WELL ANALYSIS CORPORATION

WATER INJECTION SURVEY

FILING NO.:

COMPANY: R & R NATURAL RES. MGMT. CORP.
WELL: WNF-119
FIELD: WILMINGTON
COUNTY: LOS ANGELES
STATE: CALIFORNIA
LOCATION: OTHER SVC.
DISTRICT

API NUMBER: 0402723866
PERMANENT DATUM: GROUND LEVEL ELEV: PNG: 13W
LOG MEASURED FROM: 13' ABOVE PERM. DATUM
DRILLING MEASURED FROM: KB

ELEVATIONS:
KB: Ft.
DF: Ft.
GL: Ft.

DATE LOG RAN	02-13-2013	PRESSURE		FLOWING	INJECTION	SHUT-IN	
RUN NUMBER	ONE	TUBING PSI		1039			
DEPTH-DRILLER	5100'	CASING PSI					
PICK UP DEPTH	5100'	INJECTION RATE		11 B/D			
BOT LOGGED INT	5100'	OBSERVED RATE		48 B/D			
TOP LOGGED INT	200'	R/A SOURCE		4.131 W			
FLUID IN WELL	WATER	HALF LIFE		9.11 W			
FLUID LEVEL	SURFACE			6.08 DAYS			
WELL STATUS	INJECTION						
MAX TEMP/PRESSURE	1925 F / 2215 V						
AT DEPTH	5150'						
TEMPERATURE SENS.	1 F/2.25V	OIL Gr.					
MPP		GAS Gr.					
BHP =		OIL=					
WATER=		GAS=					
		BHP=					
		WATER=					

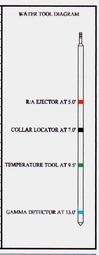
PRODUCTION DATA

OPERATOR	R. MORGAN		
WITNESSED BY			
RECORDED BY	D. POTTS		
INSTRUMENT	A. GLENN		
INSTRUMENT CORRELATION	PACKER		

Equipment Data

R/A EJECTOR	1.375"		
COLLAR LOCATOR	1.375"		
TEMPERATURE TOOL	1.375"		
GAMMA DETECTOR	1.375"		

WATER TOOL DIAGRAM



Remarks/Survey Results

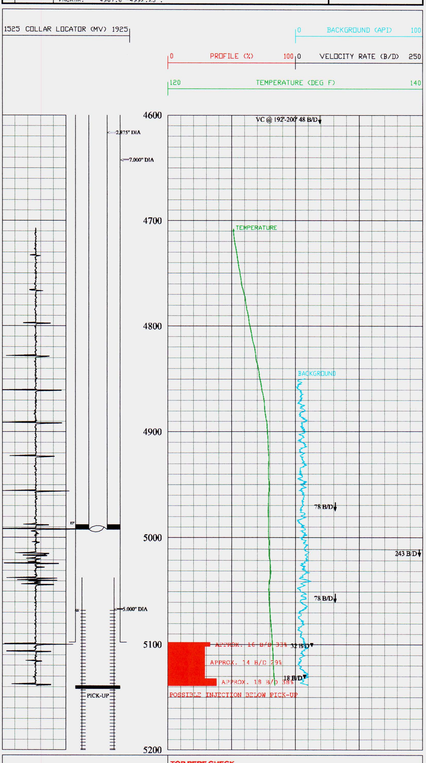
SURVEY INDICATES NO MIGRATION ABOVE TOP PERF OR AT THE PACKER.
07:00 AM - ON LOCATION
08:00 AM - RAN IN HOLE
08:15 AM - BEGIN SURVEY
10:20 AM - FULL OFF GL LOGS
10:45 AM - OFF LOCATION

RATES INJECTION PROFILE:
5098'-5152' APPROX. 16 B/D 33%
5152'-5232' APPROX. 14 B/D 29%
5232'-5139' APPROX. 18 B/D 38%
POSSIBLE INJECTION BELOW PICK-UP

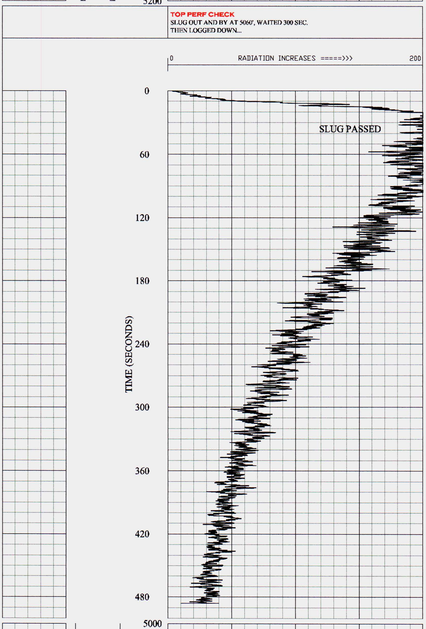
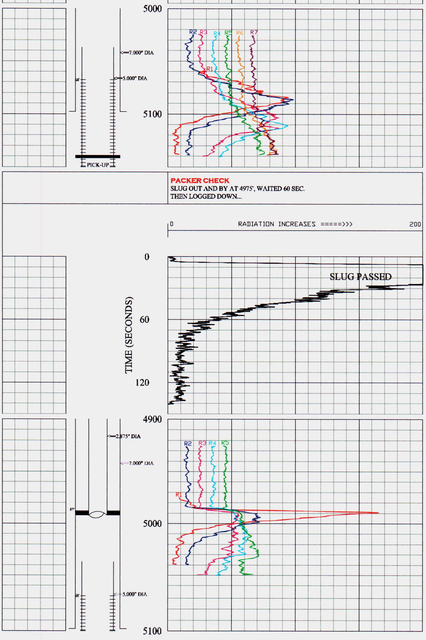
CASING AND TUBING RECORD

SIZE	WT(#)	FROM	TO	SIZE	WT(#)	FROM	TO
7"	23	SURFACE	500F				
5"	18	5007	525M				
3.875"	6.5	SURFACE	4992.23'				

STR.	PIPE DIA.	PERFORATIONS
A.	5"	5068'-5250'
		PICK-UP: 4987.8' 4997.23'.



TOP PERF CHECK
SLUG OUT AND BY AT 5067, WAITED 300 SEC.
THEN LOGGED DOWN...



PACKER CHECK
SLUG OUT AND BY AT 4975, WAITED 60 SEC.
THEN LOGGED DOWN...