Gill Ranch Storage Monthly Operations Report November 2012

OPERATIONS SUMMARY

Arlon Eklund/Operations; Todd Thomas/Construction

Operations:

- All scheduled injections and withdrawals were completed as requested during November
- Yearly Calibrations of Transmitters 90% complete
- · Completed clean up of Dehy trains
- Moved Radio Antennas as suggested by Ron van Bladeren
- · Completed Redundant server project
- Completed all well logging, testing, and reservoir withdrawal flow testing
- On 11/30 we lost all power from 1300 until 1515; no Commercial impact

Construction:

No construction activity in November

Operational Metrics				Equipment Availability			
# Days Inj	# Days w/d	Standby	% Availability	Compressors	Dehy	Heaters	Gen Sets
19	4	7	100%	5	2	4	2

KEY EQUIPMENT STATUS:

C230 is back in service

Both Dehy Trains have been cleaned and filled with Virgin Glycol

SAFETY SUMMARY:

- Safety Meeting 11/15/2012 Injury / Accident Prevention Program Review; reviewed Identified Potential Hazards (IPH) and Positive Safety Exchanges (PSE); visitors: Trudy Wegner, Todd Thomas, Clayton Roth, and Roger Haley
- Reviewed Safety Management Plan (Karl Leger, Compliance Solutions)
- Reviewed recent well work and findings (Clayton Roth)

STAFFING:

• Benito Gonzalez's last day 11/27/12; in the process of hiring a new Operator

ENVIRONMENTAL EVENTS / ISSUES:

- Completed the amendment to the Paramount Farms easement agreement for their pipe "Tap in" to GRS 30" pipeline; document currently under legal review
- Met with Karl Leger in Fresno to discuss long term strategies for GRS' Public Awareness Program

REGULATORY COMPLIANCE:

CPUC FILINGS

- Leak Detection Monitoring Report for July September 2012
- Report on Gas Leak Related Incidents for uly September 2012 (no incidents)
- Q3-2012 Financial Statement

DOE / U.S. ENERGY INFORMATION ADMINISTRATION FILINGS

- Underground Gas Storage Weekly Reports
- Underground Gas Storage Monthly Report October 2012

DOGGR

Mechanical Integrity Testing (MIT) Report/Logs

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT (SJVAPCD)

• Rule 4320 - Emission Limits; No Action Required

Arlon Eklund

Arlon Eklund

Arlon Eklund

John Foseid

Trudy Wegner

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RESERVOIR PERFORMANCE:

Clayton Roth

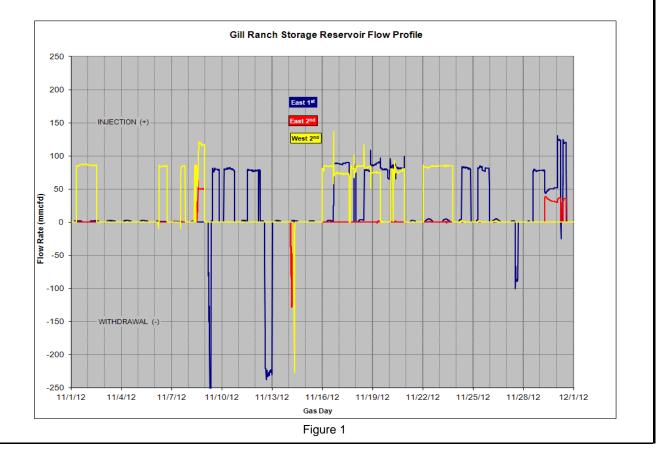
Reservoir withdrawal flow tests were conducted on all three storage reservoirs in November. Overall, the reservoir flow tests showed performance similar to that seen in the November 2011 flow tests, indicating that the wells have "cleaned up" from drilling and completion operations. This performance is good in that the deliverability is now becoming consistent. In addition to confirming reservoir deliverability, annual reservoir flow tests like these are the best way to detect any well or reservoir performance problems. After several years of operation, some storage fields exhibit decreasing performance resulting from a variety of causes. If the cause of a decline in performance that is detected by flow tests can be determined, operational changes or remediation can be made that may stem further performance decline. Another series of flow tests will be required in 2013 and subsequent years to substantiate reservoir deliverability.

In addition to the withdrawal reservoir flow testing, mechanical integrity tests (MIT), bottom hole pressure (BHP) surveys, and cased hole neutron logs were run in November. The MITs are conducted annually in all the injection/withdrawal wells as prescribed by the Gill Ranch Storage operating permit. The MITs are conducted under static reservoir conditions that require each reservoir to be shut-in for at least two days. No indication of wellbore integrity problems (leaks) were found.

The bottom hole pressure surveys are performed twice a year to measure pressure in the storage reservoirs and look for pressure changes in the observation wells that might indicate potential gas migration. The surveys are run once in the fall when the reservoirs are at or near full inventory, and again in the spring at or close to the lowest working gas inventory level for the storage cycle. The BHP surveys in the observation wells detected no operational issues.

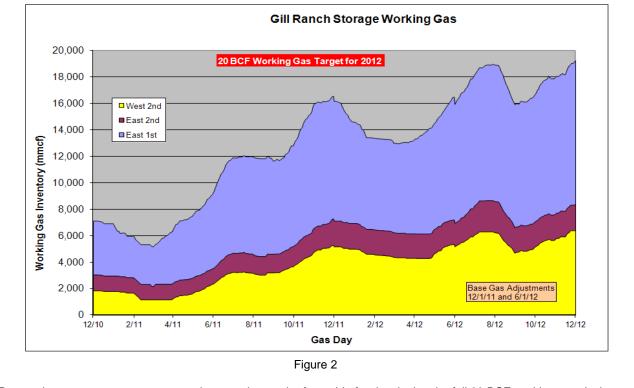
The cased hole neutron logs are run in selected observation wells in the fall at or close to full inventory levels to detect potential gas migration from the storage reservoir. No significant changes in status of the observation wells were noted.

All wells and reservoirs are performing as expected. The flow rate profile for each reservoir in November is shown in the following graph (Figure 1). Positive flow rates are injection and negative flow rates are withdrawal. Injection flows in November were made into all three Starkey reservoirs. Total injection flow rates from all reservoirs varied from 77 to 168 mmcfd. With the exception of the flow testing periods, there were two days of withdrawal in November. Only the East 1st Starkey reservoir was used. Flow rates were 100 to 235 mmcfd.



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The total working gas volume in the reservoirs at the end of November was 19,254 mmcf, or about 96% full using the 2012/2013 expected working gas capacity of 20,000 mmcf. There was a net increase in total working gas inventory for the month of 1272 mmcf. The next graph (Figure 2) shows the working gas inventory by reservoir since December 1, 2010. Note that the 'Y' axis is total working gas inventory and the graph shows each reservoir's proportionate volume. Transfers of working gas to base gas occur in the graph as small, sharp decreases in inventory on 12/1/11 and 6/1/12.



Reservoir responses to storage operations continue to be favorable for developing the full 20 BCF working gas design capacity in 2012. As shown in Figure 2, the maximum total working gas volume in the reservoirs to date has been 19.25 BCF.