SUBSIDENCE MONITORING REPORTS

From:

VonGonten, Glenn, EMNRD

Sent:

Friday, January 23, 2009 1:12 PM

To:

Chavez, Carl J, EMNRD

Subject: Attachments:

FW: loco hills sinks LHsink2-1-18-09-4.jpg; LHsink2-1-18-09-6.jpg; LHsink-01-18-09-2.jpg

Carl.

I'll put these photos on the L drive and the ftp site (when we get more room).

Glenn von Gonten Senior Hydrologist Environmental Bureau Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505 505-476-3488 fax -476-3462 glenn.vongonten@state.nm.us

From: Lewis Land [mailto:lland@nckri.org] **Sent:** Friday, January 23, 2009 12:02 PM

To: VonGonten, Glenn, EMNRD **Subject:** loco hills sinks

Hi Glenn, I thought you might be interested in the latest aerial shots of the Loco Hills sinkholes. Number 2 has grown quite a bit since my last visit there in December. The first one has apparently stabilized, although you can still see exciting concentric fractures around it. –Lewis Land

From:

Sherry Glass [SGlass@kpk.com]

Sent:

Thursday, December 18, 2008 9:14 AM

To:

Brad Berge; Brian Henington; Chavez, Carl J, EMNRD; Davis O'Connor; Dimas Herrera; VonGonten, Glenn, EMNRD; J. Arnwine; Carr, Jim A.; Griswold, Jim, EMNRD; Kelsey H. Wasylenky; kgoil@msn.com; Kevin Kauffman; Larry Kehoe; Ocean Munds-Dry; Paul Phillips;

Sherry Glass; Price, Wayne, EMNRD

Subject:

FW: Fence Job

For your information, the latest update from Roadrunner Environmental. Thank you.

From: roadrunner office [mailto:roadrunneroffice@swwmail.net]

Sent: Thursday, December 18, 2008 8:53 AM

To: Sherry Glass **Subject:** Fence Job

Sherry,

Continuing to set and cement poles on north side of fence. Finish digging holes on west side of fence to be able to set and cement poles tomorrow on west side.

Thank You, Shawn Hnulik (575)361-3771

From:

Sherry Glass [SGlass@kpk.com]

Sent:

Friday, December 12, 2008 10:22 AM

To:

Chavez, Carl J, EMNRD; Carr, Jim A.; Price, Wayne, EMNRD; Paul Phillips; Brad Berge;

Ocean Munds-Dry

Cc:

Kent Gilbert, Kevin Kauffman; Kelsey H. Wasylenky

Subject: status fence update 12-12-08

Shawn of Roadrunner Environmental gave me my daily update this morning on the status of the fence; the crews were still digging postholes yesterday, the east side is completed and they are working on the north side today. They will not work this weekend. By Monday, they will be digging on the west side. Their plan is to complete the post holes on the south (road) side last. I will send a status report on Monday. Have a good weekend! Thanks.

From:

Sherry Glass [SGlass@kpk.com]

Sent:

Wednesday, December 10, 2008 8:45 AM

To:

Carr, Jim A.; Chavez, Carl J, EMNRD; Price, Wayne, EMNRD; Brad Berge; Paul Phillips;

Ocean Munds-Dry; Kent Gilbert; Kelsey H. Wasylenky; Kevin Kauffman;

dherrera@swwmail.net

Subject:

FW: Fence Job

From: roadrunner office [mailto:roadrunneroffice@swwmail.net]

Sent: Wednesday, December 10, 2008 8:41 AM

To: Sherry Glass **Subject:** Fence Job

Sherry,

We are digging the holes for the corner posts. Going to set and cement corner posts and run slick wire today. If you have any questions, you can contact me at (575)361-3771.

Thank You, Shawn Hnulik Sales

From:

Chavez, Carl J, EMNRD

Sent:

Tuesday, December 09, 2008 8:01 AM

To:

'Moore, Darrell'

Cc: Subject: Price, Wayne, EMNRD RE: Small fire at Artesia Plant

Darrell:

Good morning. Please submit a C-141 to document the fire and the corrective action taken to address the problem. Also, any release of fluids, type and estimated volume of any release. Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

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

Office: (505) 476-3491 Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/ index.htm (Pollution Prevention Guidance is under "Publications")

From: Moore, Darrell [mailto:Darrell.Moore@hollycorp.com]

Sent: Monday, December 08, 2008 9:55 AM

To: Chavez, Carl J, EMNRD

Subject: Small fire at Artesia Plant

Carl

We had a small fire here at the plant on Saturday at 6:20 pm. A depropanizer pump in the Alky Unit blew a seal and the escaping C4/C5 flashed. There were no injuries and very minor damage (melted electric lines). This is the first time we have reported a fire as per our discharge permit. Is this e mail enough or do we need to fill out a form? If so, which form do we fill out?

Darrell Moore

Environmental Manager for Water and Waste Navajo Refining Company, LLC Phone Number 575-746-5281 Cell Number 575-703-5058 Fax Number 575-746-5451

From:

VonGonten, Glenn, EMNRD

Sent:

Tuesday, November 18, 2008 2:31 PM

To:

Price, Wayne, EMNRD; Chavez, Carl J, EMNRD; Hansen, Edward J., EMNRD; Lowe,

Leonard, EMNRD; Snyder, Jim, EMNRD; Griswold, Jim, EMNRD; Jones, Brad A., EMNRD

Subject:

FW: new photos

Attachments: LHsink-07-28-08-4.jpg; LHsink-11-18-08-5.jpg

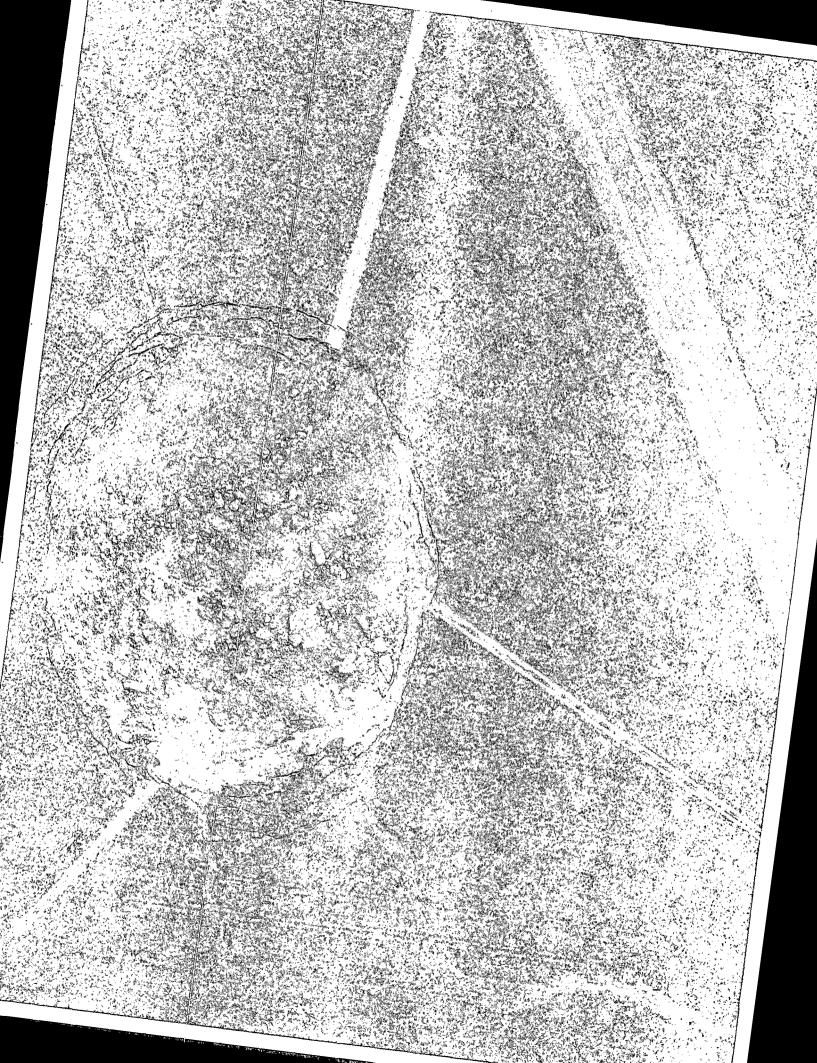
Glenn von Gonten Senior Hydrologist Environmental Bureau Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505 505-476-3488 fax -476-3462 glenn.vongonten@state.nm.us

From: Lewis Land [mailto:lland@nckri.org]
Sent: Tuesday, November 18, 2008 2:23 PM

To: VonGonten, Glenn, EMNRD

Subject: new photos

Hi Glenn. Attached are a couple of photos of Loco Hills sinkhole #1, the first taken on 7/28 and the second taken just this morning. They're interesting because they were both taken from roughly the same viewing angle. If you study the patterns of vegetation, you can see that the sinkhole has enlarged a bit mainly on the southwest and southeast margins. -Lewis





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Leonard, EMNRD; Snyder, Jim, EMNRD; Griswold, Jim, EMNRD; Jones, Brad A., EMNRD

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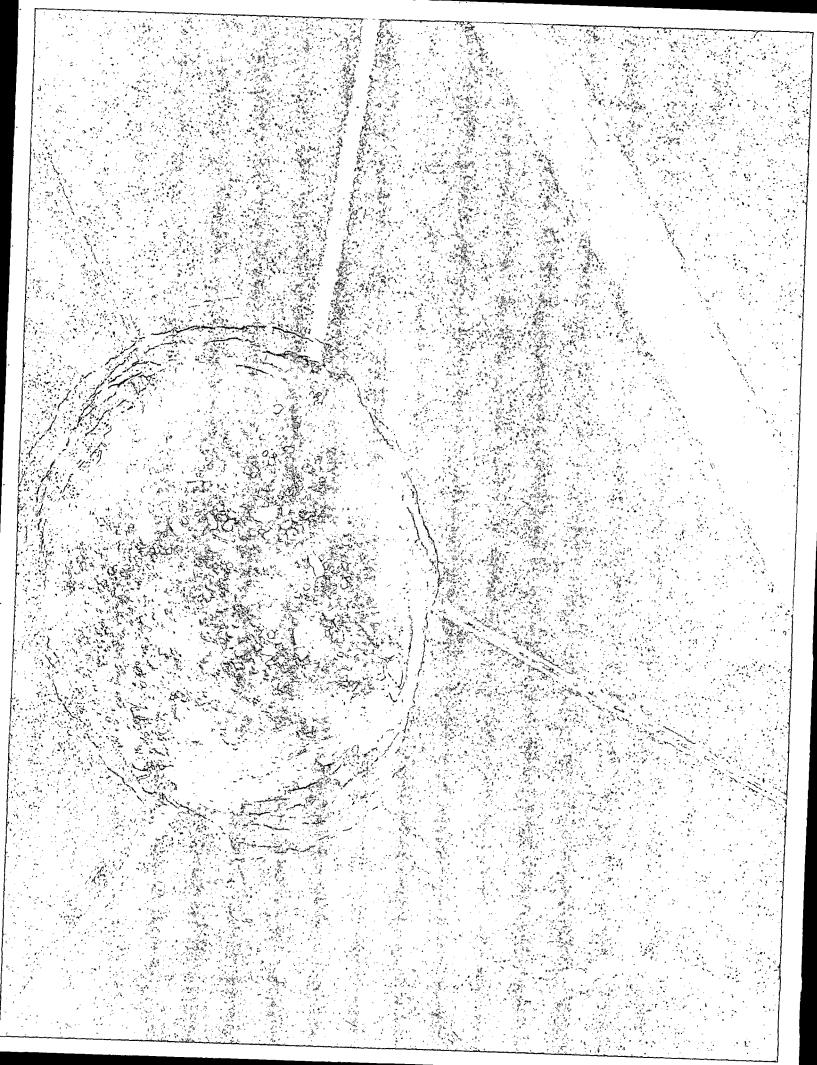
Glenn von Gonten Senior Hydrologist Environmental Bureau Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505 505-476-3488 fax -476-3462 glenn.vongonten@state.nm.us

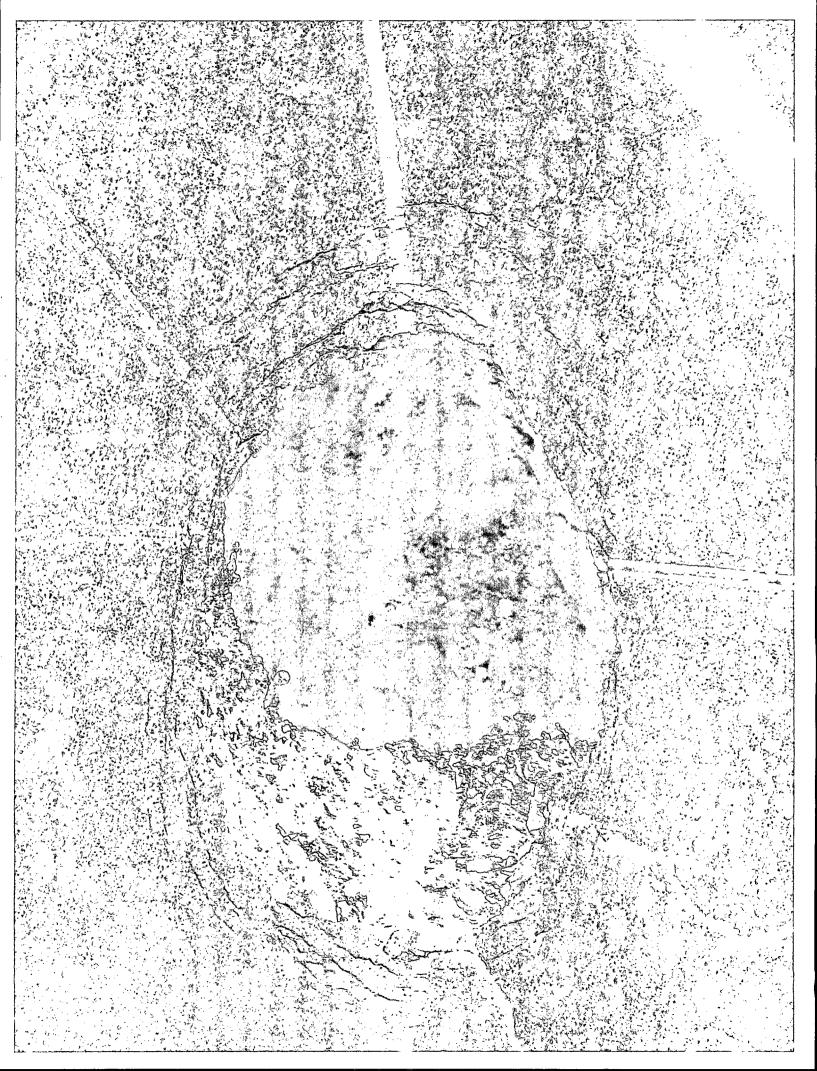
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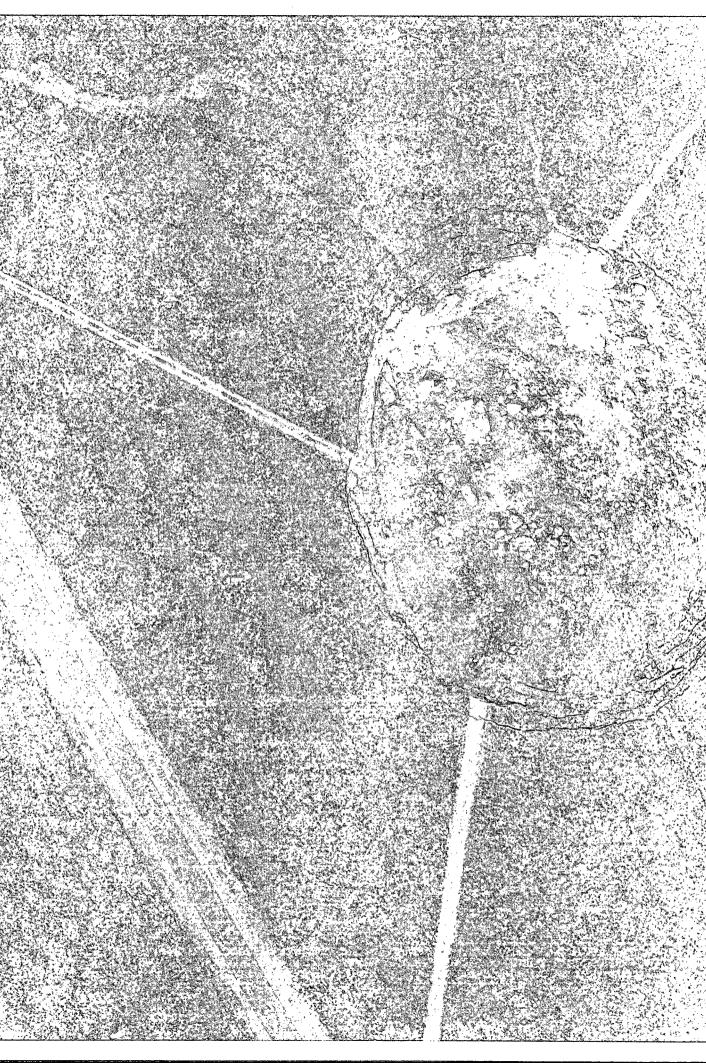
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From:

Chavez, Carl J, EMNRD

Sent:

Friday, November 14, 2008 4:38 PM

To:

'ziatransports@gmail.com'; 'jrmillett@gmail.com'; 'rharrisnm@aim.com'; 'gandy2@leaco.net';

'seay04@leaco.net'; 'iwcarlsbad@plateautel.net'; 'Patterson, Bob'; 'Dimas Herrera'; 'gil@mull.us'; 'David Pyeatt'; 'Wayne E Roberts'; Dennis L Shearer; 'garymschubert@aol.com';

'dgibson@keyenergy.com'; 'Clay Wilson'; 'Prather, Steve'; Ronnie D Devore

Cc:

Hill, Larry, EMNRD; Gum, Tim, EMNRD; Price, Wayne, EMNRD

Subject:

Brine Well Moratorium Press Release Today

Attachments: PR-OCD Brine Well Moratorium.pdf

FYI, please see the attached NM OCD Press Release issued today. Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

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

Office: (505) 476-3491 Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications")

Bill Richardson

C-----

Joanna Prukop Cabinet Secretary Reese Fullerton Deputy Cabinet Secretary Mark Fesmire
Division Director
Oil Conservation Division



November 14, 2008

Contact: Jodi McGinnis Porter,

Public Information Officer 505.476.3226

Energy, Minerals and Natural Resources Cabinet Secretary Prukop Orders a Six Month Moratorium on New Brine Wells

Oil Conservation Division to Investigate Brine Well Collapses and Provide Recommendations

SANTA FE, NM – Secretary Joanna Prukop today ordered the Oil Conservation Division to place a six month moratorium on any new brine well applications located in geologically sensitive areas. Secretary Prukop's action comes following the second brine well collapse in less than four months in southeastern New Mexico. The Secretary has also directed the Oil Conservation Division to work with the Environmental Protection Agency, other states, technical experts and oil and gas industry representatives to examine the causes of recent collapses, and provide a report with recommendations to the Oil Conservation Commission for a safe path forward. The report should be completed by May 1, 2009.

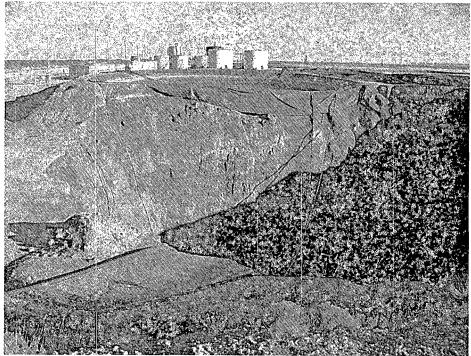
"I am deeply concerned by these two serious incidents and we are taking action to ensure the safety of our citizens and to protect the environment," stated Secretary Prukop.

Brine wells are an essential part of the oil and gas drilling industry, particularly in the southeastern part of the state. Oil and gas operators use brine water in the drilling process. Brine is saturated salt water which can be more salty than sea water. Brine is created by injecting fresh water into salt formations, allowing the water to absorb the salt and then pumping it out of the well. This method creates an underground cavity.

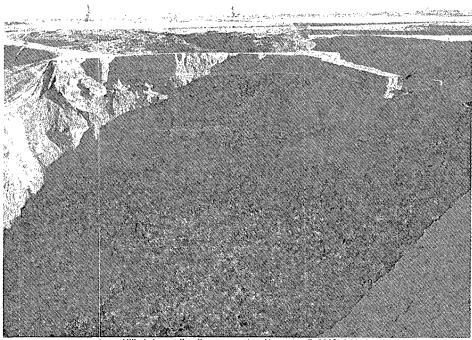
"The moratorium will provide time to properly evaluate the causes of the recent collapses and to discuss the development of new rules or guidelines to ensure the safety and stability of brine well systems," added Secretary Prukop.

The moratorium will only affect new wells and will not impact existing wells and facilities.

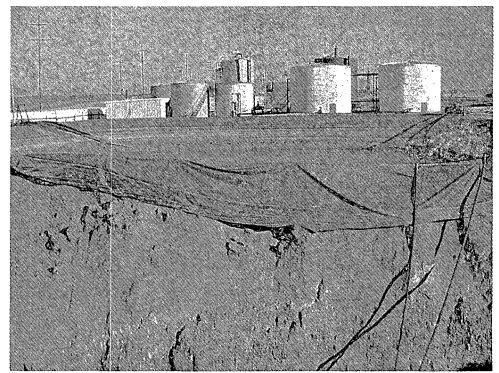
Below are photographs of the two recent collapses:



Loco Hills brine well collapse, morning, November 7, 2008, sinkhole with fresh water pond in foreground. Photo courtesy of Oil Conservation Division

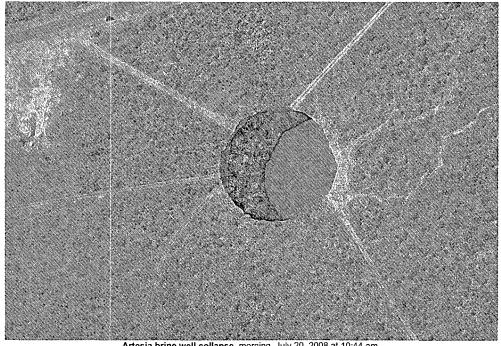


Loco Hills brine well collapse, morning, November 7, 2008 sinkhole.
Photo courtesy of Oil Conservation Division

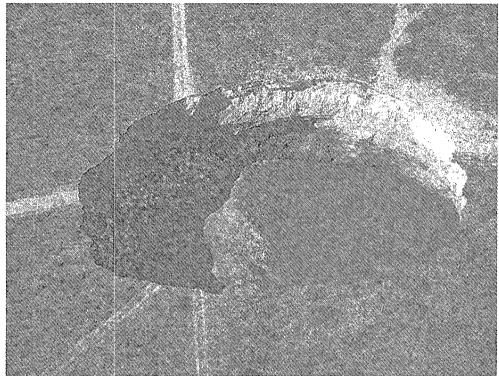


Loco Hills brine well collapse, morning, November 7, 2008 status of fresh water pond.

Photo courtesy of Oil Conservation Division



Artesia brine well collapse, morning, July 20, 2008 at 10:44 am. Photo courtesy of National Cave and Karst Research Institute



Artesia brine well collapse morning, July 22, 2008
Photo courtesy of National Cave and Karst Research Institute

#30#

The Energy, Minerals and Natural Resources Department provides resource protection and renewable energy resource development services to the public and other state agencies.

Oil Conservation Division
1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3440 • Fax (505) 476-3462 • www.emnrd.state.nm.us/OCD



From:

Chavez, Carl J, EMNRD

Sent:

Wednesday, September 10, 2008 2:29 PM

To:

Pham.Lisa@epamail.epa.gov; 'Leissner.Ray@epamail.epa.gov'

Cc:

Price, Wayne, EMNRD

Subject:

FW: Jims Waters Service (BW-5) sinkhole update 9-9-09

Attachments: executed memorandum update on sinkhole_080909.pdf; JWSMONITOING2 SECONDARY CONTROL.pdf; JWS monitoring survey Summary and tracking chart ONLY.xls; sinkhole overflight

8-26-08 annotated.pdf

Lisa and Ray:

Hi. Just wanted share some updated information on the sinkhole with you. I heard from Lisa today that Ray you may be coming down to view the sinkhole soon. The OCD would like to meet with you in the OCD Artesia Office and to drive with you to the sinkhole location.

District 2 - OCD ARTESIA Office 1301 W. Grand Avenue Artesia, NM 88210

OFFICE: (575) 748-1283 FAX: (575) 748-9720

Business Hours:

7:00 AM-12:00 PM and 1:00 - 4:00 PM

Monday through Friday

The Jims Water Service file is available via the Internet at:

http://ocdimage.emnrd.state.nm.us/imaging/AEOrderFileView.aspx?appNo=pENV0000BW0006

Could you please provide the date and time for a meeting and any agenda items for our meeting and site visit? Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

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

Office: (505) 476-3491 Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications")

From: Sherry Glass [mailto:SGlass@kpk.com] Sent: Wednesday, September 10, 2008 9:16 AM

To: Carr, Jim A.; Bashir Memon; Jones, Brad A., EMNRD; Brad Berge; Chavez, Carl J, EMNRD; Sanchez, Daniel J., EMNRD; Hansen, Edward J., EMNRD; Macquesten, Gail, EMNRD; VonGonten, Glenn, EMNRD; Gordon Allott; J. Arnwine; Griswold, Jim, EMNRD; kgoil@msn.com; Kevin Kauffman; Lowe, Leonard, EMNRD; Lois George; Fesmire, Mark, EMNRD; Michael R. Burston; Ocean Munds-Dry; Paul Phillips; Gum, Tim, EMNRD; Price, Wayne, EMNRD

Subject: sinkhole update 9-9-09

Please see attached. If you have any questions, please let me know. Thank you.

Memorandum

To: Wayne Price, New Mexico OCD

CC: JWS file

From: Kent Gilbert

Date: September 9, 2009

Re: Update on sinkhole

The sinkhole is fully fenced off with barbed wire, with a locked gate and posted with warning signs stating the penalty for trespassing. The state land office is evaluating the fenced area and adjacent properties to develop a final plan for the site.

JWS personnel continue to be vigilant with daily observations and monitoring the sinkhole and adjacent areas.

The sinkhole apparently has slowed in its growth. Additional fissures are developing and being observed by personnel and surveyors.

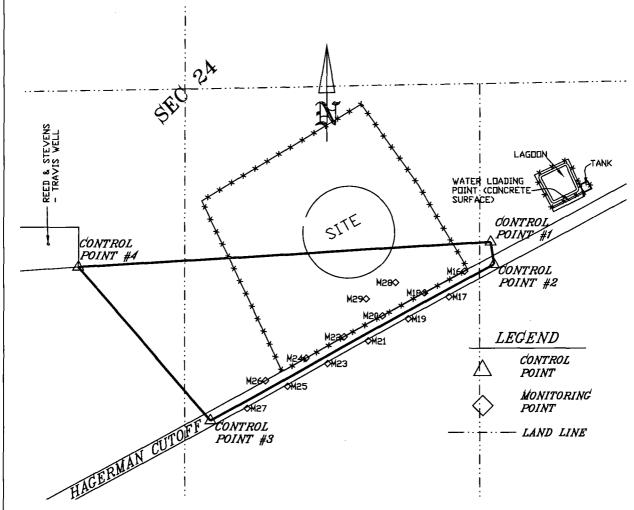
The surveying firm has established a benchmark survey array around the sinkhole and the nearby roadway (217) to monitor and evaluate surface movement and trends. This array is monitored on a daily basis.

We will continue to evaluate the surveys and track any developing trends within the array.

A current trending chart, which has been developed using the data from these surveys, is attached along with the relevant survey array plat.

Kent L. G. Obert

INSIDE CONTROL FOR: SINKHOLE DEVELOPMENT 7/16/2008



NEW MEXICO EAST STATE PLANE COORDINATES FOR:

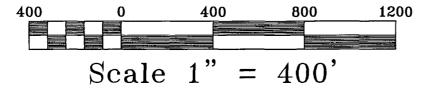
CP #1 N 630061.776 CP #2

CP #3

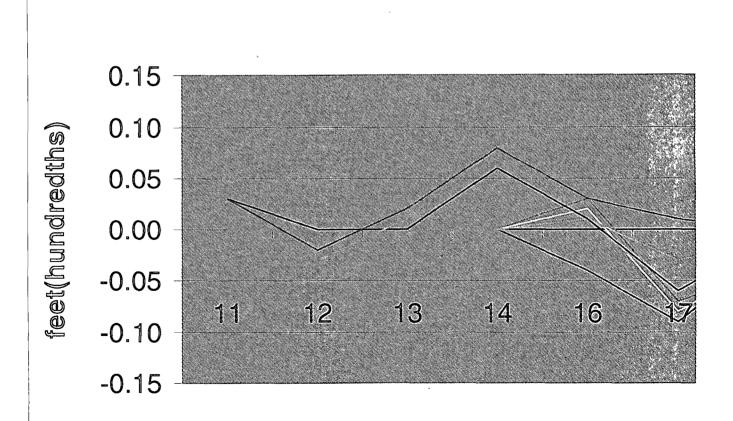
CP #4

N 630061.776 E 605152.901 EL 3515.58 N 629962.872 E 605167.220 EL 3518.78 N 629294.571 E 603929.430 EL 3495.06 N 629953.220 E 603355.059 EL 3500.89

- *CONTROL POINTS ARE #4 REBARS WITH YELLOW CAPS STAMPED 8510.
- *MONITORING POINTS ARE #4 REBARS WITH YELLOW CAPS STAMPED 8510.
- **HAGERMAN CUTOFF IS SHOWN AT THE 60' WIDE R.O.W. WIDTH NOT THE 25' WIDE ASPHALT WIDTH.
- ***TRAVIS' WELL, LACOON, TANK & CONCRETE LOADING POINT AT THE LACOON ARE SHOWN FOR RELATIONAL PURPOSES.

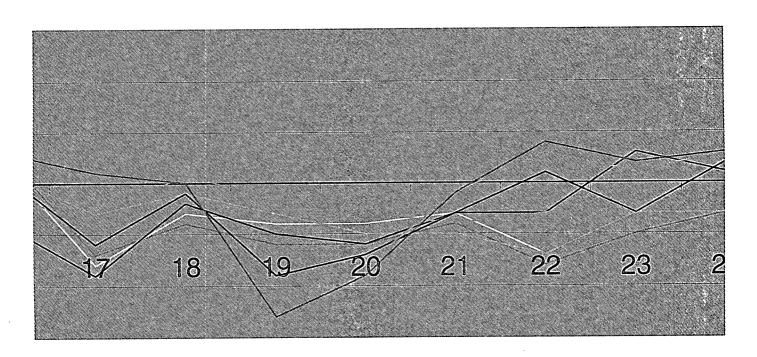


8/19/2008



	USE A	All elevationa	al difference	s compar
	14-Aug	18-Aug	19-Aug	20-Aug
11 12	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
13 14	0.00 0.00 0.00	0.00	0.00 0.00	0.00 0.00
16	0.00 0.00 0.00	0.03 -0.07	-0.01 -0.01	-0.01 0.05
17 18	0.00 0.00 0.00	-0.04 -0.06	0.01 0.02	0.02 0.01
19 20 21	0.00 0.00 0.00	-0.06 -0.04	0.02 0.02 0.01	-0.01 -0.02
21 22 23	0.00 0.00 0.00	-0.04 -0.08 -0.05	0.01 0.02	0.00 0.00
24	0.00	-0.03	0.02 0.00 0.00	0.00 0.00 -0.02
25 26	0.00 0.00	-0.01 -0.02	-0.01	0.00 -0.02
27 28	0.00 0.00	0.03 0.00	0.02 0.00	0.00 0.00
29	0.00	-0.01	0.00	

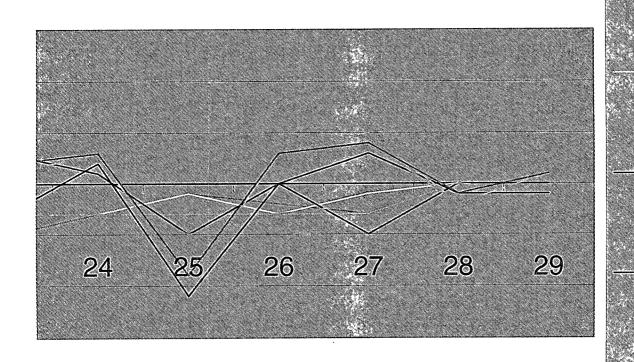
Tracking surveys-JWS



Monitored points

ed to 8/14 starting point

0.00 0.00 0.03 0.00 0.00 0.00 3515 0.00 0.00 0.00 -0.03 0.00 0.01 3500 0.00 0.00 0.00 0.01 0.00 0.01 3495 0.00 0.00 0.06 0.03 -0.01 0.00 3518	
0.00 0.00 0.00 -0.03 0.00 0.01 3500 0.00 0.00 0.00 0.01 0.00 0.01 3495 0.00 0.00 0.06 0.03 -0.01 0.00 3518	
0.00 0.00 0.00 0.01 0.00 0.01 3495 0.00 0.00 0.06 0.03 -0.01 0.00 3518	.66
0.00 0.00 0.06 0.03 -0.01 0.00 3518	.94
	.14
0.00 0.	.88
-0.05 0.03 0.02 0.02 0.00 0.00 3514	.27
-0.06 0.05 -0.02 0.07 0.00 0.00 3510	.24
-0.01 0.03 -0.02 0.01 0.00 0.00 350	8.9
-0.02 0.03 -0.07 -0.04 0.00 0.00 3506	.62
-0.01 0.03 -0.04 -0.01 -0.01 0.00 3505	.68
0.02 -0.01 0.01 0.02 0.00 0.00 3504	.33
0.04 0.00 0.04 0.03 -0.01 0.01 3502	.56
0.06 -0.05 -0.01 0.05 -0.01 0.01 3501	.86
0.04 -0.02 0.03 0.01 0.00 0.00 3499	.82
-0.02 0.00 -0.06 0.02 -0.01 0.01 3498	.73
0.03 -0.03 0.03 0.00 0.00 3497	'.41
-0.02 0.03 0.05 0.01 0.01 -0.01 349	16.3
0.00 0.00 -0.01 -0.01 0.00 0.01 3510	.48
0.00 0.00 0.00 0.02 0.00 0.00 3507	.16



14-Aug 19-Aug 22-Aug

27-Aug

Aug — 18-Aug
Aug — 24-Aug
Aug — 26-Aug
Aug — 28-Aug

appears fissures trending NE-SW

From:

Price, Wayne, EMNRD

Sent:

Friday, August 01, 2008 1:14 PM

To:

Pham.Lisa@epamail.epa.gov

Cc:

Chavez, Carl J, EMNRD; Sanchez, Daniel J., EMNRD

Subject:

FW: Brine Well Investigations

Attachments: Brine well info request letter_Aug01_08.doc; BW Form 2008_08_01_08 final.doc

Please pass along.

From: Price, Wayne, EMNRD

Sent: Friday, August 01, 2008 12:51 PM

To: Prukop, Joanna, EMNRD; Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD

Cc: Gum, Tim, EMNRD; Perrin, Charlie, EMNRD; Martin, Ed, EMNRD; Williams, Chris, EMNRD

Subject: Brine Well Investigations

Please find attached a letter and information form to be filled out by all brine well operators. This information will allow OCD to better determine if additional monitoring or modes of operation requires changing, or if some wells are candidates for closure. Will go out today.

Wayne Price-Environmental Bureau Chief Oil Conservation Division 1220 S. Saint Francis Santa Fe, NM 87505 E-mail wayne.price@state.nm.us

Tele:

505-476-3490

Fax:

505-476-3462

New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson

Governor

Joanna Prukop Cabinet Secretary Reese Fullerton Deputy Cabinet Secretary Mark Fesmire
Division Director
Oil Conservation Division



Certified Receipt/Return Requested:

August 01, 2008

Attention Brine Well Operator(s):

One of the permitted brine wells has experienced a total collapse and created an enormous sinkhole. The well was located approximately 17 miles SE of Artesia, NM. on State Trust Land. The operator was Jim's Water Service and the brine well permit is BW-005. OCD has enclosed a press release with photos of the event.

The magnitude of this event warrants an immediate investigation of all brine wells in the state. Therefore, please find enclosed a "BRINE WELL INFORMATION REQUEST" form to be filled out and returned to this office no later than September 05, 2008. Failure to properly fill out and return the form in a timely manner may result in OCD requesting you shut down your operations until further notice. If you have any questions please do not hesitate to call me at 505-476-3490 or E-mail wayne.price@state.nm.us.

Sincerely,

Wayne Price Environmental Bureau Chief Oil Conservation Division

Attachments: (2)

Cc: EMNRD Cabinet Secretary-Joanna Prukop

OCD Director-Mark Fesmire

NMSLO- Brian Henington SF, Jim Carr-Carlsbad

BLM-Carlsbad Office- Dave Herrell

Eddy Co. Emergency Management-Joel Arnwine

NM State Police -Roswell Sgt. Les Clements

National Cave and Karst Research Institute- Dr. George Veni

NMOSE-John Stewart

Solution Mining Research Institute-John Voigt





Bill Richardson

Governor

Joanna Prukop Cabinet Secretary Reese Fullerton Deputy Cabinet Secretary Mark Fesmire
Division Director
Oil Conservation Division



OIL CONSERVATION DIVISION BRINE WELL INFORMATION REQUEST

GENERAL INFOR					
Operator Name		_ Well Name	(s)		
Operator Name API Number		_ Brine Well	Permit #		
Date Permit Expires?)				
Location: Section _	Ts		_ Rg		_
Location: Section FNL GPS of well(s): Lat	_FSL	FEL_		FWL	
GPS of well(s): Lat	t: L	ong:			
	1 1 1 11		11.1	0 1/ (2)	
Have you reviewed a					. 1
Are you presently de	•	• •			t know 🗆
Do you operate below					_
Do all tanks, including					
Do you think you have		owledge and g	generai un	derstanding of wha	at causes a
brine well to collapse		1. 1	• 1	1 11 ' 0	37 - NT
Do you think OCD sl	hould provide guide	elines on subs	idence and	d collapse issues?	Yes⊔ No⊔
SITING INFORMA	TION. Plage pre	wide the follo	wing info	ermation and denie	et on 7.5
minute (1": 2000")	_	•	~ .	-	a on 7.5
, , , ,	~ 1				
Is the brine well loca	ted within a munici	pality or city	limits?	Yes□ No□	
Distance and direction	on to nearest nerman	nent structure	house so	thool etc if less the	an one mile:
Distance and uncerto	ii to iicarest permai	icht structure,	, nouse, se	moor, etc. ij tess iid	an one mue.
Distance and direction	on to nearest water v	well <i>if less tha</i>	ın one mil	e:	
Distance to nearest w	vatercourse(s) floor	dnlain nlava l	ake(s) or	man-made canal(s)) or pond(s)
if less than one mile:		apiaiii, piaya i	akc(s), 01	man-made canai(s) or pond(s)
ij iess man one mile.					
Distance and direction	on to nearest known	karst features	or mines	if less than one mi	le:
Distance and another	in to hourout known	1101101101101		y tess man one me	



Oil Conservation Division August 1, 2008 Page 2

Distance and direction to nearest producing oil or gas well(s) if less than one mile: Provide API Number:
Distance and direction to nearest tank battery(ies) if less than one mile:
Distance and direction to nearest pipeline(s), including fresh water pipelines if less than one mile:
Distance and direction to nearest paved or maintained road or railroad if less than one mile:
Depth to ground water found above the Salado (salt section), regardless of yield:
Name of aquifer(s):
WELL CONSTRUCTION: Please provide the following information and attach a
diagram depicting the brine well. Check box if attached:
Copy of a current well diagram: Attached \Box
Copy of formation record with tops: Attached \Box
Copy of geophysical well logs if available: Attached \Box If not, well logs within one mile \Box
Depth of the top of the salt below ground surface (feet):
Depth to the bottom of the salt below ground surface (feet):
Depth(s) to and thickness(es) of any anhydrite section(s) (located above the salt):
Depth of casing(s) shoe below ground surface (feet):
Is the casing shoe set in the anhydrite or other layer above the salt? Yes \square No \square
Is the casing shoe set into the salt? Yes□ No□ If yes, how far into the salt?
Depth of tubing(s):
Do you suspect that your cavern has partially caved in? Yes□ No□ Don't know□
OPERATIONS: Please provide the following information.
Start date of brine well operation:
Total volume of fresh water injected into the brine well to date (bbls) and how determined:

Oil Conservation Division August 1, 2008 Page 3

Total volume of brine water produced (bbls) to date and how determined:
Have you ever lost casing or tubing? If yes, please provide details. Document attached □
Do you maintain a surface pressure on your well during idle times? Yes□ No□
Have you noticed large amounts of air built up during cavity pressurization? Yes□ No□
Have you ever noticed fluids or air/gas bubbling up around the casing during testing or normal operations? Yes□ No□
MONITORING: Please provide the following information.
Are you currently monitoring ground water contamination from your brine well or system? Yes □ No□
Have you ever run a sonar \log ? Yes \square No \square If yes, please provide last date:
Provide cavern configuration (dimensions and volume) and method(s) used to estimate: If sonar report please attach \Box If other, please specify and provide a sketch of cavern: \Box
Do you have a subsidence monitoring program in place? Yes □ No□
Do you have any geophysical monitoring devices, such as a seismic device positioned near your brine well? Yes □ No□
Have you submitted all of your monthly, quarterly, or annual reports to the OCD? Yes □ No□
Have you failed a brine well mechanical integrity test (MIT)? If yes, please attach details and results. Attached \Box
Have you ever had a casing leak? Yes □ No□ Have you ever had a cavern leak? Yes □ No□ Don't know □ Have you ever exceeded the cavern fracture pressure? Yes □ No□ Don't know □ Do you know how to calculate your maximum pressure? Yes □ No□ Don't know □
Have you ever had a cavern leak? Yes □ No□ Don't know □ Have you ever exceeded the cavern fracture pressure? Yes □ No□ Don't know □
Have you ever had a cavern leak? Yes □ No□ Don't know □ Have you ever exceeded the cavern fracture pressure? Yes □ No□ Don't know □ Do you know how to calculate your maximum pressure? Yes □ No□ Don't know □ Have you routinely looked for cracks or fissures in the ground surface around your brine well?

Oil Conservation Division August 1, 2008 Page 4

Have you ever experienced unexpected pressure gain or loss in the cavern? Yes□ No□ If Yes, was there a difference in your normal flow rate? Yes□ No□
Anytime during the past 5 years, have you experienced a noticeable difference between fresh water volume pumped into the well verses brine water produced? Yes □ No□
Are you concerned about pulling the tubing due to the fact it may be difficult to re-enter the hole? Yes□ No□
Are you concerned about running a sonar tool in fear of losing tool because of debris in hole? Yes□ No□
Have you ever conducted a fly over of your well site? No \square Yes \square if yes, please provide photo. \square Photo(s) attached
<i>Calculation:</i> Please divide your estimated total volume of produced brine by $180,000$ and multiply by 50. <i>Example:</i> If you have produced a total of $18,000,000$ bbls of brine in the life time of the well then your calculation would be $18,000,000/180,000 = 100 \times 50 = 5000$.
 Provide the calculated number above here: Now provide the depth (ft) from the surface to your casing shoe:
Is the calculated number found in #1 above greater than #2? Yes□ No□
Comments or recommendations for OCD:
"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."
Company Name-print name above
Company Representative- print name
Company Representative- Signature
Title

From:

Chavez, Carl J, EMNRD

Sent:

Friday, July 25, 2008 4:21 PM

To:

Hansen, Edward J., EMNRD; Price, Wayne, EMNRD

Cc:

Sanchez, Daniel J., EMNRD

Subject:

RE: PR-Secretary Prukop Proposes Stricter Conditions on Brine Wells State-wide

Attachments: image001.jpg; image007.jpg

Ed, Wayne, et. al:

Based on my records and knowledge of current activities at NMOCD BWs, my tally is as follows:

There are a total of 15 active UIC Class III Brine Well Permits (excluding BW-5 JWS & BW-6 I&W)

There are currently 13 active UIC Class III Brine Wells in operation (BW-2; BW-4; BW-8; BW-9; BW-12; BW-13; BW-22; BW-25; BW-27 Wells 1 & 2; BW-28; BW-30; and BW-31)

There are currently 6 brine wells that have actually been PA'd including: BW-5 JWS Collapse w/ Site.Closure; BW-6 Eugenie #2; BW-21 Loco Hills Well #1 recently PA'd; BW-26 Salado Brine Sales; BW-29 Marbob; & William Brininstool.

There are currently 3 pending PAs of BWs including: BW-6 Eugenie #1 w/ Site Closure; BW-18 Key w/ redrill; and BW-19 Key w/ redrill.

There are currently 5 inactive brine wells (BW-5 Collapse w/ Site Closure; BW-6 needs PA Eugenie #1 w/ Site Closure; BW-18 needs PA w/ redrill; BW-19 needs PA w/ redrill; and BW21 needs redrill)

Let me know how we need to straighten RBDMS out. Please contact me if you have questions. Thanks.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3491

Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications")

From: Hansen, Edward J., EMNRD Sent: Wednesday, July 23, 2008 5:56 PM

To: Price, Wayne, EMNRD **Cc:** Chavez, Carl J, EMNRD

Subject: FW: PR-Secretary Prukop Proposes Stricter Conditions on Brine Wells State-wide

Wayne

Jane and I tallied these numbers off of RBDMS (you may want to double check).

From: Hansen, Edward J., EMNRD **Sent:** Wednesday, July 23, 2008 5:54 PM

To: Porter, Jodi, EMNRD

Subject: RE: PR-Secretary Prukop Proposes Stricter Conditions on Brine Wells State-wide

Jodi,

We counted (from our database: RBDMS):

16 Active Brine Wells

11 Plugged and Abandoned Brine Wells

2 Inactive Brine Wells

From: Porter, Jodi, EMNRD

Sent: Wednesday, July 23, 2008 5:00 PM

Subject: PR-Secretary Prukop Proposes Stricter Conditions on Brine Wells State-wide



Bill Richardson

Joanna Prukop Cabinet Secretary Reese Fullerton Deputy Cabinet Secretary Mark Fesmire
Division Director
Oil Conservation Division



July 23, 2008

Contact: Jodi McGinnis Porter,

Public Information Officer 505.476.3226

Energy, Minerals and Natural Resources Cabinet Secretary Joanna Prukop Proposes Stricter Conditions on Brine Wells State-wide

Artesia brine well collapse prompts statewide review

SANTA FE, NM – Secretary Joanna Prukop has directed the Oil Conservation Division (OCD) to conduct a complete evaluation of the rules and regulations concerning brine wells, a method of creating saturated salt water used in oil and gas production. The OCD evaluation will include an internal audit and inspection of all existing brine wells in New Mexico. Secretary Prukop is considering strengthening oversight of brine wells to protect against well failures such as the recent collapse in Artesia that created a huge sinkhole and forced the closure of an Eddy County road.

"There are several brine wells in New Mexico and we must ensure that they are all properly monitored to ensure safety and stability," stated Cabinet Secretary Joanna Prukop. "We have now seen that these wells can collapse and the extensive damage such a collapse can generate."

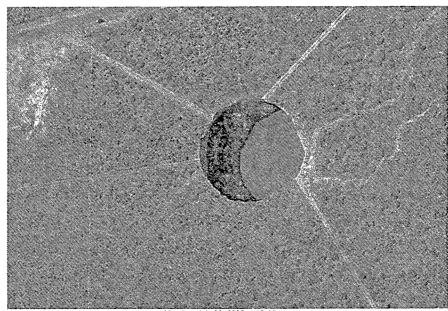
The Oil Conservation Division is continuing to monitor and investigate the collapse of the brine well, located on state trust land 17.3 miles southeast of Artesia, which is still active. The well is owned by Jim's Water Service. County Road 217 remains closed as a safety precaution, and a command center is on site. Division engineers estimate that the well is approximately 300 to 400 feet in diameter, 70 feet to the water level, and the actual depth to the bottom is unknown.

Scientists from the Oil Conservation Division, the Bureau of Land Management, State Land Office, the New Mexico Bureau of Geology and Mineral Resources, and the National Cave & Karst Research Institute are all working together to assess horizontal and vertical movements to project any future subsidence. Work on a protective fence and keep-out signage began yesterday with completion expected on Friday.

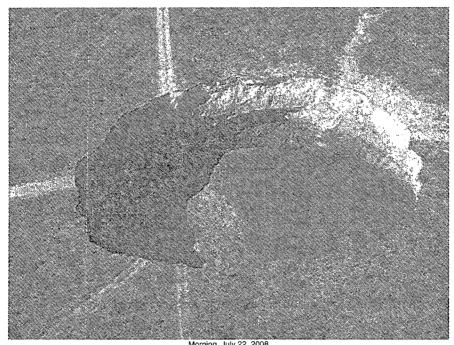
In a related issue, the Oil Conservation Division has also been closely monitoring a brine well operated by I & W, Inc located in Carlsbad, NM. Yesterday, following ongoing inquiries from OCD the operator decided voluntarily to stop operation of the well The division will work with I & W, Inc. to ensure that the well is properly plugged, permanently abandoned, and monitored for the long term.

Images provided on the brine well collapse are courtesy of National Cave and Karst Research Institute:

PR-MMD Page 3 of 4



Morning, July 20, 2008 at 10:44 am. courtesy of National Cave and Karst Research Institute



Morning, July 22, 2008

courtesy of National Cave and Karst Research Institute

#30#

The Energy, Minerals and Natural Resources Department provides resource protection and renewable energy resource development services to the public and other state agencies.

Oil Conservation Division
1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3440 • Fax (505) 476-3462 • www.emnrd.state.nm.us/OCD



Jodí

Jodi McGinnis Porter Public Information Officer Energy, Minerals and Natural Resources Department (EMNRD) 1220 South St. Francis Drive Santa Fe, NM 87505 Phone: (505) 476-3226

Fax: (505) 476-3220 Cell: (505) 690-1689 E-mail: jodi.porter@state.nm.us Website: www.emnrd.state.nm.us

Kent Gilbert [kgoil@msn.com] From:

Sent: Thursday, July 31, 2008 3:19 PM

To: Price, Wayne, EMNRD

Gum, Tim, EMNRD; Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Macquesten, Gail, Cc:

EMNRD; jarnwine@eddyoem.com; Jones, Brad A., EMNRD; Chavez, Carl J, EMNRD; Griswold,

Jim, EMNRD; Hansen, Edward J., EMNRD; Lowe, Leonard, EMNRD; VonGonten, Glenn, EMNRD

Subject: RE: JWS BW-05

Wayne et al: JWS is providing notice to all of the listed agencies and personnel that they will be setting up a benchmark survey along County Road 217 to help with determination of any subsidence that may be occurring along the road. We will have more specifice details available when we have a commencement date, although commencement is anticiapted early next week.

(week of August 4, 2008)

Thanks,

Kent Gilbert kgoil@msn.com 303-478-8393

Subject: JWS BW-05

Date: Thu, 24 Jul 2008 15:01:26 -0600

From: wayne.price@state.nm.us

To: kgoil@msn.com

CC: tim.qum@state.nm.us; mark.fesmire@state.nm.us; daniel.sanchez@state.nm.us;

gail.macquesten@state.nm.us; jarnwine@eddyoem.com; brad.a.jones@state.nm.us; CarlJ.Chavez@state.nm.us;

Jim.Griswold@state.nm.us; edwardj.hansen@state.nm.us; Leonard.Lowe@state.nm.us;

Glenn.VonGonten@state.nm.us

Attention: Kent Gilbert 303-825-4822 cell 303-478-8393

Dear Kent:

Please acknowledge this E-mail in order to open the lines of post incident communication up. OCD has the following requirements until future notice:

Please monitor the roadway daily for any sign of subsidence.

Notify OCD of any activity at the site, before entry.

Provide OCD the company name, mailing address and name of official contact for JWS.

Provide OCD, State Land Office and Eddy Co. with local emergency telephone numbers.

Do not disturb or remove any items, equipment, stakes, pipe, perform dirt work, or alter the site in any manner unless deemed an emergency and approved by OCD.

Wayne Price-Environmental Bureau Chief Oil Conservation Division 1220 S. Saint Francis Santa Fe, NM 87505 E-mail wayne.price@state.nm.us

Tele: 505-476-3490 Fax: 505-476-3462

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From:

VonGonten, Glenn, EMNRD

Sent:

Wednesday, July 30, 2008 3:41 PM

To:

Jones, Brad A., EMNRD; Hansen, Edward J., EMNRD; Chavez, Carl J, EMNRD; Griswold,

Jim, EMNRD; Lowe, Leonard, EMNRD

Subject:

FW: Brine Well Collapse

Attachments: Loco Hills sink-annotated-small.pdf; LHsink-07-28-08-13.jpg; LHsink-07-28-08-10.jpg

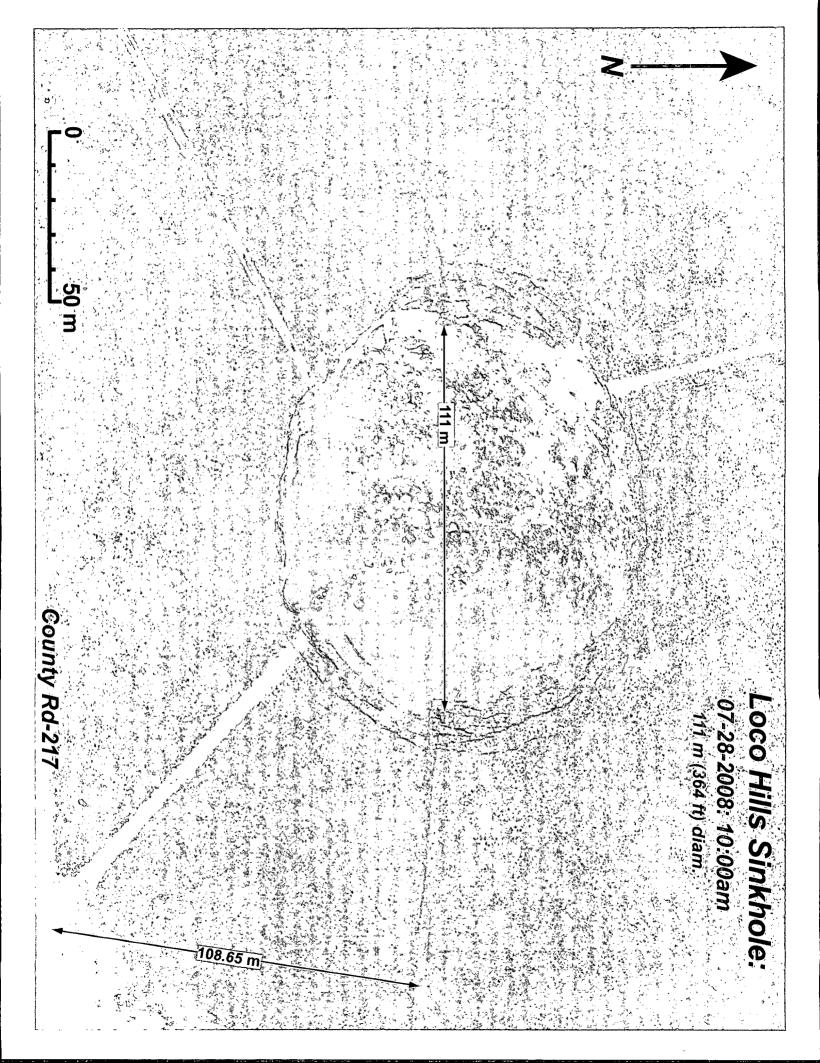
Glenn von Gonten Senior Hydrologist Environmental Bureau Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505 505-476-3488 fax -476-3462 glenn.vongonten@state.nm.us

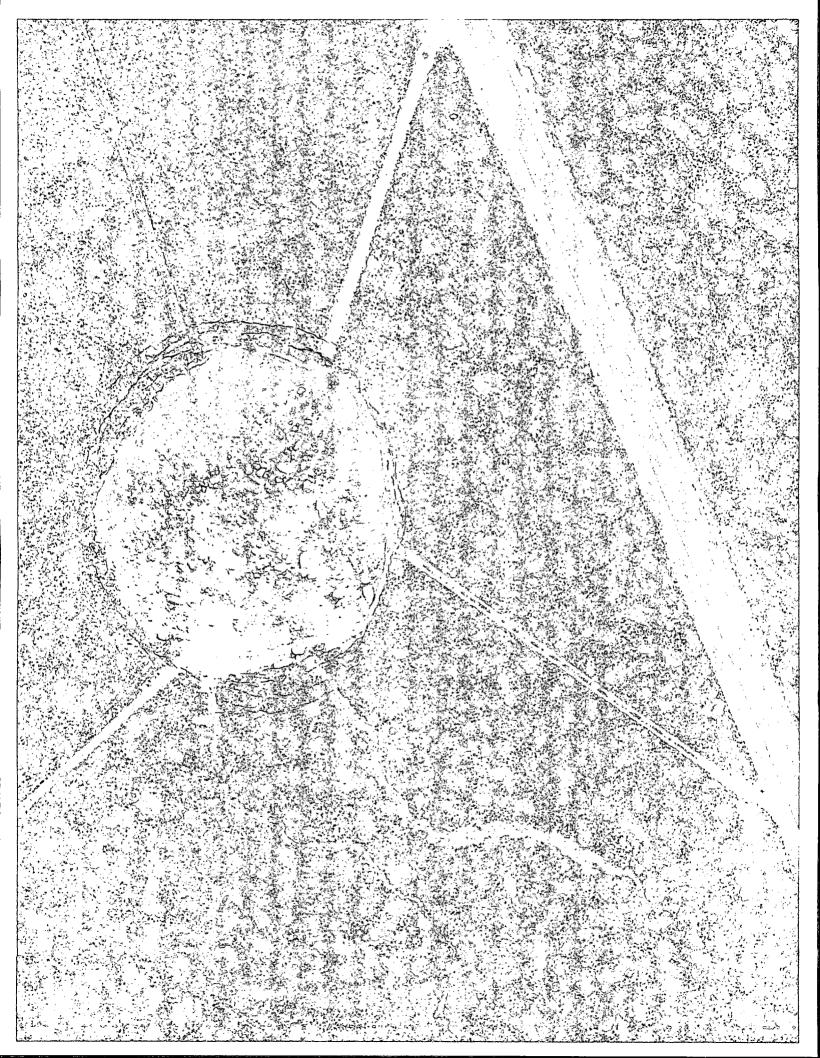
From: Lewis Land [mailto:lland@nckri.org] Sent: Wednesday, July 30, 2008 12:17 PM

To: VonGonten, Glenn, EMNRD; Price, Wayne, EMNRD

Subject: RE: Brine Well Collapse

Hello Glen and Wayne. I just discovered that my annotated photograph of the Loco Hills sink that I have tried repeatedly to send you is a 29 MB file. Attached here is a substantially smaller version of the same graphic, which you should be able to receive, along with a couple of other photos taken on the same day. —Lewis Land







From: Price, Wayne, EMNRD

Sent: Monday, July 28, 2008 1:17 PM

To: Ezeanyim, Richard, EMNRD; Jones, Brad A., EMNRD; Warnell, Terry G, EMNRD

Cc: VonGonten, Glenn, EMNRD; Chavez, Carl J, EMNRD; Jones, Brad A., EMNRD; Lowe, Leonard,

EMNRD; Griswold, Jim, EMNRD; Sanchez, Daniel J., EMNRD; Fesmire, Mark, EMNRD; Hansen,

Edward J., EMNRD

Subject: Anhydrite Properties

Gentlemen:

The OCD Environmental Bureau is in need of the stress properties of Permian Anhydrite. We need an average value for Compressive, tensional and shear strength in psi or other units. Due to the recent Brine well collapse we are putting together a set of guidelines to determine if the cavern has an adequate roof support. For worst case we will use a typical cantilever design using Mohr's circle to calculate max shear stress. If you find other properties such as Bulk Modulus of Elasticity, poison's ratio, etc. We can do the engineering calculations but need the properties to plug in.

We need this ASAP!

Thanks!

Wayne Price-Environmental Bureau Chief Oil Conservation Division 1220 S. Saint Francis Santa Fe, NM 87505

E-mail wayne.price@state.nm.us

Tele: 505-476-3490 Fax: 505-476-3462

From: Lowe, Leonard, EMNRD

Sent: Friday, July 25, 2008 10:42 AM

Price, Wayne, EMNRD; VonGonten, Glenn, EMNRD; Jones, Brad A., EMNRD; Hansen, Edward J., EMNRD; Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD; Sanchez, Daniel J., EMNRD To:

Subject: Photos and video from 07.24.08 of Subsidence

Photos and video of subsidence for July 24, 2008 are located here:

Enjoy

> Governor

From: Chavez, Carl J, EMNRD Friday, July 25, 2008 10:30 AM Sent: 'Pham.Lisa@epamail.epa.gov' To: RE: FW: PR-Secretary Prukop Proposes Stricter Conditions on Brine Wells State-wide Subject: Ok. Thanks. Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3491 Fax: (505) 476-3462 E-mail: CarlJ.Chavez@state.nm.us Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications") ----Original Message-----From: Pham.Lisa@epamail.epa.gov [mailto:Pham.Lisa@epamail.epa.gov] Sent: Friday, July 25, 2008 9:30 AM To: Chavez, Carl J, EMNRD Subject: Re: FW: PR-Secretary Prukop Proposes Stricter Conditions on Brine Wells State-wide Thank you for forwarding. Please keep us updated with this. Thanks. "Chavez, Carl J, EMNRD" < Carl J. Chavez@state.nm.us> wrote on 07/23/2008 06:04:56 PM: > FYI, NMOCD News Release. > Carl J. Chavez, CHMM > New Mexico Energy, Minerals & Natural Resources Dept. > Oil Conservation Division, Environmental Bureau 1220 South St. Francis > Dr., Santa Fe, New Mexico 87505 > Office: (505) 476-3491 > Fax: (505) 476-3462 > E-mail: CarlJ.Chavez@state.nm.us > Website: http://www.emnrd.state.nm.us/ocd/index.htm > (Pollution Prevention Guidance is under "Publications") > From: Porter, Jodi, EMNRD > Sent: Wednesday, July 23, 2008 5:00 PM > Subject: PR-Secretary Prukop Proposes Stricter Conditions on Brine > Wells State-wide > [image removed] > [image removed] > Bill Richardson

```
> Cabinet Secretary
 > Reese Fullerton
 > Deputy Cabinet Secretary
 >
 >
 >
 > Mark Fesmire
 > Division Director
 > Oil Conservation Division
>
 >
 >
> [image removed]
  July 23, 2008
>
> NEWS RELEASE
> Contact: Jodi McGinnis Porter.
                Public Information Officer 505.476.3226
>
>
> Energy, Minerals and Natural Resources Cabinet Secretary Joanna Prukop
> Proposes Stricter Conditions on Brine Wells State-wide
> Artesia brine well collapse prompts statewide review
>
> SANTA FE, NM - Secretary Joanna Prukop has directed the Oil
> Conservation Division (OCD) to conduct a complete evaluation of the
> rules and regulations concerning brine wells, a method of creating
> saturated salt water used in oil and gas production. The OCD
> evaluation will include an internal audit and inspection of all
> existing brine wells in New Mexico. Secretary Prukop is considering
> strengthening oversight of brine wells to protect against well
> failures such as the recent collapse in Artesia that created a huge
> sinkhole and forced the closure of an Eddy County road.
> "There are several brine wells in New Mexico and we must ensure that
> they are all properly monitored to ensure safety and stability,"
> stated Cabinet Secretary Joanna Prukop. "We have now seen that these
> wells can collapse and the extensive damage such a collapse can
generate."
> The Oil Conservation Division is continuing to monitor and investigate
> the collapse of the brine well, located on state trust land 17.3 miles
> southeast of Artesia, which is still active. The well is owned by Jim'
> s Water Service. County Road 217 remains closed as a safety
> precaution, and a command center is on site. Division engineers
> estimate that the well is approximately 300 to 400 feet in diameter,
> 70 feet to the water level, and the actual depth to the bottom is
unknown.
>
> Scientists from the Oil Conservation Division, the Bureau of Land
> Management, State Land Office, the New Mexico Bureau of Geology and
> Mineral Resources, and the National Cave & Karst Research Institute
> are all working together to assess horizontal and vertical movements
> to project any future subsidence. Work on a protective fence and keep-
```

> Joanna Prukop

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> out signage began yesterday with completion expected on Friday.
> In a related issue, the Oil Conservation Division has also been
> closely monitoring a brine well operated by I & W, Inc located in
> Carlsbad, NM. Yesterday, following ongoing inquiries from OCD the
> operator decided voluntarily to stop operation of the well The
> division will work with I & W, Inc. to ensure that the well is
> properly plugged, permanently abandoned, and monitored for the long
term.
> Images provided on the brine well collapse are courtesy of National
> Cave and Karst Research Institute:
> [image removed]
> Morning, July 20, 2008 at 10:44 am.
> courtesy of National Cave and Karst Research Institute
> [image removed]
> Morning, July 22, 2008
> courtesy of National Cave and Karst Research Institute
> #30#
> The Energy, Minerals and Natural Resources Department provides
> resource protection and renewable energy resource development
> services to the public and other state agencies.
>
>
> Oil Conservation Division
> 1220 South St. Francis Drive - Santa Fe, New Mexico 87505 Phone (505)
> 476-3440 • Fax (505) 476-3462 • www.emnrd.state.nm.us/OCD
> [image removed]
>
>
> Jodi
> Jodi McGinnis Porter
> Public Information Officer
> Energy, Minerals and Natural Resources Department (EMNRD) 1220 South
> St. Francis Drive Santa Fe, NM 87505
> Phone: (505) 476-3226
> Fax: (505) 476-3220
> Cell: (505) 690-1689
> E-mail: jodi.porter@state.nm.us
> Website: www.emnrd.state.nm.us
>
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> intended recipient, please contact the sender and destroy all copies
> of this message. -- This email has been scanned by the Sybari -
> Antigen Email System.
> [attachment "PR-OCD.Brine.Wells07.23.08.pdf" deleted by Lisa
Pham/R6/USEPA/US]
```

From:

Pham.Lisa@epamail.epa.gov

Sent:

Friday, July 25, 2008 10:23 AM

To:

Chavez, Carl J, EMNRD

Cc:

Sanchez, Daniel J., EMNRD; Porter, Jodi, EMNRD; Fesmire, Mark, EMNRD;

Vaughan.Michael@epamail.epa.gov; Leissner.Ray@epamail.epa.gov; Price, Wayne, EMNRD

Subject:

RE: BW-5 Jims Water Service Brine Well Collapse Update

Hi Carl,

Thank you for responding quickly to our questions. Looks like NMOCD has been taking prudent measures - very impressive!!!

You might want to contact USGS because they may be able to offer some valuable assistance. They were very active in monitoring movement and assessing the Daisetta sinkhole --- the USGS staff involved were from the San Antonio or Austin Office.

Lisa

"Chavez, Carl J. EMNRD" <Carl J. Chavez@state.nm.us> wrote on 07/23/2008 02:35:36 PM:

> Lisa, et. al:

> Hi. Please refer to the NMOCD responses to the EPA questions below.

> 1. What is the operational activity of the brine well in question?

> The BW was completely consumed in the collapse and all operational > activities have halted, except for emptying the brine pond.

> 2. What is NMOCD's current opinion on what caused the collapse and > how much more collapse do you expect?

> At this point and time no determination has been made for the

> definitive cause. OCD has ordered the operator to perform an internal

> investigation to assist OCD in making that determination. OCD is also

> reviewing all the technical information we have in our files and will

> utilize other agencies and technical resources to assist in this

> determination. OCD had successfully tested this well for MIT and no

> problems were observed.

> Several flags have been placed at concentric stress cracks around the > salt collapse feature to monitor the immediate potential for growth.

> The NMOCD will be monitoring the growth rate over time to determine

> whether the hole will expand to and beyond CR 217. We have a mobile

> command center on site controlling and monitoring all activities. A

> temporary barbed wire fence along the CR-217 easement north of the

> roadway to prevent access via the 2 dirt roadways leading into the

> former BW-005 and a fence is also being installed around the

> circumference of the hole a minimum of 100 feet setback from

> identified outer micro stress cracks. The property is owned by the

> state of New Mexico and we will install warning and no trespass signs.

> 3. What is the public reaction?

> The EMNRD's public information office has informed all parties of

> interest including the public thru radio, newspaper, and TV. The site

> is very remote and not in close proximity to the general public. On

> the other hand, we have another brine well BW-006 located in side of

```
> structure, size and age as the BW-005 well that collapsed. This well
> was shut in yesterday and the Emergency Management Agency was
notified.
> OCD is starting a comprehensive audit of all permitted brine wells to
> assess their potential for collapse. We also plan to start a task
> force committee to investigate this occurrence and make recommendation
> for new preventive guidelines. We welcome EPA to be part of that
> process. I have a feeling this is a wakeup call to all of us for all
> brine wells everywhere. We would like to invite you to visit the
> site. It is very eye-opening.
> Please contact me if you have questions. Thank you.
>
> Carl J. Chavez, CHMM
> New Mexico Energy, Minerals & Natural Resources Dept.
> Oil Conservation Division, Environmental Bureau 1220 South St. Francis
> Dr., Santa Fe, New Mexico 87505
> Office: (505) 476-3491
> Fax: (505) 476-3462
> E-mail: CarlJ.Chavez@state.nm.us
> Website: http://www.emnrd.state.nm.us/ocd/index.htm
> (Pollution Prevention Guidance is under "Publications")
>
> ----Original Message-----
> From: Pham.Lisa@epamail.epa.gov [mailto:Pham.Lisa@epamail.epa.gov]
> Sent: Wednesday, July 23, 2008 8:36 AM
> To: Chavez, Carl J, EMNRD
> Cc: Sanchez, Daniel J., EMNRD; Vaughan.Michael@epamail.epa.gov; Price,
> Wayne, EMNRD; Leissner.Ray@epamail.epa.gov
> Subject: BW-5 Jims Water Service Brine Well Collapse Update
> Hi Carl,
> Thank you so much for this update. We have a few questions about this
> well so please respond if you can. Thanks.
> 1. What is the operational activity of the brine well in question?
> 2. What is NMOCD's current opinion on what caused the collapse and
how
> much more collapse do you expect?
> 3. What is the public reaction?
> Lisa Pham
> U.S. EPA Region 6 (6WQ-SG)
> Dallas, TX
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```

> the City limits of Carlsbad. This well has the same geologic

>

From:

Chavez, Carl J, EMNRD

Sent:

Wednesday, July 23, 2008 3:01 PM 'Leissner.Ray@epamail.epa.gov'

To: Cc:

Price, Wayne, EMNRD; Sanchez, Daniel J., EMNRD

Subject:

RE: BW-5 Jims Water Service Brine Well Collapse Update

Mr. Leissner:

We'll check into this to see if we may do something similar. Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

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

Office: (505) 476-3491 Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications")

----Original Message-----

From: Leissner.Ray@epamail.epa.gov [mailto:Leissner.Ray@epamail.epa.gov]

Sent: Wednesday, July 23, 2008 2:34 PM

To: Chavez, Carl J, EMNRD

Subject: RE: BW-5 Jims Water Service Brine Well Collapse Update

Carl,

Thanks for the updates. We just recently were involved in a collapse near (in the town of) Daisetta, Texas, northeast of Houston. The sinkhole is on the peripheral of the Hull salt dome. You can find a lot of info on the net I'm sure. The RRC hired the Bureau of Economic

Geology, UT. to conduct gravity surveys to see if any other underground anomalies may be a threat to the town. This might be a technique NMOCD may want to evaluate the safety situation for the well near Calsbad.

Ray Leissner, Env. Eng. Ground Water / UIC Section (6WQ-SG) (214) 665 - 7183 USEPA, Region 6

From:

Chavez, Carl J, EMNRD

Sent:

Wednesday, July 23, 2008 5:05 PM

To:

'Pham.Lisa@epamail.epa.gov'; 'Leissner.Ray@epamail.epa.gov'; Vaughan.Michael@epamail.epa.gov

Subject:

FW: PR-Secretary Prukop Proposes Stricter Conditions on Brine Wells State-wide

Attachments: PR-OCD.Brine.Wells07.23.08.pdf; image001.jpg; image002.jpg; image007.jpg; image008.jpg

FYI, NMOCD News Release.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

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E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications")

From: Porter, Jodi, EMNRD

Sent: Wednesday, July 23, 2008 5:00 PM

Subject: PR-Secretary Prukop Proposes Stricter Conditions on Brine Wells State-wide



Bill Richardson

Governo

Joanna Prukop Cabinet Secretary Reese Fullerton Deputy Cabinet Secretary Mark Fesmire Division Director Oil Conservation Division



July 23, 2008

Contact: Jodi McGinnis Porter,

Public Information Officer 505.476.3226

Energy, Minerals and Natural Resources Cabinet Secretary Joanna Prukop Proposes Stricter Conditions on Brine Wells State-wide

Artesia brine well collapse prompts statewide review

SANTA FE, NM – Secretary Joanna Prukop has directed the Oil Conservation Division (OCD) to conduct a complete evaluation of the rules and regulations concerning brine wells, a method of creating saturated salt water used in oil and gas production. The OCD evaluation will include an internal audit and inspection of all existing brine wells in New Mexico. Secretary Prukop is considering strengthening oversight of brine wells to protect against well failures such as the recent collapse in Artesia that created a huge sinkhole and forced the closure of an Eddy County road.

"There are several brine wells in New Mexico and we must ensure that they are all properly monitored to ensure safety and stability," stated Cabinet Secretary Joanna Prukop. "We have now seen that these wells can collapse

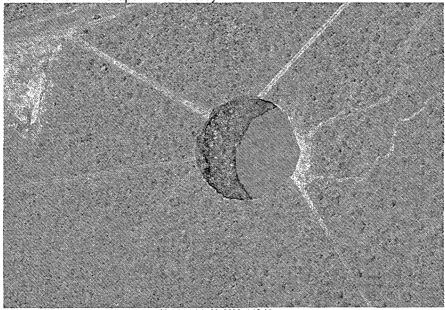
and the extensive damage such a collapse can generate."

The Oil Conservation Division is continuing to monitor and investigate the collapse of the brine well, located on state trust land 17.3 miles southeast of Artesia, which is still active. The well is owned by Jim's Water Service. County Road 217 remains closed as a safety precaution, and a command center is on site. Division engineers estimate that the well is approximately 300 to 400 feet in diameter, 70 feet to the water level, and the actual depth to the bottom is unknown.

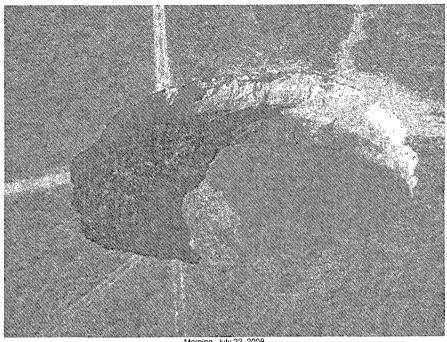
Scientists from the Oil Conservation Division, the Bureau of Land Management, State Land Office, the New Mexico Bureau of Geology and Mineral Resources, and the National Cave & Karst Research Institute are all working together to assess horizontal and vertical movements to project any future subsidence. Work on a protective fence and keep-out signage began yesterday with completion expected on Friday.

In a related issue, the Oil Conservation Division has also been closely monitoring a brine well operated by I & W, Inc located in Carlsbad, NM. Yesterday, following ongoing inquiries from OCD the operator decided voluntarily to stop operation of the well The division will work with I & W, Inc. to ensure that the well is properly plugged, permanently abandoned, and monitored for the long term.

Images provided on the brine well collapse are courtesy of National Cave and Karst Research Institute:



Morning, July 20, 2008 at 10:44 am. courtesy of National Cave and Karst Research Institute



Morning, July 22, 2008 courtesy of National Cave and Karst Research Institute

#30#

The Energy, Minerals and Natural Resources Department provides resource protection and renewable energy resource development services to the public and other state agencies.

Oil Conservation Division 1220 South St. Francis Drive • Santa Fe, New Mexico 87505 Phone (505) 476-3440 • Fax (505) 476-3462 • www.emnrd.state.nm.us/OCD



Jodí

Jodi McGinnis Porter Public Information Officer Energy, Minerals and Natural Resources Department (EMNRD) 1220 South St. Francis Drive Santa Fe, NM 87505 Phone: (505) 476-3226 Fax: (505) 476-3220 Cell: (505) 690-1689

E-mail: jodi.porter@state.nm.us Website: www.emnrd.state.nm.us

Bill Richardson

Governor

Joanna Prukop Cabinet Secretary Reese Fullerton Deputy Cabinet Secretary Mark Fesmire
Division Director
Oil Conservation Division



July 23, 2008

Contact: Jodi McGinnis Porter,

Public Information Officer 505.476.3226

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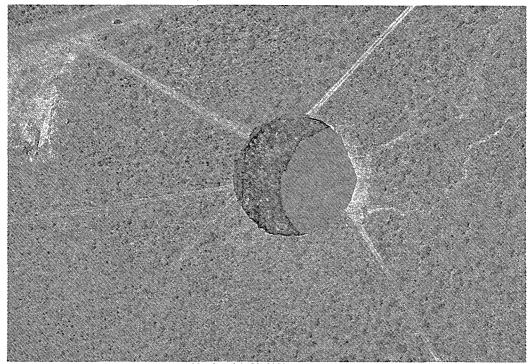
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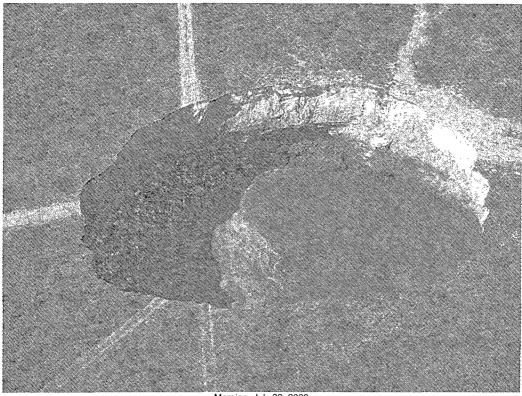
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Oil Conservation Division
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Phone (505) 476-3440 • Fax (505) 476-3462 • www.emnrd.state.nm.us/OCD



From:

Chavez, Carl J. EMNRD

Sent:

Wednesday, July 23, 2008 1:36 PM

To:

'Pham.Lisa@epamail.epa.gov'

Cc:

Sanchez, Daniel J., EMNRD; Vaughan.Michael@epamail.epa.gov; Price, Wayne, EMNRD;

Leissner.Ray@epamail.epa.gov; Fesmire, Mark, EMNRD; Porter, Jodi, EMNRD

Subject:

RE: BW-5 Jims Water Service Brine Well Collapse Update

Lisa, et. al:

Hi. Please refer to the NMOCD responses to the EPA questions below.

1. What is the operational activity of the brine well in question?

The BW was completely consumed in the collapse and all operational activities have halted, except for emptying the brine pond.

2. What is NMOCD's current opinion on what caused the collapse and how much more collapse do you expect?

At this point and time no determination has been made for the definitive cause. OCD has ordered the operator to perform an internal investigation to assist OCD in making that determination. OCD is also reviewing all the technical information we have in our files and will utilize other agencies and technical resources to assist in this determination. OCD had successfully tested this well for MIT and no problems were observed.

Several flags have been placed at concentric stress cracks around the salt collapse feature to monitor the immediate potential for growth. The NMOCD will be monitoring the growth rate over time to determine whether the hole will expand to and beyond CR 217. We have a mobile command center on site controlling and monitoring all activities. A temporary barbed wire fence along the CR-217 easement north of the roadway to prevent access via the 2 dirt roadways leading into the former BW-005 and a fence is also being installed around the circumference of the hole a minimum of 100 feet setback from identified outer micro stress cracks. The property is owned by the state of New Mexico and we will install warning and no trespass signs.

3. What is the public reaction?

The EMNRD's public information office has informed all parties of interest including the public thru radio, newspaper, and TV. The site is very remote and not in close proximity to the general public. On the other hand, we have another brine well BW-006 located in side of the City limits of Carlsbad. This well has the same geologic structure, size and age as the BW-005 well that collapsed. This well was shut in yesterday and the Emergency Management Agency was notified.

OCD is starting a comprehensive audit of all permitted brine wells to assess their potential for collapse. We also plan to start a task force committee to investigate this occurrence and make recommendation for new preventive guidelines. We welcome EPA to be part of that process. I have a feeling this is a wakeup call to all of us for all brine wells everywhere. We would like to invite you to visit the site. It is very eye-opening.

Please contact me if you have guestions. Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

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

Office: (505) 476-3491 Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

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----Original Message-----

From: Pham.Lisa@epamail.epa.gov [mailto:Pham.Lisa@epamail.epa.gov]

Sent: Wednesday, July 23, 2008 8:36 AM

Cc: Sanchez, Daniel J., EMNRD; Vaughan.Michael@epamail.epa.gov; Price, Wayne, EMNRD;

Leissner.Ray@epamail.epa.gov

Subject: BW-5 Jims Water Service Brine Well Collapse Update

Hi Carl,

Thank you so much for this update. We have a few questions about this well so please respond if you can. Thanks.

1. What is the operational activity of the brine well in question?

- 2. What is NMOCD's current opinion on what caused the collapse and how much more collapse do you expect?
- 3. What is the public reaction?

Lisa Pham U.S. EPA Region 6 (6WQ-SG) Dallas, TX

From: Price, Wayne, EMNRD

Sent: Wednesday, July 23, 2008 12:25 PM

To: Chavez, Carl J, EMNRD

Subject: FW: BW-5 Jims Water Service Brine Well Collapse Update

Please send this to Lisa, all EPA UIC staff. Make sure you CC Daniel, Mark, me, Jodi.

From: Chavez, Carl J, EMNRD

Sent: Wednesday, July 23, 2008 11:52 AM

To: Price, Wayne, EMNRD

Subject: RE: BW-5 Jims Water Service Brine Well Collapse Update

Lisa, et. al:

Please refer to the NMOCD responses to your questions below.

1. What is the operational activity of the brine well in question?

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Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 Office: (505) 476-3491

Fax: (505) 476-349

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications")

----Original Message-----

From: Pham.Lisa@epamail.epa.gov [mailto:Pham.Lisa@epamail.epa.gov]

Sent: Wednesday, July 23, 2008 8:36 AM

To: Chavez, Carl J, EMNRD

Cc: Sanchez, Daniel J., EMNRD; Vaughan.Michael@epamail.epa.gov; Price, Wayne, EMNRD;

Leissner.Ray@epamail.epa.gov

Subject: BW-5 Jims Water Service Brine Well Collapse Update

Hi Carl,

Thank you so much for this update. We have a few questions about this well so please respond if you can. Thanks.

- 1. What is the operational activity of the brine well in question?
- 2. What is NMOCD's current opinion on what caused the collapse and how much more collapse do you expect?
- 3. What is the public reaction?

Lisa Pham U.S. EPA Region 6 (6WQ-SG) Dallas, TX

From:

VonGonten, Glenn, EMNRD

Sent:

Wednesday, July 23, 2008 9:20 AM

To:

Price, Wayne, EMNRD; Griswold, Jim, EMNRD; Lowe, Leonard, EMNRD

Cc:

Hansen, Edward J., EMNRD; Chavez, Carl J, EMNRD; Jones, Brad A., EMNRD

Subject:

FW: loco hills sink

Attachments: LHsink-07-22-08-5.jpg

Glenn von Gonten Senior Hydrologist Environmental Bureau Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505 505-476-3488 fax -476-3462 glenn.vongonten@state.nm.us

From: Lewis Land [mailto:lland@nckri.org] **Sent:** Tuesday, July 22, 2008 4:20 PM **To:** VonGonten, Glenn, EMNRD

Cc: 'George Veni'
Subject: loco hills sink

Hello Glenn. Attached is one of the photos I took this morning. It's a bit overexposed, but does show the convergence of those two 2-track roads coming in from the east. The apex of the angle they're making is getting progressively chewed off, indicating that the more recent growth of the sinkhole is on the east side, as you mentioned this morning.

George Veni, the director of the Cave & Karst Research Institute, has said he'd be interested in hosting a meeting of all the parties involved in investigating the Loco Hills sink. Our office is in the same building as the Permian Basin Regional Training Center, and one of their representatives might be interested in attending as well. Is that something that would interest your people?

Lewis Land New Mexico Bureau of Geology and Mineral Resources And the National Cave & Karst Research Institute

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From: VonGonten, Glenn, EMNRD

Sent: Tuesday, July 22, 2008 9:23 AM

To: Chavez, Carl J, EMNRD; EMNRD ITO Help Desk, EMNRD

Subject: RE: BW005

Brenda,

I was not able to set up the STEP site. Will try again using Ed's account. My password has an "@" in it that may a conflict

Glenn von Gonten Senior Hydrologist Environmental Bureau Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505 505-476-3488 fax -476-3462 glenn.vongonten@state.nm.us

From: Chavez, Carl J, EMNRD

Sent: Tuesday, July 22, 2008 9:22 AM **To:** EMNRD ITO Help Desk, EMNRD **Cc:** VonGonten, Glenn, EMNRD

Subject: RE: BW005

Brenda:

I presume that this has already been taken care of then. I have copied Glenn von Gonten out in the field and if he still needs help, he can reply. Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

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

Office: (505) 476-3491

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E-mail: CarlJ.Chavez@state.nm.us

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(Pollution Prevention Guidance is under "Publications")

From: Weimer, Brenda, EMNRD On Behalf Of EMNRD ITO Help Desk, EMNRD

Sent: Tuesday, July 22, 2008 9:02 AM

To: Chavez, Carl J, EMNRD **Subject:** RE: BW005

Carl,

Is this new today? I thought it was taken care of yesterday.

Brenda

Brenda Weimer Executive Assistant Office of the Secretary Energy Minerals & Natural Resources 1220 S. St. Francis Dr. Santa Fe NM 87505

(ph) 505-476-3227 (fax) 505-476-3220

brenda.weimer@state.nm.us

From: Chavez, Carl J, EMNRD

Sent: Tuesday, July 22, 2008 8:04 AM **To:** EMNRD ITO Help Desk, EMNRD **Cc:** VonGonten, Glenn, EMNRD

Subject: FW: BW005

IT:

Could you please contact Glenn von Gonten of EMNRD in the Eddy County Mobile Command Center ASAP at (505) 660-1067, and if you can't get a hold of him at that number, call (575) 200-6112.

"I am very uncertain as to how to figure out the vertical extent. Please have IT call me to explain how I can put photos on OCD's ftp site."- Glenn VonGonten 7/21/08 6:24 a.m.

Thanks in advance.

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Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

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Website: http://www.emnrd.state.nm.us/ocd/index.htm

(Pollution Prevention Guidance is under "Publications")

From: VonGonten, Glenn, EMNRD **Sent:** Monday, July 21, 2008 6:24 AM

To: Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD; Chavez, Carl J, EMNRD

Cc: VonGonten, Glenn, EMNRD; Hansen, Edward J., EMNRD

Subject: BW005

All,

JWS and SLO should be on site this morning to discuss the fence issues at 08:30 hrs. I figured out the scanner. You can see that the collapse is getting bigger. I am very uncertain as to how to figure out the vertical extent. Please have IT call me to explain how I can put photos on OCD's ftp site.

Things are quiet, only one tourist.

Glenn von Gonten Senior Hydrologist Environmental Bureau Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505 505-476-3488 fax -476-3462 glenn.vongonten@state.nm.us

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 $-(c_{F_3}G^*)$

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(ph) 505-476-3227 (fax) 505-476-3220

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From:

Chavez, Carl J, EMNRD

Sent:

Tuesday, July 22, 2008 8:26 AM

To:

Price, Wayne, EMNRD

Subject:

FW: BW005

Attachments: BW005 Status @ 2008_0721.jpg; BW005 Status @ 2008_0721.pdf

FYI.

Carl J. Chavez, CHMM

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3 1000

Chavez, Carl J, EMNRD

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Sent: Tuesday, July 22, 2008 8:26 AM

To: Price, Wayne, EMNRD

Subject: FW: BW005

FYI.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

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Website: http://www.emnrd.state.nm.us/ocd/index.htm

(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD

Sent: Tuesday, July 22, 2008 7:59 AM

To: VonGonten, Glenn, EMNRD

Cc: Hansen, Edward J., EMNRD; Griswold, Jim, EMNRD

Subject: RE: BW005

Glenn:

Jim is plotting the rest of the points today. Will send upon completion sometime today. Thnx.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

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

Office: (505) 476-3491

Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm

(Pollution Prevention Guidance is under "Publications")

From: VonGonten, Glenn, EMNRD **Sent:** Monday, July 21, 2008 6:24 AM

To: Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD; Chavez, Carl J, EMNRD

Cc: VonGonten, Glenn, EMNRD; Hansen, Edward J., EMNRD

Subject: BW005

All,

JWS and SLO should be on site this morning to discuss the fence issues at 08:30 hrs. I figured out the scanner. You can see that the collapse is getting bigger. I am very uncertain as to how to figure out the vertical extent. Please have IT call me to explain how I can put photos on OCD's ftp site.

Things are quiet, only one tourist.

From:

Chavez, Carl J, EMNRD

Sent:

Tuesday, July 22, 2008 8:04 AM

To:

EMNRD ITO Help Desk, EMNRD

Cc:

VonGonten, Glenn, EMNRD

Subject:

FW: BW005

Attachments: BW005 Status @ 2008_0721.jpg; BW005 Status @ 2008_0721.pdf

IT:

Could you please contact Glenn von Gonten of EMNRD in the Eddy County Mobile Command Center ASAP at (505) 660-1067, and if you can't get a hold of him at that number, call (575) 200-6112.

"I am very uncertain as to how to figure out the vertical extent. Please have IT call me to explain how I can put photos on OCD's ftp site."- Glenn VonGonten 7/21/08 6:24 a.m.

Thanks in advance.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

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

Office: (505) 476-3491

Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm

(Pollution Prevention Guidance is under "Publications")

From: VonGonten, Glenn, EMNRD Sent: Monday, July 21, 2008 6:24 AM

To: Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD; Chavez, Carl J, EMNRD

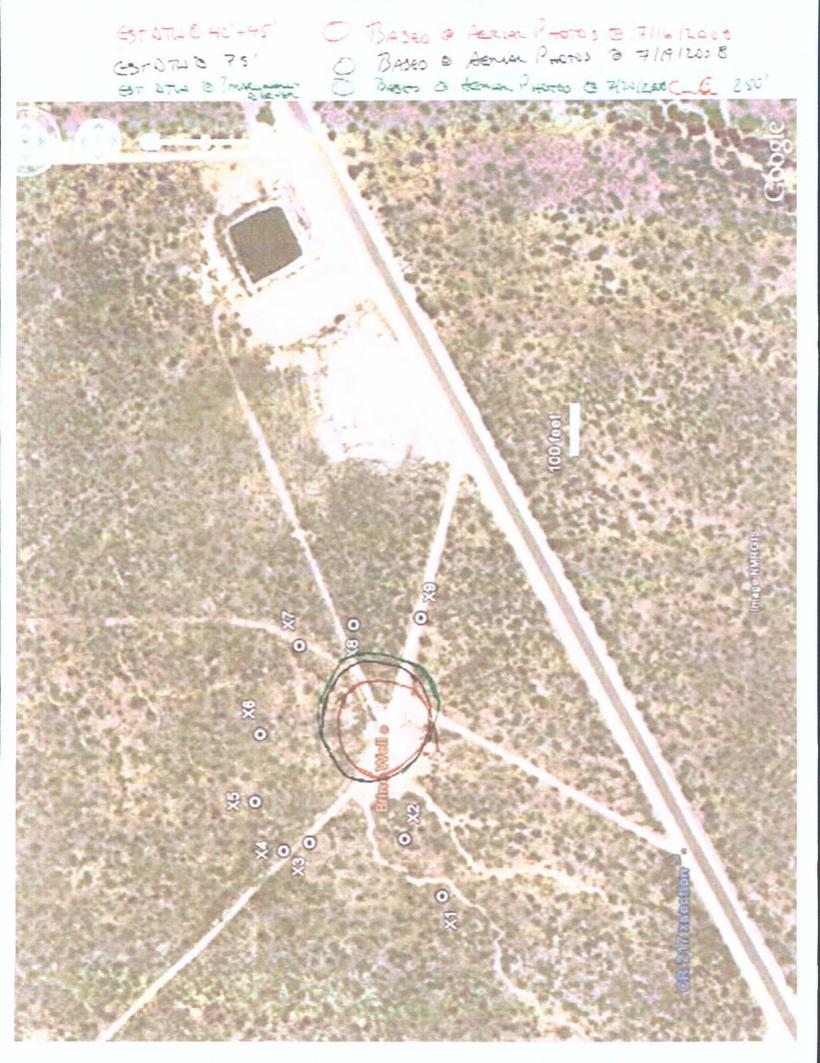
Cc: VonGonten, Glenn, EMNRD; Hansen, Edward J., EMNRD

Subject: BW005

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Things are quiet, only one tourist.



From:

Chavez, Carl J, EMNRD

Sent:

Tuesday, July 22, 2008 8:09 AM

To:

Price, Wayne, EMNRD

Cc:

VonGonten, Glenn, EMNRD

Subject: FW: Jims Water Survice BW-5 Information

FYI.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau

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

Office: (505) 476-3491 Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications")

From: George Veni [mailto:gveni@warpdriveonline.com]

Sent: Saturday, July 19, 2008 5:28 PM

To: miraclemaker40@yahoo.com

Cc: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD **Subject:** RE: Jims Water Survice BW-5 Information

Carl,

Thank you for the information and the photos you sent. I flew over the sinkhole today and have another flight scheduled for tomorrow morning. It is providing me some useful information. Later this week I'd like to coordinate an exchange of information and ideas. I have a few major deadlines this weekend so I need to be brief, but I want to continue working with you and everyone else to better understand this sinkhole. If the online data are detailed enough and provide some key bits of information I need, then along with our other observations and air photo measurements, I should be able to develop a good estimate on the size of the underlying cavity, its geometry, and the likely extent and growth pattern of the sinkhole. I'd also use the information to estimate the risk of collapse at the brine production well in Carlsbad too.

One of the key things I'd like to establish with you, Wayne, and other appropriate representatives of local, state, and national agencies, is a relationship where you understand who and what the National Cave and Karst Research Institute is and our abilities, so we can work more efficiently and effectively together in future situations involving issues such as sinkhole collapse, groundwater protection, groundwater remediation, and groundwater quantity in karst areas. Few people are trained in karst, but it is our life's work. I'd be happy to meet sometime when things calm down to better describe who we are and what we can offer.

George (send from home)

George Veni, Ph.D.
Executive Director
National Cave and Karst Research Institute
1400 Commerce Dr.
Carlsbad, New Mexico 88220 USA
gveni@nckri.org
www.nckri.org
001-575-887-5517 (office)
001-210-863-5919 (mobile)
001-413-383-2276 (fax)

From: Carl Chavez [mailto:miraclemaker40@yahoo.com]

Sent: Friday, July 18, 2008 1:16 AM

To: gveni@nckri.org

Cc: miraclemaker40@yahoo.com; Carl Chavez; Wayne.Price@state.nm.us

Subject: Jims Water Survice BW-5 Information

George:

Please go to OCD Online at http://ocdimage.emnrd.state.nm.us/imaging/AEOrderFileView.aspx? appNo=pENV0000BW0006

to view the well file. You may also query well information by entering the API# 30-015-02036 at OCD Online at http://ocdimage.emnrd.state.nm.us/imaging/AEOrderCriteria.aspx

It was a pleasure meeting and talking to you about your business. Hope some good info. will result from this event.

Thank you.

This inbound email has been scanned by the MessageLabs Email Security System.

From:

Chavez, Carl J, EMNRD

Sent:

Tuesday, July 22, 2008 7:58 AM

To:

Griswold, Jim, EMNRD

Subject:

FW: BW005

Attachments: BW005 Status @ 2008 0721.jpg; BW005 Status @ 2008_0721.pdf

FYI.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

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

Office: (505) 476-3491

Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm

(Pollution Prevention Guidance is under "Publications")

From: VonGonten, Glenn, EMNRD Sent: Monday, July 21, 2008 6:24 AM

To: Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD; Chavez, Carl J, EMNRD

Cc: VonGonten, Glenn, EMNRD; Hansen, Edward J., EMNRD

Subject: BW005

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Things are quiet, only one tourist.

Glenn von Gonten

From: Chavez, Carl J, EMNRD

Sent: Tuesday, July 22, 2008 7:59 AM

To: VonGonten, Glenn, EMNRD

Cc: Hansen, Edward J., EMNRD; Griswold, Jim, EMNRD

Subject: RE: BW005

Glenn:

Jim is plotting the rest of the points today. Will send upon completion sometime today. Thnx.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

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Cc: VonGonten, Glenn, EMNRD; Hansen, Edward J., EMNRD

Subject: BW005

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VonGonten, Glenn, EMNRD

Sent:

Monday, July 21, 2008 6:24 AM

To:

Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD; Chavez, Carl

J, EMNRD

Cc:

VonGonten, Glenn, EMNRD; Hansen, Edward J., EMNRD

Subject:

BW005

Attachments: BW005 Status @ 2008_0721.jpg; BW005 Status @ 2008_0721.pdf

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Things are quiet, only one tourist.

From: VonGonten, Glenn, EMNRD

Sent: Saturday, July 19, 2008 8:18 PM

To: Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD; Chavez, Carl J,

EMNRD

Subject: BW005 Status

All,

As of 7:30 PM, July 19, 2008, here is how things stand.

Mark has been relieved by Paul, also from Jim's.

Our dinner is late.

Joel brought by today's aerial photos. After studying all the photos, I estimate that the collapse was approximately 180 feet across and 45 feet to water on July 16, 2008. Today, I would estimate the collapse to be 240 feet across and 75 feet to water. A threefold increase in three days.

The photos show that the collapse is on the southwest and is actively expanding to the east-northeast. I cannot get the scanner to save the photos that I was working from. Try again tomorrow when Joel stops by.

From:

VonGonten, Glenn, EMNRD

Sent:

Tuesday, July 22, 2008 6:45 AM

To:

Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD

Cc:

Chavez, Carl J, EMNRD; Lowe, Leonard, EMNRD; Griswold, Jim, EMNRD; Jones, Brad A.,

EMNRD

Subject:

Brine Well Collapse BW005 Status @ 2008_0722

Attachments: BW005 Status @ 2008_0721.pdf

All,

Yesterday, the first section of fence was begun. Contractor set two corner fences along CR 217 and set T posts at 20 foot centers for approximately 900 feet. Today, the concrete corner posts will have set and the contractors two crews will string 4 strands of barbed wire along the road. Dave Harrel (BLM) has agreed to take over as IC during the day and will relieve Ed and I. Contractor will set two other corners and set T posts to encircle entire site.

NKCRI did a flyover yesterday morning, but we have seen the photos yet. Collapse site was generally quiet, but at 19:30 hrs, Ed and I did witness a major spall At 20:00 hrs, two trespassers tried to sneak into site from unnamed two track from North from CR 233. We ran them off and called State Police but did not hear whether NMSP apprehended the two individuals.

The plan today is to turn over command to Dave Harrel, travel to Artesia and meet with Daniel and Sonny. We will hand over Durango with the 660-1067 cell phone, H2S meter, and camera. We will then take the car back to Santa Fe this afternoon.

From: VonGonten, Glenn, EMNRD

Sent: Sunday, July 20, 2008 6:32 AM

To: Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD; Chavez, Carl J,

EMNRD

Subject: BW005 COLLAPSE STATUS

All,

As of 06:30 hrs, July 20, 2008, the collapse is quiet. No spalling events detected from nearby point of rocks over 10 minute period of time. The yellow crime scene tapes across the 5 roads are all still visible.

Ed is sleeping like a Lord. We are now out of coffee - situation is now serious.

From: George Veni [gveni@warpdriveonline.com]

Sent: Saturday, July 19, 2008 5:28 PM

To: miraclemaker40@yahoo.com

Cc: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD

Subject: RE: Jims Water Survice BW-5 Information

Carl,

Thank you for the information and the photos you sent. I flew over the sinkhole today and have another flight scheduled for tomorrow morning. It is providing me some useful information. Later this week I'd like to coordinate an exchange of information and ideas. I have a few major deadlines this weekend so I need to be brief, but I want to continue working with you and everyone else to better understand this sinkhole. If the online data are detailed enough and provide some key bits of information I need, then along with our other observations and air photo measurements, I should be able to develop a good estimate on the size of the underlying cavity, its geometry, and the likely extent and growth pattern of the sinkhole. I'd also use the information to estimate the risk of collapse at the brine production well in Carlsbad too.

One of the key things I'd like to establish with you, Wayne, and other appropriate representatives of local, state, and national agencies, is a relationship where you understand who and what the National Cave and Karst Research Institute is and our abilities, so we can work more efficiently and effectively together in future situations involving issues such as sinkhole collapse, groundwater protection, groundwater remediation, and groundwater quantity in karst areas. Few people are trained in karst, but it is our life's work. I'd be happy to meet sometime when things calm down to better describe who we are and what we can offer.

George (send from home)

George Veni, Ph.D.
Executive Director
National Cave and Karst Research Institute
1400 Commerce Dr.
Carlsbad, New Mexico 88220 USA
gveni@nckri.org
www.nckri.org
001-575-887-5517 (office)

001-210-863-5919 (mobile) 001-413-383-2276 (fax)

From: Carl Chavez [mailto:miraclemaker40@yahoo.com]

Sent: Friday, July 18, 2008 1:16 AM

To: gveni@nckri.org

Cc: miraclemaker40@yahoo.com; Carl Chavez; Wayne.Price@state.nm.us

Subject: Jims Water Survice BW-5 Information

George:
Please go to OCD Online at http://ocdimage.emnrd.state.nm.us/imaging/AEOrderFileView.aspx? appNo=pENV0000BW0006
to view the well file. You may also query well information by entering the API# 30-015-02036 at OCD Online at http://ocdimage.emnrd.state.nm.us/imaging/AEOrderCriteria.aspx
It was a pleasure meeting and talking to you about your business. Hope some good info. will result from this event.
Thank you.
This inbound email has been scanned by the MessageLabs Email Security System.

Page 1 of 1

Chavez, Carl J, EMNRD

From: VonGonten, Glenn, EMNRD

Sent: Saturday, July 19, 2008 2:21 PM

To: Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD

Cc: Price, Wayne, EMNRD; Chavez, Carl J, EMNRD; Gum, Tim, EMNRD

Subject: BW005 Collapse

Ed Hansen and I relieved Wayne and Carl. Collapses are still occurring. The consensus from the Walk Around was that the cracks are getting bigger and that the hole is getting larger.

From:

Chavez, Carl J, EMNRD

Sent:

Saturday, July 19, 2008 10:51 AM

To:

Chavez, Carl J, EMNRD

Cc:

miraclemaker40@yahoo.com

Subject:

Aerial Photos

Attachments: BW-5 Pictures 7-16-2008 009.jpg; BW-5 Pictures 7-16-2008 010.jpg; BW-5 Pictures 7-16-

2008 008.jpg; BW-5 Pictures 7-16-2008 007.jpg







From:

Chavez, Carl J, EMNRD

Sent:

Friday, July 18, 2008 7:12 PM

To:

miraclemaker40@yahoo.com

Cc:

Chavez, Carl J, EMNRD

Subject:

Jims Water Service (BW-5) Collapse (before the collapse w/ stress crack locations)

Attachments: OCD Jims Water Service BW-5 Subsidence-Stress Crack Map 7-17-08.JPG; BW-5 Pictures 7-

16-2008 010.jpg; BW-5 Pictures 7-16-2008 008.jpg

Mark:

Please find attached a photo that depicts the center of the brine well that collapsed along with concentric stress crack locations.

From:

Carl Chavez [miraclemaker40@yahoo.com]

Sent:

Friday, July 18, 2008 7:07 PM

To:

Chavez, Carl J, EMNRD

Subject:

Fw: crack plotting of your sinkhole

Attachments: carl's window into hell.jpg

--- On Fri, 7/18/08, Griswold, Jim, EMNRD < Jim. Griswold@state.nm.us> wrote:

From: Griswold, Jim, EMNRD < Jim.Griswold@state.nm.us>

Subject: crack plotting of your sinkhole To: miraclemaker40@yahoo.com Date: Friday, July 18, 2008, 4:41 PM

Hi Carl,

Attached you will find a .jpg file I put together using the GPS data you provided Glenn on Thursday evening. Hope this is of help

Jim Griswold

Hydrologist

Environmental Bureau

ENMRD/Oil Conservation Division

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

direct: 505.476.3465

email: jim.griswold@state.nm.us

<<carl's window into hell.jpg>>

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This inbound email has been scanned by the MessageLabs Email Security System.





From: Price, Wayne, EMNRD

Sent: Friday, July 18, 2008 9:01 PM

To: Fesmire, Mark, EMNRD; VonGonten, Glenn, EMNRD; Gum, Tim, EMNRD; Gum, Tim, EMNRD

Cc: Chavez, Carl J, EMNRD

Subject: Brine well collapse Status report

IC was taken by Dave Herrell 8-5pm.

News paper and TV on-site. Jodi Porter notified.

Cavern active early and tappered off later in the day. Still growing, will provide estimate tommorow. Fly over planned in the morning 9am. Road marked for spotting an comparing hole size.

Carl Chavez and Wayne Price visited I&W evaluated brine well system located in Carlsbad. Reviewed Echo-Log. Preliminary evaluation indicates large roof cavern size. Our recommendation to I&W was to considered P&A. They have not responded. If they do not respond will recommend we require closure or show cause hearing to determine path forward. We received an unsolicit call from Jim Goodbar BLM Karst expert???, recommeded that OCD require I&W require closure. He indicated it would be a catastrophic event, due to the fact that the main canel for the Carlsbad irrigation district is in close proximaty to site. He indicated if cavern failed all of the water in largest canel approximately 20 miles would be lost and only cutoff is at MacMillian Lake. Also downstream farming would be out of water.

Wayne Price took back ICO at 17:30 pm.

Wayne Price-Environmental Bureau Chief Oil Conservation Division 1220 S. Saint Francis Santa Fe, NM 87505

E-mail wayne.price@state.nm.us

Tele: 505-476-3490 Fax: 505-476-3462

From:

Chavez, Carl J, EMNRD

Sent:

Friday, July 18, 2008 7:12 PM

To:

miraclemaker40@yahoo.com

Cc:

Chavez, Carl J, EMNRD

Subject:

Jims Water Service (BW-5) Collapse (before the collapse w/ stress crack locations)

Attachments: OCD Jims Water Service BW-5 Subsidence-Stress Crack Map 7-17-08.JPG; BW-5 Pictures 7-

16-2008 010.jpg; BW-5 Pictures 7-16-2008 008.jpg

Mark:

Please find attached a photo that depicts the center of the brine well that collapsed along with concentric stress crack locations.







From:	Carl Chavez [miraclemaker40@yahoo.com]
Sent:	Friday, July 18, 2008 7:12 AM
To:	Fesmire, Mark, EMNRD; VonGonten, Glenn, EMNRD
Cc:	miraclemaker40@yahoo.com; Price, Wayne, EMNRD; Chavez, Carl J, EMNRD
Subject:	Morning Status Report
Good mor	rning. weather good. 72 degrees wind 8 ssw. mostly clear skies.
Viewed co	opy of press release last night & looks accurate.
	none numbers 575-200-(6112, 6113, or 6114) Command Center do not give out to Public or ne new IC today will be Dave Harrell (BLM) Safety Officer and recently retired State Police
	Cty rd all night at 1 and 2 hr. intervals, no change, all ok. Observed 4 foot rattlesnake within ommand center.
	buth side at 6:45, propogation cracks somewhat larger, collapse area active mainly on the west ed one large mesquite bush now gone, however hole still inside of first line perimeter flags.
-	ef this a.m. from Dave Harrell, Carl & I are going to I&W (BW-6) Carlsbad to determine the heir subsidence monitoring program.
Will keep	you apprised.
This inbou	and email has been scanned by the MessageLabs Email Security System.
	

From: VonGonten, Glenn, EMNRD

Sent: Friday, July 18, 2008 12:11 PM

To: Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Lowe, Leonard, EMNRD; Griswold, Jim,

EMNRD

Cc: Price, Wayne, EMNRD; Hansen, Edward J., EMNRD; Jones, Brad A., EMNRD; Chavez, Carl J,

EMNRD

Subject: BW005

All,

Ed and I are traveling to Roswell this afternoon. We will relieve Wayne and Carl at the collapse site Saturday morning. We have Daniel's Durango and a cell phone (795-1222). We are prepared to stay Saturday through Sunday, but we will have to play it by ear.

Sue's phone number is 992-0402 if there is an emergency.

From: Carl Chavez [miraclemaker40@yahoo.com]

Sent: Friday, July 18, 2008 12:06 AM

To: Stewart, John L., OSE

Cc: miraclemaker40@yahoo.com; Price, Wayne, EMNRD; Chavez, Carl J, EMNRD

Subject: Hydrogeology Near BW-005 Collapse N 32.73199 W 104.12791

John:

Could you please send the OCD some hydrogeologic information or a summary of the area for our record?

See link to press release issued yesterday evening at http://www.emnrd.state.nm.us/main/documents/PR-OCD.Brine.Collapse.07.17.08.pdf. Thank you.

This inbound email has been scanned by the MessageLabs Email Security System.

z, Carl J, EMNRD
Carl Chavez [miraclemaker40@yahoo.com]
Friday, July 18, 2008 1:16 AM
gveni@nckri.org
miraclemaker40@yahoo.com; Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
: Jims Water Survice BW-5 Information
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e well file. You may also query well information by entering the API# 30-015-02036 at OCD http://ocdimage.emnrd.state.nm.us/imaging/AEOrderCriteria.aspx
leasure meeting and talking to you about your business. Hope some good info. will result from.
u.

From: Chavez, Carl J, EMNRD

Sent: Friday, July 18, 2008 6:01 PM

To: Price, Wayne, EMNRD

Subject: FW: www.krqe.com: Expanding sinkhole closes state highway

From: Porter, Jodi, EMNRD Sent: Thu 7/17/2008 9:09 PM

To: Prukop, Joanna, EMNRD; EMNRD-OCD - SANTA FE

Cc: Shipley, Pahl, DHSEM

Subject: www.krqe.com : Expanding sinkhole closes state highway



Jodi (jodi.porter@state.nm.us) has sent you an item from http://www.krqe.com.

Expanding sinkhole closes state highway

SANTA FE (KRQE) - State environment officials are investigating a sinkhole that is several hundred feet across and still growing in an oil-and-gas area southeast of Artesia. http://www.krqe.com/global/story.asp?s=8695626

Find more items like this at http://www.krqe.com

Copyright 2008 KRQE

From: Carl Chavez [miraclemaker40@yahoo.com]

Sent: Thursday, July 17, 2008 10:08 PM

To: VonGonten, Glenn, EMNRD; Fesmire, Mark, EMNRD

Cc: miraclemaker40@yahoo.com; Price, Wayne, EMNRD; Chavez, Carl J, EMNRD

Subject: Jims Waterr Service (BW-5) Collapse & Requested Information

Glenn:

Wayne and I forgot the web address link to access our work e-mails and are using my personal e-mail address to communicate with you from the Command Center. Could you please send us the web address to the NMOCD e-mail system so we may access our work e-mail. Also, Wayne would like you to resend the message he sent you and Mark tonight back to miraclemaker40@yahoo.com so he may read it. In the future we will copy this address to read what we send. Thanks.

We are working to identify concentric stress cracks (micro and macro) away from the center of the collapse or brine well. Some of the cracks exhibit shear, but most have no vertical offset. The majority of slumping is occurring at the NW, N and NE walls. Slumping is occurring at a rate of about every 15 minutes. An observer who looked over the rim of the collapse this afternoon said that there is major fracturing all around circumference of the hole and any major rain event may result in a significant collapse. Since we can't step up to the hole, we are attempting to collect and monitor obvious information that may yield useful information to OCD and the regulated community related to brine well collapse. Sometimes, witnesses have observed water splashing over the rim during slumping, but I haven't seen this. We are having trouble assessing the depth to the water table within the hole. Please find an aerial photo that may help you to estimate the depth to the water table based on dimensions from the roadway to the brine well, you may be able to scale the aerial photo sent to you to give us your opinion on depth to the water table in the hole, since we can't approach the rim. Thnx.

Could you please assist us by plotting some coordinates on Google Earth to give us some outer dimensions of the stress cracking around the hole. The coordinates taken on 7/17/2008 17:00 are:

Brine Well Location of Collapse: N 32.73199 W -104.12791

CR-217 & Dirt Road Intersection: N 32.73037 W -104.12872 EL. 3371

Stress Crack Locations Around Collapse:

X1: N 32.73169 W -104.12896

X2: N 32.73189 W -104.12860

X3: N 32.73240 W -104.12862

X4: N 32.73254 W --104.12867

X5: N 32.73269 W -104.12836

X6: N 32.73266 W -104.12793 EL 3504

X7: N 32.73245 W -104.12737 EL. 3510

X8: N 32.73216 W -104.12724

X9: N 32.73180 W -104.12720 EL. 3509

Tomorrow morning, we will search for stress cracking further away from the staked locations and positioned stakes for loss as the hole gets larger. Please send us back a map with the plotted coordinates provided above with some dimensions (in feet) to give us a better handle on footages from the center of the collapse or brine well, from the road to the center of the brine well, and distances of the stress cracks from the center of the hole or brine well and distances of cracks from roadway and distances from the brine well or center of the collapse if possible. We have estimated a max. radius based on production data of about 300 ft. from the center of the brine well. Thank you.

From:

Carl Chavez [miraclemaker40@yahoo.com]

Sent:

Thursday, July 17, 2008 9:33 PM

To:

Fesmire, Mark, EMNRD

Cc:

glen.vongonten@state.nm.us; Price, Wayne, EMNRD; Chavez, Carl J, EMNRD

Subject:

Jims Water Service (BW-5) Collapse- Status Report from Command Center

Attachments: BW-5 Pictures 7-16-2008 010.jpg; BW-5 Pictures 7-16-2008 008.jpg

Gentlemen:

Aerial photos taken by Eddy County air command yesterday afternoon. Estimated size of hole was 150-200 feet Dia. Hole expanded to approximately 250-300 feet by noon today.

Hole is very unstable, continue to closely monotor.

Hwy ct rd 217 closed between bluestem 360 and Illinois Camp Road. State Police ERO is Brain Burke, his comander Cris Clements NMSP Roswell (575-622-7200). Mr. Clements made a request that OCD Wayne Price assume command of site due to ICS experience. I releived on site commander Robert Brader of Eddy Ct Emergency Management center.

Transistion very smooth.

Command center set up at brine pond up on hill overlooking well area approximately 400-500 yards east of site on Hwy. Hole area is propagating generally to the west down 2 small dry watercourse features. Hwy being monitored on the hour thru out the night.

On site meeting held with NMSLO, NMSP, OCD, JWS, Eddy CT. Emergency Management team and County Commissioner. Agreed that Emergency Command center remain on site until hole stabilizes and fence built.

The site was flagged with markers at the most inner stress macro cracks and at minor cracks that basically run circle-parallel around hole. Four acess roads were blocked with rocks and barrier tape. Oil operators in area offered assistance. No known pipelines,

power lines, tank batteries are within 1/2 mile. Carl with assistance of the JWS, NCKRI, BLM is plotting stress cracks to determine est. path migration. Using extreme catuion with buddy system and a watchmen during survey.

State Land office wants fence and signs. JWS making Large signs and arrangement to put up fence.
Several people from the public ran the barriers and was stopped by state police. State police issued tickets and warnings. Once this started we were able to obtain control of the site.
Press has not shown up.
No Injuries.
Interviwed the eye witness. Took statement.
Met with Company representatives. Very cooperative.
Will report again in the morning.
Command center fully equipped, communication, food/water, satilite TV.
Command Center telephone numbers 575-200-6112,6113,6114.
DO NOT Release Numbers to Public or Media.

From:

Chavez, Carl J, EMNRD

Sent:

Wednesday, July 16, 2008 5:37 PM

To:

Pham.Lisa@epamail.epa.gov

Cc:

Sanchez, Daniel J., EMNRD; Fesmire, Mark, EMNRD; Price, Wayne, EMNRD;

'Vaughan.Michael@epamail.epa.gov'

Subject:

FW: BW-5 Jims Water Service Brine Well Collapse- No Injuries

Follow Up Flag: Follow up

Flag Status:

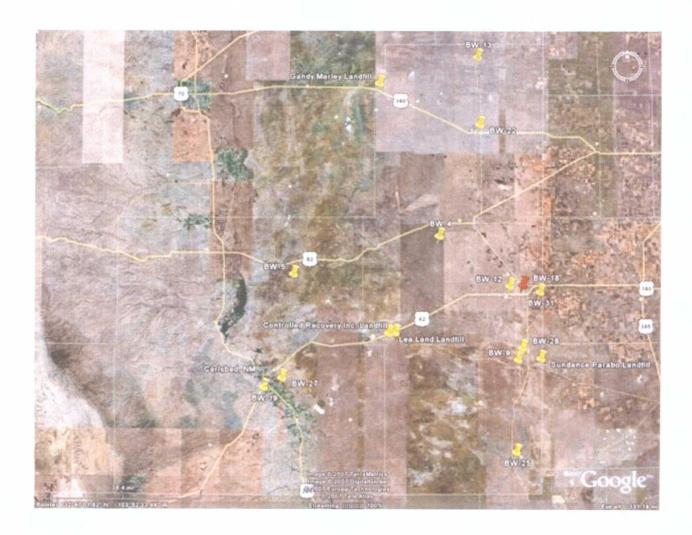
Red

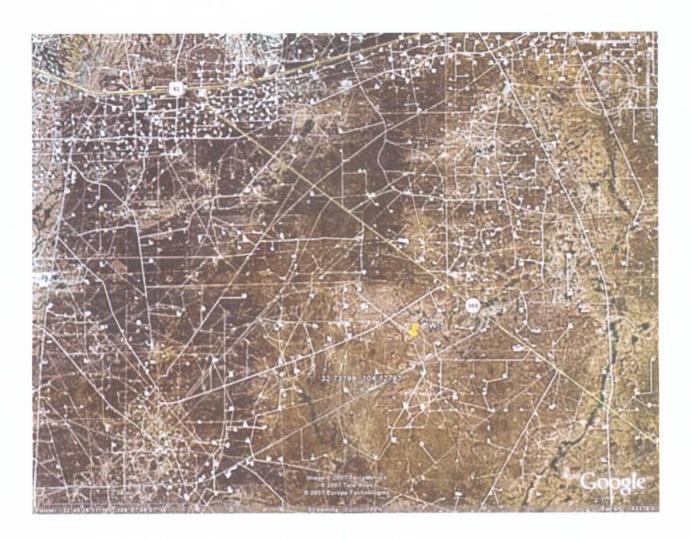
Ms. Pham:

Re: N 32 73199 W 104 12791

ne. i	N 32.1	3133 W 104.12/31							
1	BW- 5	JIMS WATER SERVICE	JIMS WATER	12/19/2006	30- 015-	12/11/2007	1/7/2005	9:00	1
		1	SERVICE -		02036				
			LOCO		,				
			HILLS						

This afternoon the OCD was alerted to a collapse at BW-5 (see link below to more information on well). As of this time, there appears to be no injuries and the well is located in a remote area that has been secured by State Police. Wayne Price and Carl Chavez will be on site tomorrow morning. The facility is located about 20 miles NE of Carlsbad, NM. We'll keep you apprised as conditions warrant.







Thank you.

Carl J. Chavez, CHMM New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505

Office: (505) 476-3491 Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD

Sent: Wednesday, July 16, 2008 5:14 PM

To: Porter, Jodi, EMNRD

Cc: Fesmire, Mark, EMNRD; Price, Wayne, EMNRD

Subject: BW-5 Jims Water Service Brine Well Collapse- No Injuries

Jodi:

In case you need info. on the brine well collapse NE of Carlsbad today, please go to OCD Online at http://ocdimage.emnrd.state.nm.us/imagihg/AEOrderFileView.aspx?appNo=pENV0000BW0006.

You may contact Wayne Price and I tomorrow at 505-660-1067 or 795-1222 Cell phone. Thx.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505

Office: (505) 476-3491

Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm

(Pollution Prevention Guidance is under "Publications")



From:

Pham.Lisa@epamail.epa.gov

Sent:

Wednesday, July 23, 2008 8:36 AM

To:

Chavez, Carl J, EMNRD

Cc:

Sanchez, Daniel J., EMNRD; Vaughan.Michael@epamail.epa.gov; Price, Wayne, EMNRD;

Leissner.Ray@epamail.epa.gov

Subject:

BW-5 Jims Water Service Brine Well Collapse Update

Hi Carl,

Thank you so much for this update. We have a few questions about this well so please respond if you can. Thanks.

- 1. What is the operational activity of the brine well in question?
- 2. What is NMOCD's current opinion on what caused the collapse and how much more collapse do you expect?
- 3. What is the public reaction?

Lisa Pham U.S. EPA Region 6 (6WQ-SG) Dallas, TX

From:

Griswold, Jim, EMNRD

Sent:

Tuesday, July 22, 2008 9:27 AM

To:

Chavez, Carl J, EMNRD; Price, Wayne, EMNRD; VonGonten, Glenn, EMNRD

Subject:

sinkhole correction

On the last aerial I sent you, the full extent of the scale on the lower left was cropped off in making the .jpg file. The size of that white bar is actually only about 50 feet. The distance from the original brine well to point X35 in blue is about 510 feet.

Jim Griswold Hydrologist Environmental Bureau ENMRD/Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505 direct: 505.476.3465

email: jim.griswold@state.nm.us

From: Price, Wayne, EMNRD

Sent: Tuesday, July 22, 2008 4:31 PM

To: Chavez, Carl J, EMNRD

Subject: RE: BW-5 Jims Water Service Brine Well Collapse Update

Thanks

From: Chavez, Carl J, EMNRD

Sent: Tuesday, July 22, 2008 3:46 PM To: Pham.Lisa@epamail.epa.gov

Cc: Vaughan.Michael@epamail.epa.gov; Leissner.Ray@epamail.epa.gov; Price, Wayne, EMNRD

Subject: RE: BW-5 Jims Water Service Brine Well Collapse Update

Ms. Pham:

Please attached photos of the brine well collapse; Eddy County Mobile Command Center stationed at the site; and Incident Commander Wayne Price of the OCD on location. The Command Center will remain on site blocking the roadway probably until this Friday. According to an eye witness, the collapse occurred on 7/16/2008 at about 8:15 a.m.

A 3-mile stretch of CR-217 was closed the evening of 7-16-2008, until a barbed wire fence along the easement of the roadway and a fence around the hole a minimum of 100 ft. back from outer stress cracks flagged at the site.

A detention pond on the uphill side will be constructed to prevent fresh water from draining into the hole. The hole size is increasing by about 10 ft. per day. Please contact the OCD if you have questions. Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept. Oil Conservation Division, Environmental Bureau

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

Office: (505) 476-3491 Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications")

----Original Message-----

From: Pham.Lisa@epamail.epa.gov [mailto:Pham.Lisa@epamail.epa.gov]

Sent: Thursday, July 17, 2008 5:55 AM

To: Chavez, Carl J, EMNRD

Subject: Re: Salty Dog (BW-8) UIC Class III Well ACO Follow-Up (Lea County)

Thank you for the information. Could you please include Mike Vaughn, Ray Leissner, and Jim Walker in your future e-mails also. Thanks.

"Chavez, Carl J, EMNRD" < Carl J. Chavez @ state.nm.us > wrote on 07/16/2008 03:00:58 PM:

- > [image removed]
- > Ms. Pham:

> FYI, please find attached legal correspondence related to the on-going

> New Mexico Oil Conservation Division BW-8 enforcement case. Please > contact me if you have questions. Thank you. > Carl J. Chavez, CHMM > New Mexico Energy, Minerals & Natural Resources Dept. > Oil Conservation Division, Environmental Bureau > 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 > Office: (505) 476-3491 > Fax: (505) 476-3462 > E-mail: CarlJ.Chavez@state.nm.us > Website: http://www.emnrd.state.nm.us/ocd/index.htm > (Pollution Prevention Guidance is under "Publications") > > Confidentiality Notice: This e-mail, including all attachments is for > the sole use of the intended recipient(s) and may contain confidential > and privileged information. Any unauthorized review, use, disclosure > or distribution is prohibited unless specifically provided under the > New Mexico Inspection of Public Records Act. If you are not the > intended recipient, please contact the sender and destroy all copies > of this message. -- This email has been scanned by the Sybari -> Antigen Email System. > [attachment "ACO Follow-Up 7-16-08.tif" deleted by Lisa Pham/R6/USEPA/US]

From:

Chavez, Carl J, EMNRD

Sent:

Tuesday, July 22, 2008 3:46 PM

To:

'Pham.Lisa@epamail.epa.gov'

Cc:

'Vaughan.Michael@epamail.epa.gov'; Leissner.Ray@epamail.epa.gov; Price, Wayne,

EMNRD

Subject:

RE: BW-5 Jims Water Service Brine Well Collapse Update

Attachments: BW-5 Pictures 7-16-2008 010.jpg; BW-5 Pictures 7-16-2008 009.jpg; Jims Water Service BW-

5 7-16-08 143.jpg; Jims Water Service BW-5 7-16-08 159.jpg

Ms. Pham:

Please attached photos of the brine well collapse; Eddy County Mobile Command Center stationed at the site; and Wayne Price of the OCD on location. The Command Center will remain on site blocking the roadway probably unt to an eye witness, the collapse occurred on 7/16/2008 at about 8:15 a.m.

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A detention pond on the uphill side will be constructed to prevent fresh water from draining into the hole. The hole about 10 ft. per day. Please contact the OCD if you have questions. Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

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

Office: (505) 476-3491 Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications")

----Original Message----

From: Pham.Lisa@epamail.epa.gov [mailto:Pham.Lisa@epamail.epa.gov]

Sent: Thursday, July 17, 2008 5:55 AM

To: Chavez, Carl J, EMNRD

Subject: Re: Salty Dog (BW-8) UIC Class III Well ACO Follow-Up (Lea County)

Thank you for the information. Could you please include Mike Vaughn, Ray Leissner, and Jim Walker in your future e-mails also. Thanks.

"Chavez, Carl J, EMNRD" < Carl J. Chavez@state.nm.us> wrote on 07/16/2008 03:00:58 PM:

- > [image removed]
- > Ms. Pham:

- > FYI, please find attached legal correspondence related to the on-going
- > New Mexico Oil Conservation Division BW-8 enforcement case. Please
- > contact me if you have questions. Thank you.

>

> Carl J. Chavez, CHMM

> New Mexico Energy, Minerals & Natural Resources Dept. > Oil Conservation Division, Environmental Bureau > 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 > Office: (505) 476-3491 > Fax: (505) 476-3462 > E-mail: CarlJ.Chavez@state.nm.us > Website: http://www.emnrd.state.nm.us/ocd/index.htm > (Pollution Prevention Guidance is under "Publications") > > Confidentiality Notice: This e-mail, including all attachments is for > the sole use of the intended recipient(s) and may contain confidential > and privileged information. Any unauthorized review, use, disclosure > or distribution is prohibited unless specifically provided under the > New Mexico Inspection of Public Records Act. If you are not the > intended recipient, please contact the sender and destroy all copies > of this message. -- This email has been scanned by the Sybari -> Antigen Email System. > [attachment "ACO Follow-Up 7-16-08.tif" deleted by Lisa Pham/R6/USEPA/US]

From: VonGonten, Glenn, EMNRD

Sent: Tuesday, July 22, 2008 9:52 AM

To: Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; Price, Wayne, EMNRD

Cc: Lowe, Leonard, EMNRD; Griswold, Jim, EMNRD; Chavez, Carl J, EMNRD; Jones, Brad A.,

EMNRD

Subject: BW005

We have turned over the IC to Dave Harrell and are heading for Artesia to meet Daniel and Sonny.

Glenn von Gonten Senior Hydrologist Environmental Bureau Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505 505-476-3488 fax -476-3462 glenn.vongonten@state.nm.us

From:

Griswold, Jim, EMNRD

Sent:

Tuesday, July 22, 2008 9:21 AM

To:

Chavez, Carl J, EMNRD; Price, Wayne, EMNRD; VonGonten, Glenn, EMNRD

Subject:

sinkhole

Attachments:

sinkhole aerial.jpg

Attached you will find a .jpg file from Google Earth containing all GPS locations. Points marked in blue or yellow are reference points. Points in white are the positions of fractures.

Jim Griswold Hydrologist Environmental Bureau ENMRD/Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505

direct: 505.476.3465

email: jim.griswold@state.nm.us



sinkhole aerial.jpg (153 KB)

K.P. KAUFFMAN COMPANY, INC.

WORLD TRADE CENTER
1675 BROADWAY, 28TH FLOOR
DENVER, COLORADO 80202-4628

RECEIVED 2008 AUG 4 PM 2 02

TELEPHONE (303) 825-4822 FACSIMILE (303) 825-4825 www.kpk.com

-JWS

JWS of New Mexico, Inc.

Via USPS- CERTIFIED MAIL-RETURN RECEIPT REQUESTED

August 1, 2008

State of New Mexico
Oil Conservation Division
District II office
1301 W. Grand Ave.
Artesia, New Mexico 88210

Re:

Form C-103

Sundry Notice sinkhole development 7-16-08, summation of incident report

API #30-015-02036

State 24 No. 1

To Whom It May Concern:

Please see attached sundry (in triplicate) regarding the referenced well. This brine well was reported as lost on the morning of July 16, 2008. The sundry and attachments are the incident report for this event. I will send more information on the ongoing investigation that Jim's Water Service (JWS) and K. P. Kauffman Company, Inc. (KPK) are conducting at this time when the information becomes available. We will continue to notify you of anyone on site. Please call me if you have any questions. Thanks!

Sherry Glass

Engineering Technician

herydlass

KPK/JWS

Attachments

Cc: Mr. Wayne Price, OCD, Santa Fe, New Mexico office

Submit 2 Cania	s To Appropriate District	5	. CN1 N (F C 102
Office	s 10 Appropriate District	State Energy, Miner	of New Me			Form C-103 June 19, 2008
<u>District I</u> 1625 N. French District II	Dr., Hobbs, NM 88240	<u> </u>			WELL API NO. 3001502	
	Ave., Artesia, NM 88210	OIL CONSE	RVATION uth St. Fran		5. Indicate Type of Le	
1000 Rio Brazo	s Rd., Aztec, NM 87410		i Fe, NM 87		STATE X 6. State Oil & Gas Le	FEE L
District IV 1220 S. St. Fran 787505	ncis Dr., Santa Fe, NM	Santa	11.0, 14141 07	303	M19609	ase No.
		ES AND REPORTS			7. Lease Name or Uni	it Agreement Name
DIFFERENT R	THIS FORM FOR PROPOSA ESERVOIR. USE "APPLICA				State 24	0. 001
PROPOSALS.) 1. Type of V		as Well 🛛 Other	Brine	extraction	8. Well Number	0. 001
2. Name of					9. OGRID Number	
3. Address	of Operator 13 US H:		Artesia,	NM 88210	10. Pool name or Wil	dcat
					<u> </u>	
4. Well Loc Uni	it Letter:	1988 feet from		line and	30 feet from the	e east line
Sec	tion 24	Township		nge 28E		ounty
		11. Elevation (Show 3503 G)	v whether DR, L	RKB, RT, GR, etc.)		
	12 Check Ar	nronriate Boy to	Indicate N	ature of Notice	Report or Other Dat	я
	•	•	indioare iv		•	
DEDECIDA	NOTICE OF INT REMEDIAL WORK □	ENTION TO: PLUG AND ABAND	YON IT	REMEDIAL WOR	SEQUENT REPOI	RTOF: TERING CASING □
		CHANGE PLANS		COMMENCE DRI	· · · · · · · · · · · · · · · · · · ·	ND A
PULL OR A	LTER CASING	MULTIPLE COMPL	. 🗖	CASING/CEMENT	T JOB 🔲	_
DOWNHOL	E COMMINGLE			sinkho	ole developmen	t 7-16-08
OTHER:			П		ion of incide	
13. Desc of st	eribe proposed or comple arting any proposed work completion.			ertinent details, and	d give pertinent dates, in	cluding estimated date
Þ.	lease see atta	ched summat	ion of i	ncident eve	ents, remediat	ion, and
	ccounting of J					
	-16-08. JWS is				_	
	ur specialists			- :		
	or additional	_	and wil	i monitor i	roddway arong	217
T-,	or addresonar	subsidence.				
Spud Date:		R	tig Release Da	ite:		
I hereby certi	fy that the information al	ove is true and com	plete to the be	est of my knowledge	e and belief.	
	P1	10				
SIGNATURE	colling o				echnician DATE	
Type or print	name Sherry Class	3S	E-mail address	:sglass@kp	k.com PHONI	303.825.4822
For State Us	e Only				_ _	

TITLE_

DATE_

APPROVED BY:
Conditions of Approval (if any):

Submit 3 Copies To Appropriate District	State of New Mexico	Form C-103
Office District I	inergy, Minerals and Natural Resources	June 19, 2008
1625 N. French Dr., Hobbs, NM 88240	OIL CONSERVATION DIVISION	WELL API NO. 3001502036
District ID	1220 South St. Francis Dr.	5. Indicate Type of Lease
1000 Rio Brazos Rd., Aztec, NM 87410	Santa Fe, NM 87505	STATE X FEE 6. State Oil & Gas Lease No.
District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505	Salta I.S, IIII 07300	M19609
SUNDRY NOTICES A	ND REPORTS ON WELLS	7. Lease Name or Unit Agreement Name
(DO NOT USE THIS FORM FOR PROPOSALS TO DIFFERENT RESERVOIR. USE "APPLICATION		State 24
PROPOSALS.) 1. Type of Well: Oil Well Gas W	ell 🛛 Other Brine extraction	
2. Name of Operator Jim's Water Se	ervice	9. OGRID Number
3. Address of Operator 13 US High	way 82, Artesia, NM 88210	10. Pool name or Wildcat
4. Well Location J 1988	get from the south line and 19	930 - east
Unit Letter:		930 feet from the east line
Section	10viisiip runge	NMPM Eddy County
A phase Ref.	Elevation (Show whether DR, RKB, RT, GR, etc. 3503 GL	
12. Check Approp	priate Box to Indicate Nature of Notice,	, Report or Other Data
	•	•
NOTICE OF INTENT	TION TO: SUE G AND ABANDON ☐ REMEDIAL WOR	BSEQUENT REPORT OF: RK
<u> </u>	- · · · - · · · - · · · · · · - ·	RILLING OPNS. P AND A
	TIPLE COMPL CASING/CEMEN	
DOWNHOLE COMMINGLE	sinkh	ole development 7-16-08
OTHER:	OTHERsumma	tion of incident report 🛛
		nd give pertinent dates, including estimated date attach wellbore diagram of proposed completion
·	3	
	d summation of incident ev BLM, OCD, and others foll	
		_
	oceeding with investigation	-
-	present and will monitor	roadway along 217
for additional sub	sidence.	
Spud Date:	Rig Release Date:	
<u></u>		
I hereby certify that the information above i	is true and complete to the best of my knowled	ge and belief.
SIGNATURE Shury of	TITLE Engineering T	Technician DATE 8-1-08
71		
Type or print name Sherry Glass For State Use Only	E-mail address:Blass@kp	PHONE:
APPROVED BY:	TITLE	DATE
Conditions of Approval (if any):		

Submit 3 Copies To Appropriate District State of New Mexico Office	Form C-103
District Energy, Minerals and Natural Resources WELL API NO.	June 19, 2008
District II OII CONSERVATION DIVISION 30015020	
District III	se FEE
District V Santa Fe, NM 87505 Santa Fe, NM 87505 6. State Oil & Gas Leas	
1220 S. St. Francis Dr., Santa Fe, NM M19609	1
SUNDRY NOTICES AND REPORTS ON WELLS 7. Lease Name or Unit	Agreement Name
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH State 24	
PROPOSALS.) 1. Type of Well: Oil Well Gas Well X Other Brine extraction 8. Well Number 8. Well Number	. 001
2. Name of Operator 9. OGRID Number	
Jim's Water Service	
3. Address of Operator 13 US Highway 82, Artesia, NM 88210 10. Pool name or Wildo	at
4. Well Location Unit Letter J 1988 feet from the south line and 1930 feet from the	east line
Section 24 Township 18S Range 28E NMPM Eddy Cou	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3503 GL	
12 Charle Assessment Posts Visions of Nation Deposit on Other Date	
12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data	
NOTICE OF INTENTION TO: SUBSEQUENT REPOR	T OF: RING CASING □
TEMPORARILY ABANDON CHANGE PLANS COMMENCE DRILLING OPNS.	
PULL OR ALTER CASING MULTIPLE COMPL CASING/CEMENT JOB	
DOWNHOLE COMMINGLE sinkhole development	7-16-08
OTHER: OTHERsummation of inciden	
13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, inc of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of or recompletion.	
Please see attached summation of incident events, remediati	on, and
accounting of JWS, BLM, OCD, and others following incident	,
7-16-08. JWS is proceeding with investigation of event using	ıa
our specialists at present and will monitor roadway along 2	=
for additional subsidence.	
202 000200000	
Spud Date: Rig Release Date:	
I hereby certify that the information above is true and complete to the best of my knowledge and belief.	<u></u>
\$ 1, A11.	
SIGNATURE MUNI Slass TITLE Engineering Technician DATE	8-1-08
Type or print name Sherry Class E-mail address: sglass@kpk.com PHONE:	303.825.482

TITLE____

_DATE__

APPROVED BY:
Conditions of Approval (if any):

Summation of JWS brine well collapse, OCD permit #BW-005, Eddy County, New Mexico

7-16-08: Mark Netherlin of JWS arrived at the wellhead site at approximately 8:15 a.m., saw the collapse of the wellhead start after hearing a loud noise (rumble), got back in his truck and reversed quickly to a safe distance on the pavement along Hwy 217, then called the JWS field office. Dimas Herrera, the GM of the JWS field office, arrived within half an hour and called the OCD, BLM, State Land Office, Eddy Co. Emergency Response and County Roads and Sheriff's office. Dimas called corporate office to report loss of brine well. The hole was approximately 30' x 40' wide at that point, with undetermined depth. Other field hands arrived from the field office and blocked off all access roads with posts, flagging ribbons and old pallets and lumber available at the brine reserve pit. OCD (Mike Bratcher) reported later to Energy, Minerals and Natural Resources (EMNR) District 2 office in Artesia about disappearance of the well. Many successive collapses occurred over the course of the day, with noise and dust obscuring the sinkhole from sight. Sheriff was on location to close road. 7-17-08: OCD was onsite and Mark Netherlin gave a verbal report to Wayne Price of OCD, who had assumed Incident Commander (IC) role. The sinkhole was very active, had grown to approximately 120' x 100'. A perimeter around the outside of the visual cracks was established with stakes and flagging. Kent Gilbert of Denver office flew to Artesia to go to site and meet with OCD, established a log book for visitors to site, and incidents report. Kent, Dimas and Wayne agreed to wait until Monday to set up fence to allow sinkhole to stabilize. Kent Gilbert and Dimas Herrera then walked perimeter of site to place numbered flags on visible surface cracks to map and record distances from approximate far wall of hole to each flag (please see attachment 1). The Eddy County Mobile Command Center arrived, Jim Carr, District Manager of Field Operations Division of State (SLO) arrived and inspected the site. David Herroll of the BLM assumed IC from Wayne Price and was safety officer when Mark Netherlin. Pat Seiser of the National Caverns and Karst Research Institute (NCKRI), and Carl Chavez of the OCD walked the perimeter to examine the cracks paralleling the feature. Wayne Price called for a safety meeting to assign tasks to the personnel at the site and go over the dangers to avoid on the site.

7-18-08: The sinkhole was very active, with loud rumbling, ground-shaking and dust thrown up. The hole is approximately 200' x 200'. John Stewart of EMNR stated there was little fresh ground water present in this location (from Rustler Formation). The BLM representatives arrived with 4 karst specialists, including George Veni, the Executive Director of the NCKRI and Lewis Derrick, Eddy County Commissioner. David Herroll assumed IC, and did the incident safety briefing for the day and indicated he wanted 'Keep Out-Danger' signs posted, as he noticed cracks along the east side and undercutting of the north and west walls. Wayne Price had diagrammed the 'Hot Zone' indicated on the attached map (please see attachment 2), expecting the feature to stabilize within one week. Pat Seiser spray painted a scale on the roadway for the expected flyovers. Robert Brader of the SLO requested a chain link fence around the site. The Eddy County

Mobile Command Center was assigned to the location and JWS personnel were assigned to be on site 24 hours a day. The state police arrived and ranchers requesting access to their lands were told they could not go by the access roads in the 'Hot Zone' by Lewis Derrick. Dimas Herrera and the OCD conducted GPS and range finder surveys on the flagged stress cracks and the perimeter of the hole. State police arrived on the site at 3:40 p.m. 7-19-08: JWS personnel posted 2 state signs, indicating penalties and danger of trespass of property on T-posts with wire strung in between around access onto site from 217. Glenn Von Gonten and Edward Hansen (OCD) arrived on site. There were two flyovers, at 9:22 and 9:40 a.m. Some activity at the site indicated the feature was mainly deepening. Email from George Veni (NCKRI) to Carl Chavez (OCD) indicates his interest in coordinating an exchange of information and ideas regarding this sinkhole and the brine production well in Carlsbad.

7-20-08: Rental trailer secured for the JWS crew to stay in, OCD requested meals for their personnel on site. Some activity, with NCKRI photos indicating growth except for the W-SW-S area. OCD queried JWS personnel about fence status. 7-21-08: KPK discussing cave specialists to help mitigate situation, lessen impacts to public safety and help in KPK investigation of event. NCKRI flyover, JWS began installing fence posts and cemented in place. Jenny Rennie (Eddie County Commissioner), Robert Brader (Eddy Co. OEM), and Joel Arnwine (Eddy Co. OEM) walked perimeter of hole. Jim Herring (Bogel Farms ranch foreman) came to check on progress of the fence. Hole was active, lots of dust from fallout. Size is approximately 220' x 220'. Massive sinkhole activity occurred in the evening. Two trespassers were encountered on the north side of the area at 22:00, state police were informed.

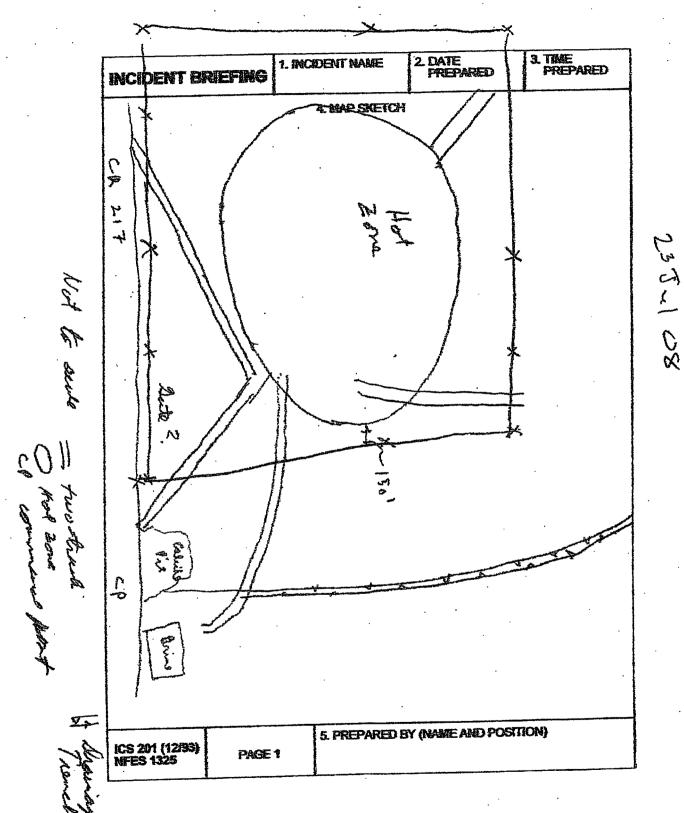
7-22-08: Aerial photos indicating feature over brine well are discussed at KPK, acquiring and sorting documents from JWS for review. Sheriff visits the site, JWS directed to dig a trench with a backhoe on high ground on east side to direct drainage from the sinkhole. Cemented fence corner post at Reed & Stevens Travis well location to southwest of feature, but directed by David Herroll to put fencing crews to dig ditch for drainage from sinkhole, so workers pulled off fencing project. Hole was very active in the evening.

7-23-08: Pipeline markers were flagged. Ten workmen for JWS working on installing fencing and finishing ditch by backhoe. OCD puts Travis well (Reed and Stevens, operator) to the west back on line. Activity resumes, with S-SE sidewalls caving back approximately 50'. The Eddy County Mobile Command unit decides to de-mobilize on 7-24-08. Leonard Lowe and Jim Griswold from OCD were on site. Hole active in the evening, as indicated by dusting. 7-24-08: Activity larger on south side, helicopter flyover, outermost fractures at 118' to 217.

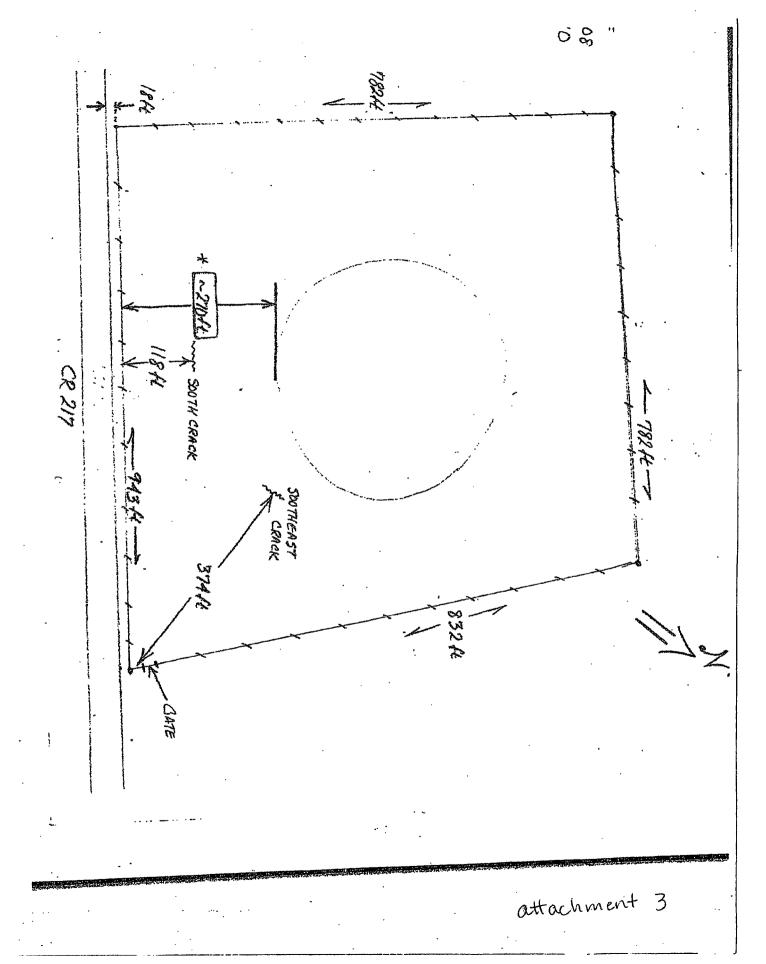
7-25-08: Finished fencing, lock on gate. Hole is still active, with lots of dust from the edges. Highway (217) is opened. (please see attachment 3, sketch of fence around sinkhole, and attachment 4, photos of sinkhole)

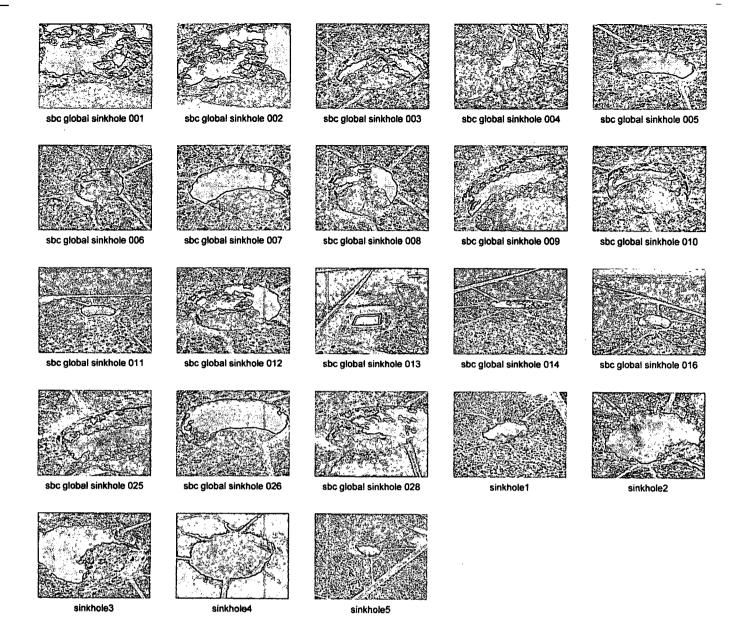
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attachment 1



attachment 2





attachment 4



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