standard QC	
Level III: Standard QC + Raw Data	
Level IV: SW846 Methods/CLP	
Other:	

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to e-Lab, Inc

Analytical Report 426112

for

PLAINS ALL AMERICAN EH&S

Project Manager: Jason Henry

Saline #1 Monitor Wells P & A

HOB-00

22-AUG-11

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

22-AUG-11

Project Manager: **Jason Henry**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No: **426112**
Saline #1 Monitor Wells P & A
Project Address: Lea County, NM

Jason Henry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 426112. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 426112 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Brent Barron II
Odessa Laboratory Manager

Sample Cross Reference 426112

PLAINS ALL AMERICAN EH&S, Midland, TX

Saline #1 Monitor Wells P & A

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	08-04-11 09:30		426112-001
MW-2	W	08-04-11 15:00		426112-002

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Saline #1 Monitor Wells P & A

Project ID:	*HOB-00*	*Report Date:*	*22-AUG-11*
Work Order Number:	*426112*	*Date Received:*	*08/19/2011*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 426112

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Saline #1 Monitor Wells P & A

Project Id: HOB-00
Contact: Jason Henry
Project Location: Lea County, NM

Date Received in Lab: Fri Aug-19-11 11:58 am
Report Date: 22-AUG-11
Project Manager: Brent Barron II

Analysis Requested	*Lab Id:*	426112-001		426112-002					
	Field Id:	MW-1		MW-2					
	Depth:								
	Matrix:	WATER		WATER					
	Sampled:	Aug-04-11 09:30		Aug-04-11 15:00					
Inorganic Anions In Water by E300	*Extracted:*								
	Analyzed:	Aug-20-11 12:50		Aug-20-11 12:50					
	Units/RL:	mg/L	RL	mg/L	RL				
Chloride		632	12.5	81.9	2.50				

Brent Barron II
Odessa Laboratory Manager

Final 1.000

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

BS / BSD Recoveries

Project Name: Saline #1 Monitor Wells P & A

Work Order #: 426112 **Project ID:** HOB-00

Analyst: BRB **Date Prepared:** 08/20/2011 **Date Analyzed:** 08/20/2011

Lab Batch ID: 867847 **Sample:** 867847-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions In Water by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.500	10.0	10.6	106	10.0	10.6	106	0	80-120	20	

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

Final 1.000

Form 3 - MS Recoveries

Project Name: Saline #1 Monitor Wells P & A

Work Order #: 426112
Lab Batch #: 867847
Project ID: HOB-00
Date Analyzed: 08/20/2011
Date Prepared: 08/20/2011
Analyst: BRB
QC- Sample ID: 426111-001 S
Batch #: 1
Matrix: Water
Reporting Units: mg/L

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	142	50.0	187	90	80-120	

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

BRL - Below Reporting Limit

Sample Duplicate Recovery

Project Name: Saline #1 Monitor Wells P & A

Work Order #: 426112

Lab Batch #: 867847 **Project ID:** HOB-00

Date Analyzed: 08/20/2011 12:50 **Date Prepared:** 08/20/2011 **Analyst:** BRB

QC- Sample ID: 426111-001 D **Batch #:** 1 **Matrix:** Water

Reporting Units: mg/L

Inorganic Anions In Water by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	142	143	1	20	

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

Xenco Laboratories

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

Project Manager: Ben J. Arguijo
Company Name: Basin Environmental Service Technologies, LLC
Company Address: P. O. Box 301
City/State/Zip: Lovington, NM 88260
Telephone No: (575)396-2378 Fax No: (575) 396-1429
Sampler Signature: Dakotah Ward e-mail: bjarguijo@basinenv.com

Project Name: Saline #1 Monitor Wells P&A
Project #: 408-00
Project Loc: Lea County, NM
PO #: PAA-J. Henry
Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 426112

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge / GW = Groundwater S=Soil/Solid / NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 / 8015M	TPH: TX 1005 / TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	TOTAL: BTEX 8021B/5030 or BTEX 8260	RCI	Chlorides	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
001	MW-1			8/4/2011	0930		1	X								GW								X		X		X
002	MW-2			8/4/2011	1500		1	X								GW								X		X		X

Special Instructions:
Please e-mail a copy of the analytical results to Wayne Roberts (weroberts@paalp.com).

Relinquished by:	Date	Time	Received by:	Date	Time
Dakotah Ward	8/10/11	1700		8/10/11	1700
Relinquished by:	Date	Time	Received by:	Date	Time
	8/19/11	0800	Kristina Bernal	8/10/11	900
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
Kristina Bernal	8/19/11	11:58	A Hernandez	8/19/11	11:58

AA # 8/19/11

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered by Sampler/Client Rep.?	Y	N

by Courier? UPS DHL FedEx Lone Star
250 poly
Temperature Upon Receipt: 5.5 °C

XENCO Laboratories	XENCO Laboratories Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa	Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Plains

Date/Time: 8/19/11 11:58

Lab ID # : 426112

Initials: AH

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	No	(N/A)	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	5.5 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

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

Regarding: _____

_____

Corrective Action Taken: _____

_____

_____

_____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

TABLE 1

CONCENTRATIONS OF CHLORIDES AND TOTAL DISSOLVED SOLIDS IN GROUNDWATER

PLAINS MARKETING, L.P.
SALINE #1 BRINE STATION
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DATE	CHLORIDES (mg/L)	TDS (mg/L)
MW-1	Aug-98	134	N/A
MW-1	09/07/01	30	300
MW-2	09/07/01	N/A	N/A
MW-1	12/04/07	117	N/A
MW-2	12/04/07	53.2	N/A
MW-1	08/04/11	632	N/A
MW-2	08/04/11	81.2	N/A