#### **RECEIVED**

1:20 pm, Apr 05, 2011

Alameda County Environmental Health

March 28, 2011

Jerry Wickham Alameda County Environmental Health Svcs 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

Re:

Transmittal Letter

Site Location:

Springtown Gas

909 Blue Bell Drive, Livermore, CA 94551

Dear Mr. Wickham:

On behalf of Aminifilibadi Masood & Amini Sharbano, Geological Technics Inc. (GTI) prepared the 1<sup>st</sup> Quarter Groundwater Monitoring & Interim Remedial Action Status Report, dated March 28, 2011 that was sent to your office via electronic delivery per Alameda County's guidelines on March 29, 2011.

I declare under penalty of law that the information and/or recommendations contained in the above referenced document or report is true and correct to the best of my knowledge.

Respectfully submitted,

Aminifilibadi Masood/Amini Sharbano Property Owner 909 Blue Bell Drive Livermore, CA 94551

# Geological Technics Inc.\_

## REPORT

**Groundwater Monitoring and Interim Remedial Action Status** 

1st Quarter 2011

Springtown Gas 909 Bluebell Drive Livermore, California

> Project No. 1409.2 March 28, 2011

Prepared for:
Masood Amini Filibadi and Shahrbano Amini
909 Bluebell Drive
Livermore, California 95353

Prepared by:
Geological Technics Inc.
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# Geological Technics Inc.\_

1172 Kansas Avenue Modesto, California 95351 (209) 522-4119/Fax (209) 522-4227 www.gtienv.com

March 28, 2011

Project No.:

1409.2

Project Name:

Springtown Gas (Bluebell)

Masood Amini Filibadi and Shahrbano Amini Springtown Gas 909 Bluebell Drive Livermore, California 94551

RE:

Report – 1<sup>st</sup> Quarter 2011 Groundwater Monitoring

Springtown Gas, 909 Bluebell Drive, Livermore, California

Dear Masood Amini Filibadi and Shahrbano Amini:

Geological Technics Inc. (GTI) has prepared the following Report for the 1<sup>st</sup> Quarter 2011 groundwater monitoring event performed on February 17, 2011 at Springtown Gas, 909 Bluebell Drive, Livermore, California.

If you have any questions, please do not hesitate to call me at (209) 522-4119.

Respectfully submitted,

Tamorah Bryant, P.E.

cc:

Jerry Wickham - ACEHS

USTCFP

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# Geological Technics Inc.\_

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#### REPORT

# Groundwater Monitoring and Interim Remedial Action Status 1st Quarter 2011

Springtown Gas 909 Bluebell Drive Livermore, California

Project No. 1409.2 March 28, 2011

#### 1. EXECUTIVE SUMMARY

This report summarizes the results of the 1<sup>st</sup> Quarter 2011 groundwater monitoring and sampling event that took place on February 17<sup>th</sup>, 2011 at Springtown Gas, 909 Bluebell Drive, Livermore, Alameda County, California (Site) and includes an evaluation of the interim remedial effectiveness as directed by Alameda County Environmental Health (ACEH) in correspondence dated November 15, 2010.

The average groundwater elevation at the site was 511.79 feet above mean sea level (AMSL) and the groundwater flow was N54°W at a gradient of 0.008 ft/ft for this event. This was the eighth monitoring event in which well P-1 was incorporated into the contours, and the fourth event that wells MW-4, MW-101, MW-102, and MW-103 were incorporated into the contours.

The results of analyses conducted on groundwater samples collected from the eight monitoring wells (STMW-1, STMW-2, STMW-3, P-1, MW-4, MW-101, MW-102 and MW-103) reported that six of the eight wells were below laboratory reporting limits for all constituents analyzed. MW-4, MW-101, MW-102 and MW-103 reported below laboratory reporting limits for the fourth consecutive quarter. Monitoring wells STMW-1 and P-1 reported to contain 4.2 µg/L and 1.9 µg/L of MTBE, respectively, which is below Environmental Screening Levels (ESLs) and California Drinking Water Maximum Contaminant Levels (MCLs) for all constituents analyzed.

The following recommendations are made:

- 1. Since the site meets low risk closure criteria, Geological Technics Inc. recommends that the site be considered for low-risk closure immediately.
- 2. Pending ACEH approval, GTI proposes preparing a work plan for well abandonment activities, in preparation for site closure.
- 3. Continue groundwater monitoring until directed otherwise by ACEH.
- Impending changes within the USTCF process will result in budgetary constraints placed on all projects. To accommodate these impending changes, GTI proposes that the groundwater monitoring and sample analysis be reduced.

#### 2. PHYSICAL SETTING

The Site is situated in a mixed commercial-residential land-use area of Livermore, California, located at the southeast corner of the intersection of Springtown Boulevard and Blue Bell Drive, approximately 300 feet north of westbound Interstate 580 (Figure 1). The Site occupies approximately 0.74 acres, and is currently an operating service station with minimart retailing Chevron-branded gasoline and diesel fuel products. The site contains one UST cluster in the east portion of the Site consisting of one 12,000 gallon capacity unleaded gasoline UST, and a 12,000 gallon capacity segmented UST storing 6,000 gallons of diesel and 6,000 gallons of premium unleaded. A single story mini-mart is located on the southern portion of the Site, and six canopied fuel dispensers are located in the north portion of the Site. No automotive repair facilities exist on the Site. The Site is adjoined by Springtown Boulevard on the west, motel properties on the south and east, and Bluebell Drive on the north. Retail land-use is located on the north side of Bluebell Drive, with residential land-use beyond to the north and northeast.

The Site is located at an elevation of approximately 520 feet above mean sea level in the northeast portion of the Livermore Valley (USGS 1981). The Livermore Valley is a structural basin bounded by faults on the east and west that create the Altamont Hills uplift on the east and the Pleasanton Ridge uplift on the west (CDM&G, 1991). The shallow Pleistocene to recent sediments underlying the basin consist of alluvial deposits that have been informally divided into upper and lower units. The sediment, ranging from coarse-grained gravel to fine-grained mud, was transported northward from the Northern Diablo Range on the southern margin of the basin and deposited in an alluvial fan, braided stream, and lacustrine environments. Because the sediment prograded northward, the coarse-grained sediment makes up nearly 80% of the sediment in the southern part of the basin, but northward and westward interfingers with clay deposits that may be as much as 30 feet thick (DWR, 2004).

Drainages from the south, north, and east converge in the western part of the basin and flow out of the basin toward the Sunol Valley and Alameda Creek west of Pleasanton Ridge. The nearest surface drainages are Las Positas Creek located approximately 1 mile west of the Site, and Cavetano Creek 2 miles west of the Site (USGS 1981).

The alluvial fan, braided stream and lacustrine deposits are the principal aquifers for most domestic and irrigation purposes in the Livermore Valley, although the underlying Livermore Formation, which may be as much as 4,000 feet thick, yields significant quantities of groundwater on the eastern side of the basin (DWR 2004).

#### 3. GROUNDWATER MONITORING

#### 3.1. Groundwater Elevation and Flow Direction

The average groundwater elevation for the 1<sup>st</sup> Quarter 2011 monitoring event was 511.79 feet AMSL on February 17<sup>th</sup>, 2011, which corresponds to approximately 7.84 feet below ground surface (bgs). This elevation represents an increase of 0.13 feet since the 4<sup>th</sup> Quarter 2010 monitoring event (November 30, 2010) and a decrease of 0.72 feet since the 1<sup>st</sup> Quarter 2010 monitoring event (February 10, 2010). The groundwater gradient for the 1<sup>st</sup> Quarter 2011 groundwater monitoring event was N54°W at a gradient of 0.008 ft/ft, which is consistent with the previous groundwater monitoring events.

The gradient direction for the 1<sup>st</sup> Quarter 2011 groundwater monitoring event is shown on Figure 2 (Groundwater Gradient Map 1<sup>st</sup> Quarter). The calculated groundwater gradient and flow direction is shown on Figure 3 (Groundwater Gradient Rose Diagram). The groundwater elevation data are summarized in Table 1 included in Appendix A. Table 4 provides a summary of monitoring well completion data.

#### 3.2. Groundwater Sampling Procedure

The 1<sup>st</sup> Quarter 2011 groundwater monitoring event was conducted on February 17<sup>th</sup>, 2011. GTI monitored groundwater elevations and collected groundwater samples for analyses from eight groundwater monitoring wells on the Site. Depth to water in each monitoring well was measured and recorded before groundwater samples were collected from the wells. The wells were purged of at least three well volumes of stagnant water using dedicated Waterra® foot valves and tubing. Purging continued until the temperature, conductivity, and pH of the groundwater stabilized (<10% variation in three consecutive readings), indicating that formation water representative of aquifer conditions was entering the wells. These water quality parameters were measured at intervals of each well volume purged. All purge water was placed in a 55-gallon DOT drums and secured on-site.

Before a sample was collected from each well, the water level was allowed to recharge to at least 80% of its initial level. Dedicated tubing attached to Waterra® foot valves were used to collect groundwater samples from the monitoring wells. The samples were placed into 40-ml

VOA vials preserved with hydrochloric acid. Care was taken to minimize sample aeration during sample collection and avoid generating headspace. All samples were checked for the presence of headspace, labeled, recorded on a chain-of-custody, and placed in an ice chest cooled to 4°C for transport to the analytical laboratory. All non-disposable sampling equipment was decontaminated in an Alconox solution and double-rinsed with de-ionized water before initial use and between uses at each monitoring well.

Groundwater monitoring field logs are included in Appendix C. A summary of Water Quality Parameter Data is included in Table 3 of Appendix A.

#### 3.3. Laboratory Analyses

The groundwater samples collected on February 17<sup>th</sup>, 2011, were delivered to Argon Laboratories of Ceres, California (ELAP #2359) for the following analyses:

The laboratory utilized USEPA Method 8260B to analyze the groundwater samples for the following constituents:

- Total petroleum hydrocarbons as gasoline (TPH-G),
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX),
- Methyl tertiary butyl ether (MtBE), and,
- Di-isopropyl alcohol (DIPE), ethyl-tertiary butyl ether (EtBE), tert-amyl-methyl ether (TAME), 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB), tert butyl alcohol (TBA), methanol and ethanol

The results and detection limits for the above analyses are listed in Table 2 included in Appendix A. Certified analytical reports are included in Appendix B.

As required under AB2886, the groundwater elevation and laboratory analytical data were submitted electronically to GeoTracker on March 28, 2011 for the groundwater elevation data, (confirmation number 5432591259), and the laboratory analytical data (confirmation number 4803475916).

#### 4. GROUNDWATER MONITORING FINDINGS

The results of the 1<sup>st</sup> Quarter 2011 groundwater monitoring event indicate the following:

- The average groundwater elevation at the site was 511.79 feet AMSL and the groundwater flow was N54°W at a gradient of 0.008 for this event.
- The results of analyses conducted on groundwater samples collected from all eight monitoring wells (STMW-1, STMW-2, STMW-3, P-1, MW-4, MW-101, MW-102, and MW-103) did not detect total petroleum hydrocarbons as gasoline (TPH-G) above laboratory reporting limits.

- Concentrations of Methyl tertiary Butyl Ether (MtBE) were detected in groundwater samples collected from two of the sites eight monitoring wells: STMW-1 (4.2 μg/l), and P-1 (1.9 μg/l). This suggests the MtBE groundwater plume is localized in the vicinity of monitoring well P-1.
- The results of analyses conducted on groundwater samples collected from all eight monitoring wells (STMW-1, STMW-2, STMW-3, P-1, MW-4, MW-101, MW-102, and MW-103) did not detect Tert-Butyl Alcohol (TBA) above laboratory reporting limits.
- Concentrations of di-isopropyl alcohol (DIPE), ethyl-tertiary butyl ether (EtBE), tertamyl-methyl ether (TAME), 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB), methanol, ethanol, benzene, toluene, ethylbenzene and total xylenes (BTEX) were not detected in groundwater samples collected from the sites eight monitoring wells.
- Concentrations of all constituents were reported in the groundwater samples collected from the sites eight monitoring wells are at historic or near lows for the 1<sup>st</sup> quarter of 2011.
- Dissolved Oxygen (DO) concentrations increased in all wells that were incorporated into the hydrogen peroxide pilot test (see following discussion and graphs).

#### 5. REMEDIAL EFFECTIVENESS

#### 5.1. Hydrogen Peroxide Pilot Study

In correspondence dated March 13, 2009, Alameda County Environmental Health Department (ACEH) directed GTI to conduct interim hydrogen peroxide injections on a weekly basis for no longer than 4 weeks. On April 14, 2010, GTI request included the newly installed monitoring wells into the injection group. Per two email requests dated April 21<sup>st</sup>, 2010 and May 17<sup>th</sup>, 2010, ACEH extended the interim hydrogen peroxide injection events to a total of 16 events. The interim hydrogen peroxide injection pilot test consisted of a total of 16 injection events conducted from March 30, 2010 through July 21, 2010. A total of approximately 2,385 gallons of dilute hydrogen peroxide solution was injected during the interim hydrogen peroxide injection series.

A historical summary of the hydrogen peroxide injections pilot test activities can be referred to in both the *Additional Site Characterization and Interim Remedial Action Report* prepared by GTI, dated July 30, 2010 and in the 2<sup>nd</sup> and 3<sup>rd</sup> Quarter 2010 *Groundwater Monitoring and Interim Remedial Effectiveness* report dated October 18, 2010.

The additional hydrogen peroxide injection pilot study, approved by ACHCSA on November 15, 2010, consisted of a total of 12 injection events conducted from December 14, 2010 through March 10, 2011. A total of approximately 2,393 gallons of hydrogen peroxide solution was injected during the interim hydrogen peroxide injection series. Table 5 of Appendix A contains a summary of the volumes, concentrations, wells, and dates of application for each of the injection events for both the pilot study and additional pilot study.

#### 5.2. Impact on D.O. Concentrations

#### **First Pilot Study**

The following table includes a summary of the D.O. concentrations that were monitored in the field before during and after the injection events. Please note that STMW-2 did not receive any hydrogen peroxide, but has been included for comparison purposes.

Location	Pre Remedial DO Level (2/10/2010)	Mid Remedial DO Level (4/7/10)	Post Remedial DO level (8/24/10)
STMW-1	6.77	46.5	43.37
STMW-2	0.87	3.65	0.53
STMW-3	0.89	44.26	45.92
P1	0.85	41.56	25.20

It appears that each of the injection wells has experienced a significant increase in D.O. concentrations which appears to have sustained the increase at least a month after the pilot test injections had stopped.

MW-101, and MW-103 did not exhibit the sustained increase in D.O., and it is hypothesized that the wells are screened in a coarse grained unit, which has increased potential for transport, and the benefit of the hydrogen peroxide injection may have moved down gradient towards the small amount of contamination identified in the vicinity of GP-15.

#### **Additional Pilot Study**

The following table includes a summary of the D.O. concentrations that were monitored in the field before the first pilot study as well as before and during the additional pilot study injection events. Please note that STMW-2 received hydrogen peroxide during the additional pilot study. The D.O. concentrations for STMW-2 from the previous table can be used for comparison purposes. Although up-gradient monitoring well MW-4 did not receive peroxide injections during either pilot studies, DO concentrations were included for comparison as a representative background.

Location	Pre Additional Pilot Study DO Level (11/30/10)	Mid Additional Pilot Study DO Level (02/17/11)
STMW-1	<b>.</b>	44.57
STMW-2	Q)	36.31
STMW-3	æ	39.47
P-1	#1	42.07
MW-101	3.85	38.97
MW-102	4.55	21.70
MW-103	2.83	54.71
MW-4	0.15	0.13

Despite being screened in a coarse grained unit, which has increased potential for transport, MW-101, MW-102 and MW-103 exhibited a sustained increase in D.O. following two weeks without peroxide injections. The additional hydrogen peroxide pilot study appears to have been successful at sustaining the elevated DO concentrations achieved during the first pilot study and increasing DO concentrations in STMW-2 and MW-102.

#### 5.3. Impact on Contamination Concentrations

#### **First Pilot Study**

The 3<sup>rd</sup> Quarter 2010 groundwater monitoring event analytical data had indicated historic or near historic lows of contaminant concentrations for the site. It is important to note that the third quarter groundwater monitoring event was conducted more than 30 days following the last injection event, to allow for potential rebound of concentrations. The following table is a summary of the MtBE and TBA concentrations reported to be present before and after the pilot test injection events:

		ItBE µg/l)	<b>ΤΒΑ</b> (μg/l)				
Location	Pre Pilot Test (2/10/10)	Post Pilot Test (8/24/10)	Pre Pilot Test (2/10/10)	Post Pilot Test (8/24/10)			
STMW-1	32	5.9	28	87			
STMW-2	< 0.5	< 0.5	110	33			
STMW-3	44	< 0.5	610	< 5.0			
P-1	110	5.4	5,200	120			

Based on the above analytical data it appears that the pilot test was effective at reducing MtBE and TBA concentrations.

#### **Additional Pilot Study**

The 1<sup>st</sup> Quarter 2011 groundwater monitoring event analytical data has indicated historic low contaminant concentrations for the site. It is important to note that the 4<sup>th</sup> Quarter 2010 groundwater monitoring event was conducted more than 90 days following the last injection event of the first pilot study, to allow for potential rebound of concentrations. The 1<sup>st</sup> Quarter 2011 groundwater monitoring event was conducted after a 2 week break in the additional injection pilot study to allow for potential rebound of concentrations. The following table is a summary of the MtBE and TBA concentrations reported to be present before the first pilot test and near the end of the additional pilot test:

	700	tBE rg/l)	1970	BA ug/l)		
Location	Pre Pilot Test (2/10/10)	Mid Additional Pilot Test (2/17/11)	Pre Pilot Test (2/10/10)	Mid Additional Pilot Test (2/17/11)		
STMW-1	32	4.2	28	< 0.5		
STMW-2	< 0.5	< 0.5	110	< 0.5		
STMW-3	44	< 0.5	610	< 0.5		
P-1	110	1.9	5,200	< 0.5		

#### 5.4. Environmental Screening Levels

Maximum concentrations reported in the 1<sup>st</sup> Quarter 2011 groundwater monitoring event were compared to <u>Table F-1a</u>. Groundwater Screening Levels (groundwater is a current or <u>potential drinking water resource</u>) of *Screening for Environmental Concerns with Contaminated Soil and Groundwater Interim Final – November 2007 (Revised May 2008)* prepared by the California Regional Water Quality Control Board San Francisco Bay Region.

COC	1 <sup>st</sup> Qtr 2011 Max Conc. (µg/l)	Table F-1a ESL (µg/l)
TPH-Gasoline	ND<50	100
MtBE	4.2	5
TBA	ND<0.5	12

MtBE was reported to be below ESLs (based on taste and odor) all wells and was reported to be below the California Drinking Water Maximum Contaminant Level of 13  $\mu$ g/l in all wells. TBA was reported to be below ESLs (based on drinking water toxicity) in all wells.

#### 5.5. Opinion of Effectiveness

It is GTI's opinion that the interim remedial activities consisting of a hydrogen peroxide injection pilot test and additional pilot test were successful and that ISCO is an effective technology to address the contamination in the subsurface.

It is hypothesized that a small amount of residual contamination located in the northwest area of the former USTs (in the vicinity of SB-8) may be sourcing the groundwater plume that is being reported in samples collected from P1 and STMW-1.

#### 6. LOW RISK CLOSURE CONSIDERATION

#### The leak has been stopped and ongoing sources, including free product, removed or remediated.

One underground waste oil tank was located on this site and was removed on February 7, 1992 by Alpha Geo Services Inc. Three 10,000 gallon underground storage tanks (UST's) were removed on December, 13, 1993, followed by the installation of three new gasoline USTs in a separate pit on the east side of the Site, which are still present. Impacted soil was removed from the waste oil and gasoline UST removal excavations and was transported and disposed offsite. GTI concludes that the leak has been stopped and ongoing sources have been removed.

#### 2. The site has been adequately characterized.

A summary of previous investigations including various soil borings, groundwater monitoring well data, CPT and GeoProbe borings have been incorporated into a Site Conceptual Model and Additional Site Characterization Reports. The vertical and lateral extents of the soil and groundwater contamination in the subsurface have been identified, and updated as new information has become available.

As discussed in the *Additional Site Characterization & Interim Remedial Action Report* prepared by GTI, dated July 30, 2010, groundwater and soil contaminants at the site are primarily MtBE and TBA. A minimal amount of TPH-g and methanol has been reported to be present in groundwater and soil but are deemed insignificant. The MtBE and TBA groundwater plume appears to be centered on well P1, and appears to attenuate laterally with distance. The soil plume is laterally and vertically defined with very little contamination reported to be present. It was suspected that a small pocket of contaminated soil located in the northwest area of the former USTs may have been sourcing the groundwater plume. A pocket of contaminated soil was identified from the GeoProbe investigation in the median of Bluebell Drive. The analytical data from soil sampling indicated that the extent of the contamination appeared to be limited vertically and laterally.

#### 3. The dissolved hydrocarbon plume is not migrating.

The site monitoring wells (with the exception of P-1 and STMW-1) have been reported to contain non-detect levels of contaminants of concern. Both P-1 and STMW-1 reported concentrations of MTBE which have been steadily declining and in the first quarter of 2010 are reported to be below CRWCB SFBA Environmental Screening Levels (ESL's).

Based on historical groundwater monitoring data, the historical groundwater gradient is estimated to be 0.005 ft/ft N60°W. The down gradient wells would be considered to include STMW-3 and MW-103, and may include STMW-1 and MW-101. Recent groundwater monitoring from the 1<sup>st</sup> quarter of 2011 has indicated that concentrations reported in STMW-

3, MW-101 and MW-103 are non-detect, and STMW-1 are non-detect or below California drinking water MCLs for all analyzed constituents. It appears that the groundwater plume is limited in extent, as contaminants of concern are not present in the down gradient wells.

Previous site investigations performed by Enviro Soil Tech Consultants in 2007 and 2008 indicated that groundwater contamination had migrated north along a coarse-grained sand bed. It is GTI's opinion that the interim remedial action of hydrogen peroxide injection that included MW-101 and MW-102 will address any residual offsite contamination.

#### No water wells, deeper drinking water aquifers, surface water, or other sensitive receptors are likely to be impacted.

In March 2007, a 2000-foot receptor well survey was conducted. A total of 51 wells were located within 2,000 feet of the Site, of which 49 are monitoring wells for other contaminated sites. One domestic well and one supply well were located within 2,000 feet of the Site. The domestic well was reported to be located approximately 1950 feet southeast of the Site and the supply well was reported to be located approximately 1,400 feet southeast of the Site. Both of the reported wells appear to be located up gradient of the site, and therefore would not be expected to be impacted.

#### 5. The site presents no significant risk to human health.

The potential risk to human health for this site can be estimated by examining the various exposure pathways and beneficial uses of the soil and groundwater at the site. The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Basin Plan designates the beneficial uses of groundwater in the Livermore Valley as domestic, municipal, and industrial/agricultural supply.

- As discussed previously, the February 17, 2011 groundwater monitoring event results indicate that all monitoring wells were reported to contain levels of contaminants of concern that were below analytical reporting limits, or below drinking water MCLs (13 μg/l) and ESLs based on taste & odors (5.0 μg/l). Therefore, potential use of groundwater as a source of drinking water would not pose a significant threat to human health.
- The recent groundwater monitoring analytical data results show that the concentrations of MtBE reported to be present in STMW-1 and P1 (4.2 and 1.9  $\mu$ g/l respectively) are well below the ESL for vapor intrusion into buildings (24,000  $\mu$ g/l). Therefore, potential for vapor intrusion into buildings would not pose a significant threat to human health.
- The surface of the site is encapsulated with concrete, asphalt and structures, so the risk of dermal contact with soil or groundwater is low.

Based on the low concentrations of contaminants reported to be present in recent groundwater sampling, stability of the plume and adequate characterization of the on-site contamination GTI concludes that the site does not present a significant risk to human health.

#### 6. The site presents no significant risk to the environment.

The potential risk to the environment for this site can be estimated by examining the various beneficial uses of the soil and groundwater at the site:

• The nearest surface water is located approximately one mile west of the site, but is not likely to be impacted due to distance from the release, and recent MtBE concentrations being significantly below the ESL for aquatic habitat goal of 8,000 μg/l. Therefore, potential for impact to aquatic habitat would not pose a significant threat to the environment.

Due to the low concentrations of contaminants reported to be present in recent groundwater sampling, stability of the plume and adequate characterization of the on-site contamination GTI concludes that the site does not present a significant risk to the environment.

#### 7. CONCLUSIONS

The results of the 1<sup>st</sup> Quarter 2011 groundwater monitoring event indicate the following:

- The average groundwater elevation at the site was 511.79 feet AMSL and the groundwater flow was N54°W at a gradient of 0.008 ft/ft.
- Six of the eight monitoring wells were found to be non-detect above reporting limits for all analyzed constituents.
- Monitoring wells STMW-1 and P-1 reported to contain 4.2 ug/L and 1.9 ug/L of MTBE, respectively, which are below Environmental Screening Levels (ESLs) and California drinking water MCLs.
- Dissolved Oxygen (DO) concentrations in all eight wells sampled at the site are at historical high levels following the additional hydrogen peroxide pilot study, and Oxidation Reduction Potential (ORP) is consistent with recent data.
- The site appears to meet the criteria for low-risk closure, with no significant threat posed to human health or the environment.

#### 8. RECOMMENDATIONS

- 1. Since the site meets low risk closure criteria, Geological Technics Inc. recommends that the site be considered for low-risk closure immediately.
- 2. Pending ACEH approval, GTI proposes preparing a work plan for well abandonment activities, in preparation for site closure.
- 3. Continue groundwater monitoring until directed otherwise by ACEH.
- Impending changes within the USTCF process will result in budgetary constraints placed on all projects. To accommodate these impending changes, GTI proposes that the

groundwater monitoring and sample analysis be revised as outlined below. Please note that the reductions in frequency and constituents are based on consideration of historical data.

The current monitoring plan includes semiannual monitoring of eight groundwater monitoring wells (STMW-1, STMW-2, STMW-3, P1, MW-4, MW-101, MW-102 and MW-103).

The proposed monitoring plan would be effective for the 2011 3<sup>rd</sup> quarter semi-annual event and includes:

- Semiannual monitoring of four groundwater monitoring wells which have historically been reported to contain contaminants of concern (STMW-1, STMW-2, STMW-3, P1).
- Annual monitoring of four groundwater monitoring wells which have historically contained levels of contaminants of concern below laboratory analytical report limits (MW-4, MW-101, MW-102 and MW-103).
- Laboratory analysis is proposed to be reduced to TPH-g, MTBE and TBA for all wells.

Please note that GTI recommends reverting to the current monitoring schedule as the USTCF process permits, until such time as wells can be abandoned in preparation for site closure.

#### 9. REFERENCES

California Environmental Protection Agency "Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties", January 2005

California Regional Water Quality Control Board, San Francisco Bay Region "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final", November, 2007 (Revised May 2008).

Enviro Soil Tech Consultants "Off-site Drilling and Vapor Extraction Pilot Test at the Property Located at 909 Bluebell Drive, Livermore, California", July 1, 2008.

Geological Technics Inc. "Additional Site Characterization & Interim Remedial Action Report, Springtown Gas, 909 Bluebell Drive, Livermore, California", dated July 30, 2010.

Geological Technics Inc. "Site Conceptual Model Report December 2008 – Springtown Gas, 909 Bluebell Drive, Livermore, California", December 8, 2008.

#### 10. LIMITATIONS

This report was prepared in accordance with the generally accepted standard of care and practice in effect at the time Services were rendered. It should be recognized that definition and evaluation of environmental conditions is an inexact science and that the state or practice of environmental geology/hydrology is changing and evolving and that standards existing at the present time may change as knowledge increases and the state of the practice continues to improve. Further, that differing subsurface soil characteristics can be experienced within a small distance and therefore cannot be known in an absolute sense. All conclusions and recommendations are based on the available data and information.

The tasks proposed and completed during this project were reviewed and approved by the local regulatory agency for compliance with the law. No warranty, expressed or implied, is made.

#### 11. CERTIFICATION

This report was prepared by:

Andrew Dorn, B.Sc. Geology

This report was prepared under the direction of:

Tamorah Bryant, P.E.

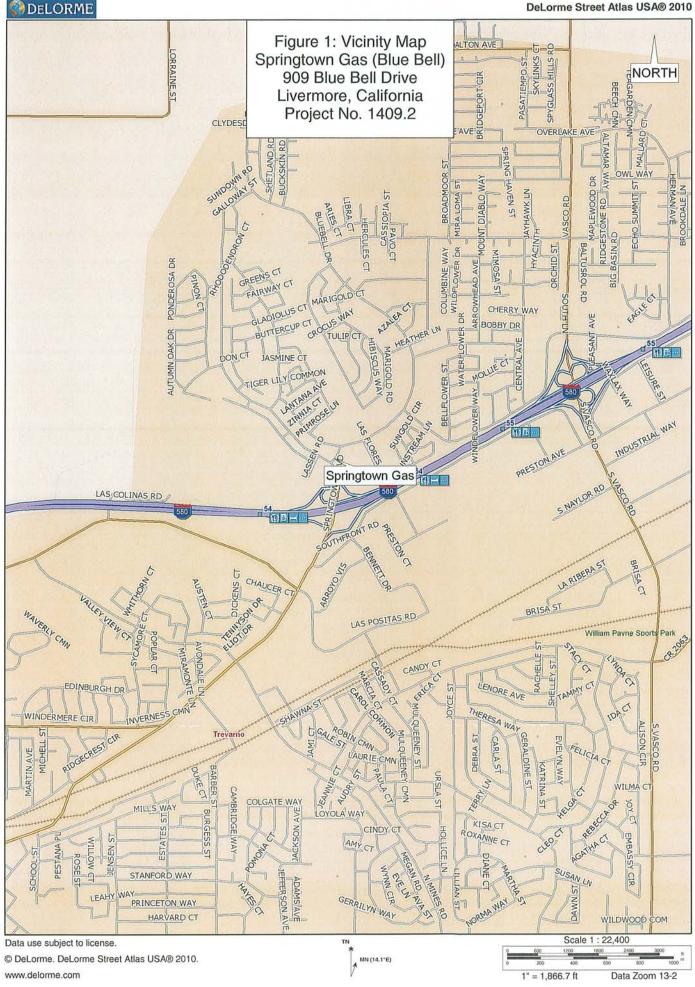
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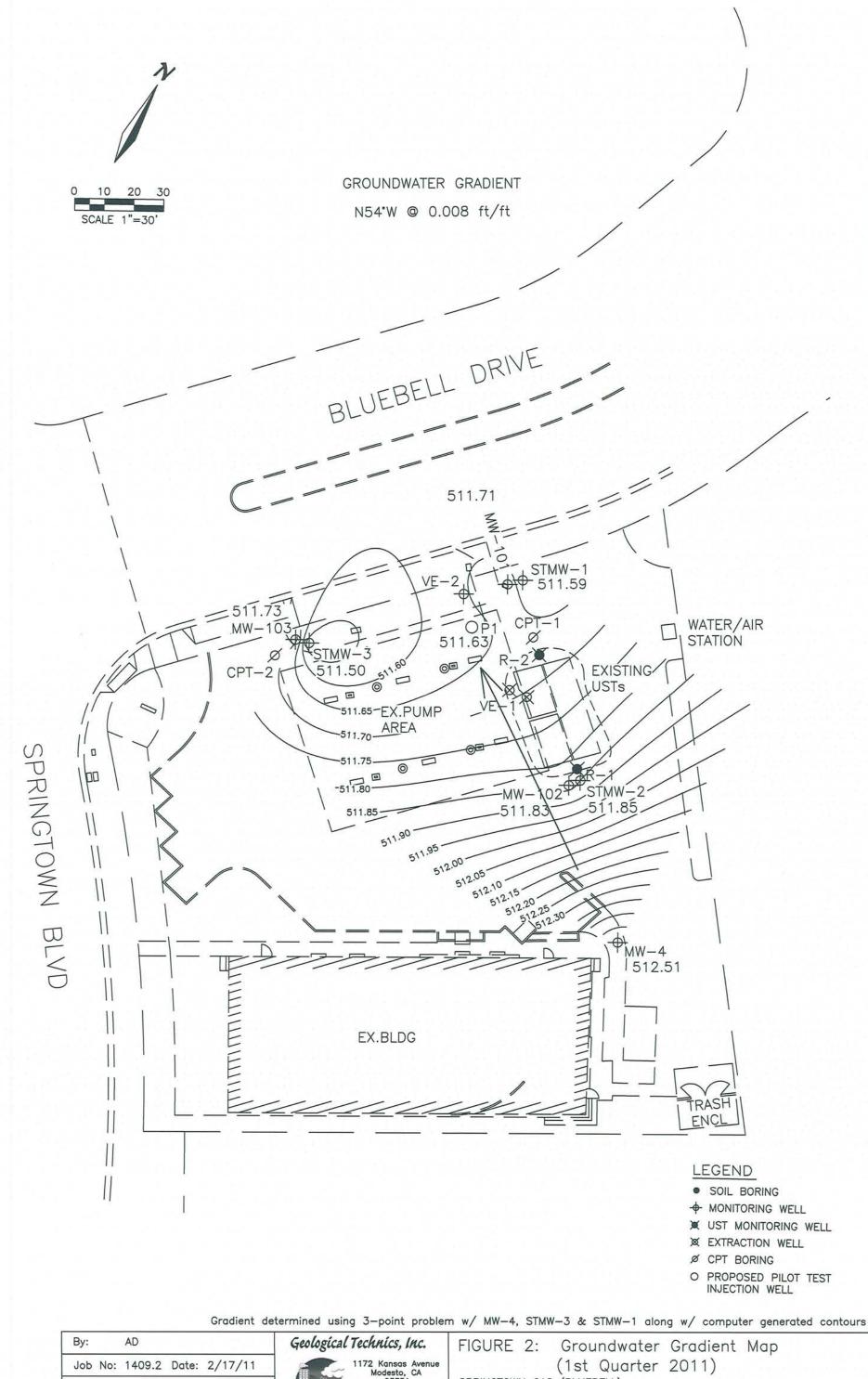
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CIVIL BUILT

OF CALIFORNIA





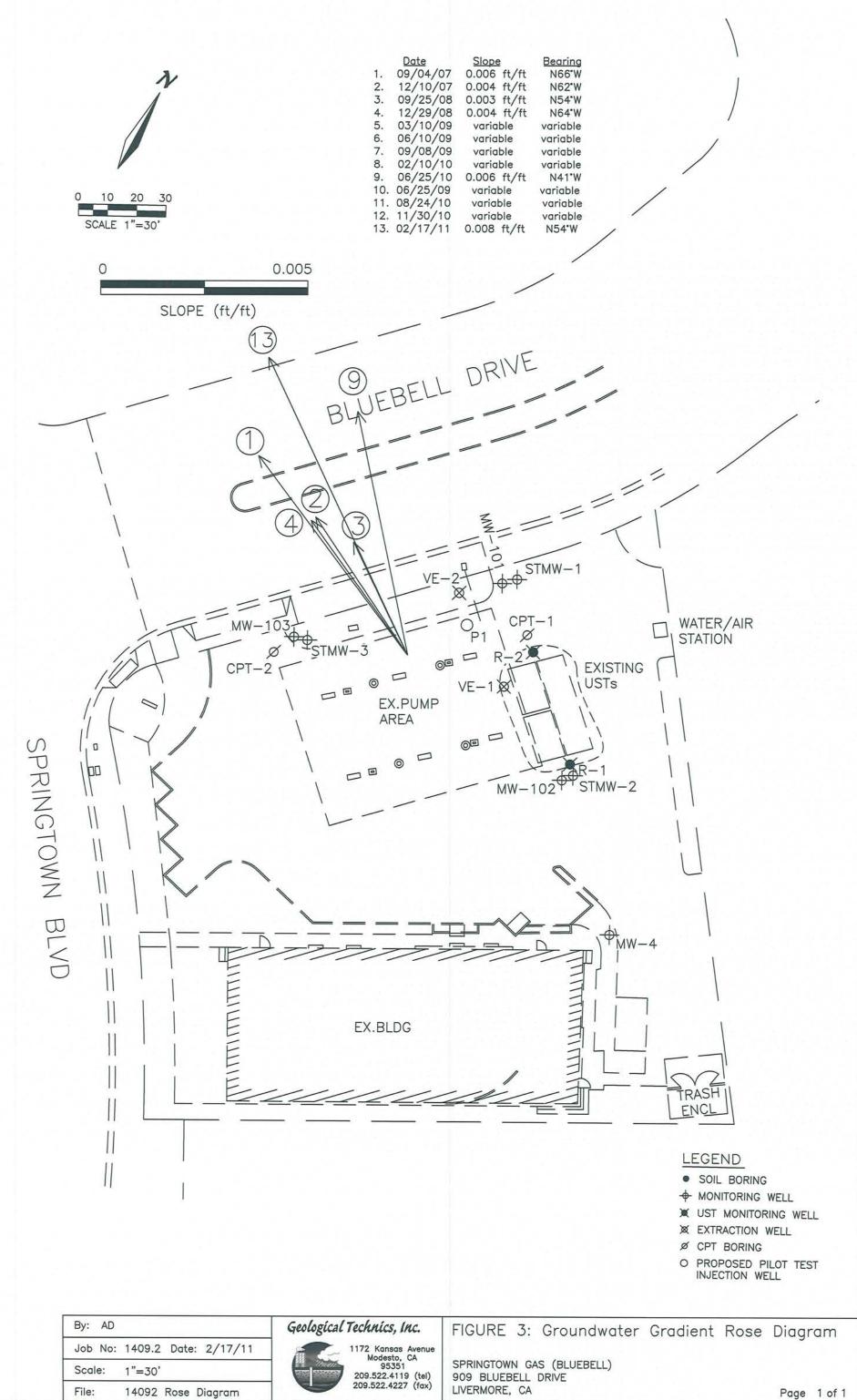
1172 Kansas Avenue Modesto, CA 95351 SPRINGTOWN GAS (BLUEBELL) Scale: 1"=30" 209.522.4119 (tel) 209.522.4227 (fax) 909 BLUEBELL DRIVE

File:

14092 GWG Contour

LIVERMORE, CA

Page 1 of 1



LIVERMORE, CA

File: 14092 Rose Diagram

Appendix A

**Summary Tables** 

# Table 1 Summary of Groundwater Elevation

Springtown Gas 909 Bluebell Drive Livermore, California

Date		STMW-1	STMW1	STMW-2	STMW2	STMW-3	STMW3	P-1	P-1	MW-4	MW-4	MW-101	MW-101	MW-102	MW-102	MW-103	MW-103	Avg GW	AVG GW	GW (	Gradient
		GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	Elev	DTW	Slope	Direction
	top of casing*	517.55		519.59		520.37		518.93		521.98		518.42		520.13		520.07				ft/ft	
9/4/2007		510.97	6.58	511.59	8.00	510.85	9.52		2		10							511.14		0.006	N66°W
12/10/2007		511.29	6.26	511.59	8.00	511.25	9.12	-	-			-			-			511.38	-	0.008	N62°W
9/25/2008		510.69	6.86	510.9	8.69	510.65	9.72		2		Ya Ya							510.75			
11/20/2008		510.81	6.74	511.17	8.42	510.82	9.55	-					-	-		-	-	510.75	-	0.003	N54°W N60°W
12/29/2008		511.60	5.95	511.9	7.69	511.50	8.87			11-1-1-1								511.67		0.004	N64°W
3/10/2009		512.60	4.95	512.99	6.60	512.44	7.93	513.20	5.73	- 1		- 1		- 1	-	- 1		512.81	6.30	variable	variable
6/10/2009		510.90	6.65	511.21	8.38	510.84	9.53	511.50	7.43					-	*	-	98	511.11	8.00	variable	variable
9/8/2009		510.62	6.93	510.78	8.81	510.59	9.78	511.17	7.76		(in					Tw.	12	510.79	8.32	variable	variable
2/10/2010		512.39	5.16	512.68	6.91	512.00	8.37	512.95	5.98		180	- 1	-	-		2	1/4	512.51	6.61	variable	variable
6/25/2010		511.19	6.36	511.43	8.16	511.06	9.31	511.73	7.20	512.09	9.89	511.36	7.06	511.47	8.66	511.38	8.69	511.46	8.17	variable	variable
8/24/2010		511.15	6.40	511.38	8.21	511.01	9.36	510.72	8.21	511.98	10.00	511.21	7.21	511.31	8.82	511.23	8.84	511.25	8.38	variable	variable
11/30/2010		511.48	6.07	511.72	7.87	511.21	9.16	511.93	7.00	512.37	9.61	511.47	6.95	511.58	8.55	511.50	8.57	511.66	7.97	variable	variable
2/17/2011		511.59	5.96	511.85	7.74	511.50	8.87	511.63	7.30	512.51	9.47	511.71	6.71	511.83	8.30	511.73	8.34	511.79	7.84	0.008	N54°W
				14. 12. 1													Historical	511.48	7.70	0.005	N60°W

<sup>\*</sup>TOC elevations surveyed on 9/06/07 by Muir Consutling Inc. for wells STMW-1, 2, 3, & P-1 NAD 83 and NGVD 29

<sup>\*</sup>TOC elevations surveyed on 7/08/10 by Benchmark Engineering for wells MW-101, 102, 103, & MW-4

<sup>\*\*</sup>Gradient and slope determined from computer generated contours

<sup>\*\*\*</sup>Gradient calculated using 3-point problem w/ MW-4, STMW-1 and STMW-3 as of 2/17/11

<sup>&</sup>quot;-" Well P-1 not surveyed until 2/03/09

#### Table 2 **Summary of Groundwater Analytical Data**

Springtown Gas 909 Bluebell Drive Livermore, California

IONITORING WELL	Date	TPHg	В	Т	E	х	MtBE	TBA	DIPE	EtBE	TAME	1,2-DCA	EDB	Methanol	Ethai
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug
STMW-1	9/4/2007	220	<10	<10	<10	<10	850	6,500		-		-		72	
	12/10/2007	210	<5	<5	<5	<5	540	4,200						-	
	9/25/2008	230	<0.5	<0.5	<0.5	<1.0	204	704	<0.5	<0.5	0.6	<0.5	<0.5	<5	<20
	11/20/2008	<50	<0.5	<0.5	<0.5	<1.0	14	930	<0.5	<0.5	<0.5	-	-	-	
	12/29/2008	<50	<0.5	<0.5	<0.5	<1.0	15	1,000	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	3/10/2009	<50	<0.5	<0.5	<0.5	<1.0	29	3,000	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	6/10/2009	<50	<0.5	<0.5	<0.5	<1.0	60	3,800	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	9/8/2009	<50	<0.5	<0.5	<0.5	<1.0	52	190	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<
	2/10/2010	<50	<0.5	<0.5	<0.5	<1.0	32	28	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<
	6/25/2010		1 05	1 05	1 05	1	1		sampled						
	8/24/2010 11/30/2010	<50	<0.5	<0.5	<0.5	<1.0	5.9	87	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	4.2	<5	sampled <0.5	<0.5	<0.5	<0.5	<0.5	<50	<
0710110	0/4/0007				-										
STMW-2	9/4/2007	<50	<0.5	<0.5	<0.5	<0.5	<1	42	-	-					
	12/10/2007	<50	<0.5	<0.5	<0.5	<0.5	<1	83				-	-	-	-
	9/25/2008 11/20/2008	<50 <b>90</b>	<0.5 1.7	<0.5	<0.5	<1	<0.5	71	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<2
	12/29/2008	<50	1000000	6.9 <0.5	1.7	7.6	2.2	190	<0.5	<0.5	<0.5			-	-
	3/10/2009	<50 <50	<0.5 <0.5	<0.5	<0.5 <0.5	<1.0 <1.0	<0.5	56	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<
	6/10/2009	<50 <50	<0.5	<0.5	<0.5		1.5	96	<0.5	<0.5	<0.5	<0.5	<0.5	<50 -50	<
	9/8/2009	<50 <50	<0.5	<0.5	<0.5	<1.0 <1.0	1.1 <0.5	43 45	<0.5 <0.5	<0.5	<0.5	<0.5	<0.5	<50	<
	2/10/2010	<50 <50	<0.5	<0.5	<0.5		1 1 1 1 1		<0.5	<0.5	<0.5	<0.5	<0.5	<50	<
	6/25/2010	<b>1 1 3 0</b>	<b>VO.5</b>	<0.5	\ \cdot 0.5	<1.0	<0.5	110	The second secon	<0.5	<0.5	<0.5	<0.5	<50	<
	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	33	sampled <0.5	<0.5	<0.5	<0.5 I	<0.5	<50 I	<
	11/30/2010	0.3638.0						Not s	ampled			40.0	40.0		
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<
STMW-3	9/4/2007	59	<1	<1	<1	<1	160	120		9-1	-			-	
	12/10/2007	<50	<0.5	<0.5	<0.5	<0.5	17	86	-		12	2	124		72
	9/25/2008	<50	<0.5	<0.5	<0.5	<0.5	67	31.7	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<2
	11/20/2008	<50	<0.5	<0.5	<0.5	<1.0	12	<5	<0.5	<0.5	<0.5	4			
	12/29/2008	<50	<0.5	<0.5	<0.5	<1.0	2.2	<5.	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<
	3/10/2009	<50	<0.5	<0.5	<0.5	<1.0	3	95	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<
	6/10/2009	<50	<0.5	<0.5	<0.5	<1.0	8.3	45	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	9/8/2009	<50	<0.5	<0.5	<0.5	<1.0	11	29	<0.5	<0.5	<0.5	<0.5	< 0.5	<50	</td
- 1	2/10/2010	<50	<0.5	<0.5	<0.5	<1.0	44	610	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	6/25/2010								ampled						
	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	ND<0.5	1. 1. 1.	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	11/30/2010 2/17/2011	<50 I	<0.5	<0.5	<0.5	<1.0	<50	Not s	ampled <0.5	<0.5 I	<0.5	<0.5 <b>I</b>	<0.5	<50	</td
									40.0	40.0	40.0	40.0	40.0	<b>\</b> 30	
P1	11/20/2008	<50	<5	<5	<5	<10	180	2,300	<5	<5	<5			-	
	12/29/2008	<50	<0.5	<0.5	<0.5	<1.0	120	3,900	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<:
	3/10/2009	<50	<0.5	<0.5	<0.5	<1.0	240	9,300	<0.5	<0.5	<0.5	<0.5	<0.5	<50	</td
	6/10/2009	<50	<0.5	<0.5	<0.5	<1.0	250	6,300	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
1	9/8/2009	<250	<2.5	<2.5	<2.5	<5	180	2,900	<2.5	<2.5	<2.5	<2.5	<2.5	<250	<2
- 1	2/10/2010	<250	<2.5	<2.5	<2.5	<5	110	5,200	<2.5	<2.5	<2.5	<2.5	<2.5	<250	<2
- 1	6/25/2010 8/24/2010	<50 <b>I</b>	<0.5	-0 F I	-OF	1 -10	1 -, 1	The second secon	ampled		0.5			•	
	11/30/2010	<50	<0.5	<0.5	<0.5	<1.0	5.4	120 Not s	<0.5   ampled	<0.5	<0.5	<0.5	<0.5	<50	<
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	1.9	ND<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
MW-4	6/25/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	
608359) B/	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50 <50	<
	11/30/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50 <50	<5 <5
	2/17/2011	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
MW-101	6/25/2010	<50	<0.5	-O.E	-OF	-10	-0.5	-	2.5		2.5	2.5			
MIN-101	8/24/2010	<50 <50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<
	11/30/2010	<50 <50	<0.5	<0.5 <0.5	<0.5 <0.5	<1.0	<0.5	<5 <5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	2/17/2011	<50 <50	<0.5	<0.5	<0.5	<1.0 <1.0	<0.5 <0.5	<5 <5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<50 <50	<5 <5
						11.0	-5.0			10.0	VO.0	ZU.0	<b>\U.</b> 5	<00	<5
MW-102	6/25/2010	<50 -50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
111111111	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	11/30/2010 2/17/2011	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1.0 <1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
Market St. II	211/2011	200	<b>\U.</b> 0.0	<0.5	<0.0	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
MW-103	6/25/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
	8/24/2010	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5
		137507						12550	200	1000					1000
	11/30/2010 2/17/2011	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1.0 <1.0	<0.5 <0.5	<5 <5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<5

Total petroleum hydrocarbons as gasoline Total petroleum hydrocarbon:

TPHd

B T E X MtBE TBA DIPE EtBE TAME 1,2-DCA EDB bgs ug/I Benzene Toluene
Ethylbenzene
Total xylenes
Methyl tertiary butyl ether
Tert-butyl alcohol
Di-isopropyl ether
Ethyl-tertiary butyl ether
Tert-amyl-methyl ether
1,2-Dichloroethane
1,2-Dibromoethane
below ground surface
micrograms per liter
Not analyzed or not reported Toluene

## Table 3 Summary of Water Quality Parameter Data

Springtown Gas 909 Bluebell Drive Livermore, California

Monitoring Well			STI	ИW-1					STN	IW-2		STMW-3							
Date	рН	E.C.	°C	°F	ORP	DO	pН	E.C.	°C	°F	ORP	DO	pH	E.C.	°C	°F	ORP	DO	
9/4/2007	6.37	1462	21.40	70.5	NM	NM	6.43	1405	21.1	70.0	NM	NM	6.14	2115	20	68.0	NM	NM	
12/10/2007	6.92	1090	18.50	65.3	NM	NM	7.02	1074	19.8	67.6	NM	NM	6.77	1267	NM	NM	NM	NM	
9/25/2008	7.22	1706	21.63	70.9	48.3	0.38	7.15	1652	21.26	70.3	34	0.7	6.84	1838	20.32	68.6	60.2	0.84	
10/2/2008	7.16	1701	21.57	70.8	45.6	0.68	7.07	1650	21.14	70.1	51.8	0.58	6.82	1892	20.47	68.8	156	1.81	
10/9/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
10/16/2008	7.53	970	21.48	70.7	71.6	36.39	7.07	1611	21.35	70.4	56.7	0.21	7.38	656	20.64	69.2	66.6	37.4	
10/23/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
10/30/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
11/6/2008	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
11/20/2008	7.36	1554	20.74	69.3	208.3	11.17	7.20	1782	21.21	70.2	211.4	1.13	7.88	771	20.63	69.1	194.6	15.53	
12/29/2008	7.78	1685	18.61	65.5	168.8	41.24	7.64	1577	20.21	68.4	66.9	2.04	7.55	1196	19.69	67.4	141.5	32.54	
3/10/2009	7.23	1861	16.14	61.05	401.3	20.56	7.31	1600	17.94	64.3	372.9	0.67	7.10	1555	17.29	63.1	509.3	7.17	
6/10/2009	7.24	1624	18.76	65.77	469.2	12.69	7.30	1548	18.58	65.4	348.7	0.38	7.08	1476	17.97	64.3	557.5	2.17	
9/8/2009	7.07	NM	21.66	71.0	544.3	NM	7.22	NM	20.88	69.6	250.1	NM	6.83	NM	20.15	68.3	564.2	NM	
2/10/2010	7.35	1660	17.09	62.8	531.3	6.77	7.30	1618	18.71	65.7	394.4	0.87	7.20	1642	17.99	64.4	469.0	0.89	
6/25/2010	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
8/24/2010	6.44	707	20.79	69.4	195.7	43.37	6.32	1730	20.45	68.8	135.9	0.53	6.61	384	20.10	68.2	255.2	45.92	
11/30/2010	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
2/17/2011	8.10	365	17.55	63.6	241.3	44.57	NM	NM	NM	NM	NM	NM	8.14	241	18.21	64.8	249	39.47	
Monitoring Well			F	P-1					VE	-1				VE	-2				
Date	рН	E.C.	l °C	°F	ORP	DO	рН	F 0	0.0	OF	ODD	200			,	_			
0/1/0000		L			On	DO	рп	E.C.	°C	°F	ORP	DO	pH	E.C.	°C	°F	ORP	DO	
9/4/2007	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	PH NM	NM	°C NM	°F NM	ORP NM	DO NM	
9/4/2007 12/10/2007								2753723			THE PARTY OF THE P			-			-		
	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
12/10/2007	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM	
12/10/2007 9/25/2008	NM NM 7.2	NM NM 1941	NM NM 20.59	NM NM 69.1	NM NM 50.3	NM NM 1.19	NM NM 6.9	NM NM 2072	NM NM 22.8	NM NM 73.0	NM NM -44.9	NM NM 3.07	NM NM 7.1	NM NM 1933	NM NM 21.67	NM NM 71.0	NM NM -13.6	NM NM 6.48	
12/10/2007 9/25/2008 10/2/2008	NM NM 7.2 7.1	NM NM 1941 1893	NM NM 20.59 20.44	NM NM 69.1 68.8	NM NM 50.3 59.6	NM NM 1.19 1.18	NM NM 6.9 7.18	NM NM 2072 1780	NM NM 22.8 22.02	NM NM 73.0 71.6	NM NM -44.9 2.1	NM NM 3.07 8.29	NM NM 7.1	NM NM 1933 NM	NM NM 21.67 NM	NM NM 71.0 NM	NM NM -13.6 NM	NM NM 6.48 NM	
12/10/2007 9/25/2008 10/2/2008 10/9/2008	NM NM 7.2 7.1 NM	NM NM 1941 1893 NM	NM NM 20.59 20.44 NM	NM NM 69.1 68.8 NM	NM NM 50.3 59.6 NM	NM NM 1.19 1.18 NM	NM NM 6.9 7.18 NM	NM NM 2072 1780 NM	NM NM 22.8 22.02 NM	NM NM 73.0 71.6 NM	NM NM -44.9 2.1 NM	NM NM 3.07 8.29 NM	NM NM 7.1 NM NM	NM NM 1933 NM NM	NM NM 21.67 NM NM	NM NM 71.0 NM NM	NM NM -13.6 NM NM	NM NM 6.48 NM NM	
12/10/2007 9/25/2008 10/2/2008 10/9/2008 10/16/2008	NM NM 7.2 7.1 NM 7.75	NM NM 1941 1893 NM 1285	NM NM 20.59 20.44 NM 20.61	NM NM 69.1 68.8 NM 69.1	NM NM 50.3 59.6 NM 85.9	NM NM 1.19 1.18 NM 18.23	NM NM 6.9 7.18 NM 6.84	NM NM 2072 1780 NM 1668	NM NM 22.8 22.02 NM 22.29	NM NM 73.0 71.6 NM 72.1	NM NM -44.9 2.1 NM 3.3	NM NM 3.07 8.29 NM 1.53	NM NM 7.1 NM NM 7.16	NM NM 1933 NM NM 1912	NM NM 21.67 NM NM 21.38	NM NM 71.0 NM NM 70.5	NM NM -13.6 NM NM -1.1	NM NM 6.48 NM NM 7.25	
12/10/2007 9/25/2008 10/2/2008 10/9/2008 10/16/2008 10/23/2008	NM NM 7.2 7.1 NM 7.75 NM	NM NM 1941 1893 NM 1285 NM	NM NM 20.59 20.44 NM 20.61	NM NM 69.1 68.8 NM 69.1 NM	NM NM 50.3 59.6 NM 85.9 NM	NM NM 1.19 1.18 NM 18.23 NM	NM NM 6.9 7.18 NM 6.84 NM	NM NM 2072 1780 NM 1668 NM	NM NM 22.8 22.02 NM 22.29 NM	NM NM 73.0 71.6 NM 72.1 NM	NM NM -44.9 2.1 NM 3.3 NM	NM NM 3.07 8.29 NM 1.53 NM	NM NM 7.1 NM NM 7.16 7.42	NM NM 1933 NM NM 1912 1924	NM NM 21.67 NM NM 21.38 19.91	NM NM 71.0 NM NM 70.5 67.8	NM NM -13.6 NM NM -1.1 49.6	NM NM 6.48 NM NM 7.25 8.48	
12/10/2007 9/25/2008 10/2/2008 10/9/2008 10/16/2008 10/23/2008 10/30/2008	NM NM 7.2 7.1 NM 7.75 NM	NM NM 1941 1893 NM 1285 NM	NM NM 20.59 20.44 NM 20.61 NM NM	NM NM 69.1 68.8 NM 69.1 NM	NM NM 50.3 59.6 NM 85.9 NM NM	NM NM 1.19 1.18 NM 18.23 NM	NM NM 6.9 7.18 NM 6.84 NM	NM NM 2072 1780 NM 1668 NM	NM NM 22.8 22.02 NM 22.29 NM NM	NM NM 73.0 71.6 NM 72.1 NM	NM NM -44.9 2.1 NM 3.3 NM NM	NM NM 3.07 8.29 NM 1.53 NM	NM NM 7.1 NM NM 7.16 7.42 7.81	NM 1933 NM NM 1912 1924 1052	NM NM 21.67 NM NM 21.38 19.91 20.05	NM NM 71.0 NM NM 70.5 67.8 68.1	NM NM -13.6 NM NM -1.1 49.6 164.0	NM NM 6.48 NM NM 7.25 8.48	
12/10/2007 9/25/2008 10/2/2008 10/9/2008 10/16/2008 10/23/2008 10/30/2008 11/6/2008	NM NM 7.2 7.1 NM 7.75 NM NM	NM NM 1941 1893 NM 1285 NM NM	NM NM 20.59 20.44 NM 20.61 NM NM	NM NM 69.1 68.8 NM 69.1 NM NM	NM NM 50.3 59.6 NM 85.9 NM NM	NM NM 1.19 1.18 NM 18.23 NM NM	NM NM 6.9 7.18 NM 6.84 NM NM	NM NM 2072 1780 NM 1668 NM NM	NM NM 22.8 22.02 NM 22.29 NM NM NM	NM 73.0 71.6 NM 72.1 NM NM	NM NM -44.9 2.1 NM 3.3 NM NM	NM NM 3.07 8.29 NM 1.53 NM NM	NM NM 7.1 NM NM 7.16 7.42 7.81 7.13	NM 1933 NM NM 1912 1924 1052 1329	NM NM 21.67 NM NM 21.38 19.91 20.05 19.94	NM NM 71.0 NM NM 70.5 67.8 68.1 67.9	NM NM -13.6 NM NM -1.1 49.6 164.0 183.5	NM NM 6.48 NM NM 7.25 8.48 172.1	
12/10/2007 9/25/2008 10/2/2008 10/9/2008 10/16/2008 10/23/2008 10/30/2008 11/6/2008 11/20/2008	NM NM 7.2 7.1 NM 7.75 NM NM NM 7.99	NM NM 1941 1893 NM 1285 NM NM NM	NM NM 20.59 20.44 NM 20.61 NM NM NM 19.96	NM NM 69.1 68.8 NM 69.1 NM NM NM	NM NM 50.3 59.6 NM 85.9 NM NM NM	NM NM 1.19 1.18 NM 18.23 NM NM NM NM	NM NM 6.9 7.18 NM 6.84 NM NM NM NM 6.99	NM NM 2072 1780 NM 1668 NM NM NM	NM NM 22.8 22.02 NM 22.29 NM NM NM	NM NM 73.0 71.6 NM 72.1 NM NM NM NM	NM NM -44.9 2.1 NM 3.3 NM NM NM NM	NM NM 3.07 8.29 NM 1.53 NM NM NM	NM NM 7.1 NM NM 7.16 7.42 7.81 7.13 6.89	NM 1933 NM NM 1912 1924 1052 1329 1593	NM NM 21.67 NM NM 21.38 19.91 20.05 19.94 19.47	NM NM 71.0 NM NM 70.5 67.8 68.1 67.9 67.0	NM NM -13.6 NM NM -1.1 49.6 164.0 183.5 224.5	NM NM 6.48 NM NM 7.25 8.48 172.1 9.77	
12/10/2007 9/25/2008 10/2/2008 10/9/2008 10/16/2008 10/23/2008 10/30/2008 11/6/2008 11/6/2008 11/20/2008 12/29/2008	NM NM 7.2 7.1 NM 7.75 NM NM NM 7.99 7.99	NM NM 1941 1893 NM 1285 NM NM NM 1392 1766	NM NM 20.59 20.44 NM 20.61 NM NM NM 19.96	NM NM 69.1 68.8 NM 69.1 NM NM NM 67.9 66.2	NM NM 50.3 59.6 NM 85.9 NM NM NM 180 285.5	NM NM 1.19 1.18 NM 18.23 NM NM NM NM 8.19	NM NM 6.9 7.18 NM 6.84 NM NM NM NM 6.99	NM NM 2072 1780 NM 1668 NM NM NM 1960 NM	NM NM 22.8 22.02 NM 22.29 NM NM NM 18.91	NM NM 73.0 71.6 NM 72.1 NM NM NM 66.0	NM NM -44.9 2.1 NM 3.3 NM NM NM NM 38.6	NM NM 3.07 8.29 NM 1.53 NM NM NM 4.82	NM NM 7.1 NM NM 7.16 7.42 7.81 7.13 6.89 NM	NM NM 1933 NM NM 1912 1924 1052 1329 1593 NM	NM NM 21.67 NM NM 21.38 19.91 20.05 19.94 19.47 NM	NM NM 71.0 NM NM 70.5 67.8 68.1 67.9 67.0 NM	NM NM -13.6 NM NM -1.1 49.6 164.0 183.5 224.5 NM	NM NM 6.48 NM 7.25 8.48 172.1 9.77 9.09	
12/10/2007 9/25/2008 10/2/2008 10/9/2008 10/16/2008 10/23/2008 10/30/2008 11/6/2008 11/20/2008 11/20/2008 12/29/2008 3/10/2009	NM NM 7.2 7.1 NM 7.75 NM NM NM 7.99 7.99 7.30	NM NM 1941 1893 NM 1285 NM NM 1392 1766 1797	NM NM 20.59 20.44 NM 20.61 NM NM NM 19.96 18.99	NM NM 69.1 68.8 NM 69.1 NM NM NM 67.9 66.2 62.26	NM NM 50.3 59.6 NM 85.9 NM NM NM 180 285.5 473.9	NM NM 1.19 1.18 NM 18.23 NM NM NM 8.19 43.92 3.03	NM NM 6.9 7.18 NM 6.84 NM NM NM 6.99 NM NM	NM NM 2072 1780 NM 1668 NM NM NM 1960 NM	NM NM 22.8 22.02 NM 22.29 NM NM NM 18.91 NM	NM NM 73.0 71.6 NM 72.1 NM NM NM 66.0 NM	NM NM -44.9 2.1 NM 3.3 NM NM NM 38.6 NM	NM NM 3.07 8.29 NM 1.53 NM NM NM 4.82 NM	NM NM 7.1 NM NM 7.16 7.42 7.81 7.13 6.89 NM NM	NM NM 1933 NM NM 1912 1924 1052 1329 1593 NM NM	NM NM 21.67 NM NM 21.38 19.91 20.05 19.94 19.47 NM NM	NM NM 71.0 NM NM 70.5 67.8 68.1 67.9 67.0 NM NM	NM NM -13.6 NM NM -1.1 49.6 164.0 183.5 224.5 NM	NM NM 6.48 NM 7.25 8.48 172.1 9.77 9.09 NM	
12/10/2007 9/25/2008 10/2/2008 10/9/2008 10/16/2008 10/23/2008 10/30/2008 11/6/2008 11/6/2008 11/20/2008 12/29/2008 3/10/2009 6/10/2009	NM NM 7.2 7.1 NM 7.75 NM NM NM 7.99 7.99 7.30 7.34	NM NM 1941 1893 NM 1285 NM NM NM 1392 1766 1797 1795	NM NM 20.59 20.44 NM 20.61 NM NM 19.96 18.99 16.81 17.85	NM NM 69.1 68.8 NM 69.1 NM NM 67.9 66.2 62.26 64.13	NM NM 50.3 59.6 NM 85.9 NM NM 180 285.5 473.9	NM NM 1.19 1.18 NM 18.23 NM NM NM 8.19 43.92 3.03 1.09	NM NM 6.9 7.18 NM 6.84 NM NM NM NM 6.99 NM NM	NM NM 2072 1780 NM 1668 NM NM NM 1960 NM	NM NM 22.8 22.02 NM 22.29 NM NM NM 18.91 NM NM	NM NM 73.0 71.6 NM 72.1 NM NM NM 66.0 NM	NM NM -44.9 2.1 NM 3.3 NM NM NM 38.6 NM	NM NM 3.07 8.29 NM 1.53 NM NM NM 4.82 NM	NM NM 7.1 NM NM 7.16 7.42 7.81 7.13 6.89 NM NM	NM NM 1933 NM NM 1912 1924 1052 1329 1593 NM NM	NM NM 21.67 NM NM 21.38 19.91 20.05 19.94 19.47 NM NM	NM NM 71.0 NM NM 70.5 67.8 68.1 67.9 67.0 NM NM	NM NM -13.6 NM NM -1.1 49.6 164.0 183.5 224.5 NM NM	NM NM 6.48 NM 7.25 8.48 172.1 9.77 9.09 NM NM	
12/10/2007 9/25/2008 10/2/2008 10/9/2008 10/16/2008 10/16/2008 10/30/2008 11/6/2008 11/6/2008 11/20/2008 12/29/2008 3/10/2009 9/8/2009	NM NM 7.2 7.1 NM 7.75 NM NM 7.99 7.99 7.30 7.34 7.14	NM NM 1941 1893 NM 1285 NM NM NM 1392 1766 1797 1795 NM	NM NM 20.59 20.44 NM 20.61 NM NM 19.96 18.99 16.81 17.85 19.98	NM NM 69.1 68.8 NM 69.1 NM NM 67.9 66.2 62.26 64.13 68.0	NM NM 50.3 59.6 NM 85.9 NM NM 180 285.5 473.9 455.7 312.2	NM NM 1.19 1.18 NM 18.23 NM NM NM 8.19 43.92 3.03 1.09	NM NM 6.9 7.18 NM 6.84 NM NM NM 6.99 NM NM NM	NM NM 2072 1780 NM 1668 NM NM NM 1960 NM NM	NM NM 22.8 22.02 NM 22.29 NM NM NM 18.91 NM NM	NM NM 73.0 71.6 NM 72.1 NM NM 66.0 NM NM MM	NM NM -44.9 2.1 NM 3.3 NM NM NM 38.6 NM NM	NM NM 3.07 8.29 NM 1.53 NM NM 4.82 NM NM 4.82 NM	NM NM 7.1 NM NM 7.16 7.42 7.81 7.13 6.89 NM NM NM	NM NM 1933 NM NM 1912 1924 1052 1329 1593 NM NM NM	NM NM 21.67 NM NM 21.38 19.91 20.05 19.94 19.47 NM NM NM	NM NM 71.0 NM 70.5 67.8 68.1 67.9 67.0 NM NM NM	NM NM -13.6 NM NM -1.1 49.6 164.0 183.5 224.5 NM NM NM	NM NM 6.48 NM 7.25 8.48 172.1 9.77 9.09 NM NM NM	
12/10/2007 9/25/2008 10/2/2008 10/9/2008 10/16/2008 10/16/2008 10/30/2008 11/6/2008 11/20/2008 11/20/2008 12/29/2008 3/10/2009 9/8/2009 2/10/2010	NM NM 7.2 7.1 NM 7.75 NM NM 7.99 7.99 7.30 7.34 7.14 7.42	NM NM 1941 1893 NM 1285 NM NM 1392 1766 1797 1795 NM	NM NM 20.59 20.44 NM 20.61 NM NM 19.96 18.99 16.81 17.85 19.98	NM NM 69.1 68.8 NM 69.1 NM NM 67.9 66.2 62.26 64.13 68.0 63.0	NM NM 50.3 59.6 NM 85.9 NM NM 180 285.5 473.9 455.7 312.2	NM NM 1.19 1.18 NM 18.23 NM NM NM 8.19 43.92 3.03 1.09 NM 0.85	NM NM 6.9 7.18 NM 6.84 NM NM NM 6.99 NM NM NM NM NM	NM NM 2072 1780 NM 1668 NM NM NM 1960 NM NM NM NM	NM NM 22.8 22.02 NM 22.29 NM NM NM 18.91 NM NM NM	NM NM 73.0 71.6 NM 72.1 NM NM 66.0 NM NM NM	NM NM -44.9 2.1 NM 3.3 NM NM NM NM NM NM NM NM NM NM	NM NM 3.07 8.29 NM 1.53 NM NM 4.82 NM NM 4.82 NM NM	NM NM 7.1 NM 7.16 7.42 7.81 7.13 6.89 NM NM NM NM	NM NM 1933 NM NM 1912 1924 1052 1329 1593 NM NM NM NM	NM NM 21.67 NM NM 21.38 19.91 20.05 19.94 19.47 NM NM NM	NM NM 71.0 NM 70.5 67.8 68.1 67.9 67.0 NM NM NM NM	NM NM -13.6 NM NM -1.1 49.6 164.0 183.5 224.5 NM NM NM NM	NM NM 6.48 NM 7.25 8.48 172.1 9.77 9.09 NM NM NM	
12/10/2007 9/25/2008 10/2/2008 10/9/2008 10/16/2008 10/30/2008 10/30/2008 11/6/2008 11/20/2008 11/20/2008 3/10/2009 9/8/2009 2/10/2010 6/25/2010	NM NM 7.2 7.1 NM 7.75 NM NM 7.99 7.99 7.30 7.34 7.14 7.42 NM	NM NM 1941 1893 NM 1285 NM NM NM 1392 1766 1797 1795 NM 1658	NM NM 20.59 20.44 NM 20.61 NM NM 19.96 16.81 17.85 19.98 17.22 NM	NM NM 69.1 68.8 NM 69.1 NM NM 67.9 66.2 62.26 64.13 68.0 63.0 NM	NM NM 50.3 59.6 NM 85.9 NM NM 180 285.5 473.9 455.7 312.2 139.0 NM	NM NM 1.19 1.18 NM 18.23 NM NM 8.19 43.92 3.03 1.09 NM 0.85	NM NM 6.9 7.18 NM 6.84 NM NM 6.99 NM NM NM NM NM NM	NM NM 2072 1780 NM 1668 NM NM 1960 NM NM NM NM	NM NM 22.8 22.02 NM 22.29 NM NM 18.91 NM NM NM NM NM NM	NM NM 73.0 71.6 NM 72.1 NM NM NM 66.0 NM NM NM NM NM	NM NM -44.9 2.1 NM 3.3 NM NM NM NM NM NM NM NM NM NM NM NM NM	NM NM 3.07 8.29 NM 1.53 NM NM NM 4.82 NM NM NM	NM NM 7.1 NM 7.16 7.42 7.81 7.13 6.89 NM NM NM NM	NM NM 1933 NM NM 1912 1924 1052 1329 1593 NM NM NM NM	NM NM 21.67 NM 21.38 19.91 20.05 19.94 19.47 NM NM NM NM NM	NM NM 71.0 NM 70.5 67.8 68.1 67.9 67.0 NM NM NM NM	NM NM -13.6 NM NM -1.1 49.6 164.0 183.5 224.5 NM NM NM NM NM	NM NM 6.48 NM NM 7.25 8.48 172.1 9.77 9.09 NM NM NM NM	

Monitoring Well	oring Well MW-4								MW-101							MW-102						
Date	рН	E.C.	°C	°F	ORP	DO	рН	E.C.	°C	°F	ORP	DO	рН	E.C.	°C	°F	ORP	DO				
6/25/2010	7.20	1228	18.20	64.76	165.5	0.05	7.20	1077	19.40	66.92	248.3	30.27	7.10	1042	19.60	67.28	190.3	6.35				
8/24/2010	6.11	1343	19.27	66.69	125.7	0.94	6.58	1170	19.80	67.64	178.5	7.36	6.44	1141	19.81	67.66	129.3	5.22				
11/30/2010	6.83	1258	18.73	65.71	214.6	0.15	6.73	1083	18.72	65.70	189.3	3.85	6.76	1060	18.91	66.04	151.0	4.55				
2/17/2011	7.28	1459	18.14	64.65	229.4	0.13	7.32	1126	19.27	66.69	266.3	38.97	7.30	1094	19.18	66.52	261.8	21.70				

Monitoring Well	MW-103												
Date	рН	E.C.	°C	°F	ORP	DO							
6/25/2010	7.12	1316	19.10	66.38	277.3	29.46							
8/24/2010	6.56	1464	19.32	66.78	192.1	23.64							
11/30/2010	6.89	1307	18.82	65.88	140.6	2.83							
2/17/2011	7.21	1389	18.74	65.73	282.1	54.71							

Notes:

E.C. /al conductivity

°C es centigrade

°F es fahrenheit

ORP aduction potential

DO alved oxygen

NM measured

## Table 4 Summary of Monitoring Well Completion Data

#### Springtown Gas 909 Bluebell Drive Livermore, California

Well Number	Status	Date Drilled	Total Depth	Boring Diameter	Well Casing Diameter	Casing Type	Slot Size	Sand Type	Well S	Screen	Filter	Pack	Annula	ar Seal	Grou	Seal
			(ft)	(in)	(in)	**	33.25		From	То	From	То	From	То	From	То
STMW-1	Active	8/23/2007	20	10	2	PVC	0.02	#2/12	10	20	20	8	8	7	7	0
STMW-2	Active	8/23/2007	20	10	2	PVC	0.02	#2/12	10	20	20	8	8	7	7	0
STMW-3	Active	8/23/2007	20	10	2	PVC	0.02	#2/12	10	20	20	8	8	7	7	0
P1	Active	9/19/2008	20	10	4	PVC	0.02	#3/12	10	20	20	8	8	7	7	0
MW-4	Active	2/25/2010	20	8	2	PVC	0.02	#3/12	10	20	20	8	8	5	5	0
MW-101	Active	2/25/2010	37	8	2	PVC	0.02	#3/12	32	37	37	30	30	28	28	0
MW-102	Active	2/25/2010	40	8	2	PVC	0.02	#3/12	32	40	40	30	30	27	27	0
MW-103	Active	2/26/2010	35	8	2	PVC	0.02	#3/12	30	35	35	28	28	25	25	0

#### Table 5 Summary of Hydrogen Peroxide Injections

Springtown Gas 909 Bluebell Drive Livermore, California

	Te	

DATE	STM	1W-1			STA	MW-3	F	21	MW	/-101			MW	/-103
	7%	10%		-	7%	10%	7%	10%	7%	10%	-	-	7%	10%
3/30/2010	65				60	-	25	-	-		-	-		
4/7/2010	75				50	-	25	-		-	-	2	2	-
4/15/2010	10				30	-	10	-	50	-		-	50	
4/22/2010	15		-		30	*	10	-	55	-		-	50	
4/30/2010	*	15	-	-		30	-	8	-	50	-			47
5/5/2010	54	10	2.	*		35	*	5	-	50	-			50
5/11/2010	-	10	-			35	*	5	-	50	-			50
5/18/2010	2	10	<u> </u>			25		5	-	45			-	45
5/26/2010		10		*		25		5	-	55			-	55
6/2/2010	-	10	-	-	-	50	-	7	-	50		-	-	35
6/9/2010	10				50		8		35	-		-	40	-
6/16/2010	15		*	*	45			7	45	-			40	-
7/1/2010	15				40	೦	3	7	45	-	÷		45	
7/8/2010	10	0	5		30	•		10	50	-	-		50	-
7/14/2010	10	-	•	*	30	-		10	50	-	24		50	
7/21/2010	10		-	2	25			10	50	-		9	50	-
otals	235	65	0	0	390	200	78	79	380	300	0	0	375	282

#### Additional Pilot Test

DATE	STM	ИW-1	STN	/W-2	STN	/W-3	F	21	MV	/-101	MW	/-102	MW	/-103
	7%	10%	7%	10%	7%	10%	7%	10%	7%	10%	7%	10%	7%	10%
12/14/2010		10	10		30	-		10	50	-	35	-	50	-
12/15/2010	10		5	-	20	E)	10	-	-	2	15	1 2		0
12/21/2010		15	15		45	*:	-	20	50	*	50	-	50	-
12/28/2010	5	•	5	•	10		25	-	25		20	-	20	
12/30/2010	5		5	•	10	*	10	-	25		25	-	30	2
1/4/2011	5		5	*		*	20	-	25	-	25	-	30	-
1/11/2011	5		5	*	30		20 -	-	25		25	-	-	-
1/18/2011	10		10				10	-	25		30	-	25	-
1/20/2011	10		5	•	27	•:	8	+1	30		30	-	-	2
1/25/2011	10		5		-	-	5		30		30	-	30	-
1/27/2011	10		5		25	•	10		30		30		-	-
2/1/2011	5		5			•	20		25	-	25	-	30	-
2/3/2011	8	(*(	8		26		16	-	24		28	-	-	-
2/18/2011	5	7. <b>€</b> 6	5				20		25		25	-	30	-
2/22/2011	5.5	79.5	5		30	•	22	•	25		27.5	1 2	-	-
2/24/2011	5		5.25	5.00	(*)		19.5		29.5	+	35	-	30	
3/1/2011	5		5		30	(*	20		25		25		-	-
3/3/2011	5	2.5	5	2500	3.63		20		25	*	25	-	30	-
3/9/2011	5	3.5	5		30		8		32	-	33	-	-	-
3/10/2011	5		5	(*)		(*)	20	-	25	-	25		30	-
otals	119	25	123	0	313	0	284	30	551	0	564	0	385	0

## Appendix B

**Laboratory Analytical Data Sheets** 

## argon laboratories

01 March 2011

GTI Geological Technics, Inc. 1101 7th Street Modesto, CA 95354

RE: Springtown Gas Project Data

Enclosed are the results for sample(s) received on 02/18/11 12:24 by Argon Laboratories. The sample(s) were analyzed according to instructions in accompanying chain-of-custody. Results are summarized on the following pages.

Please see quality control report for a summary of QC data pertaining to this project.

The sample(s) will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Sample(s) may be archived by prior arrangement.

Thank you for the opportunity to service the needs of your company.

Sincerely,

Hiram Cueto Lab Manager

## Geological Technics Inc.

Page of

1172 Kansas Avenue Modesto, CA (209) 522-4119 Fax 522-4227 E-mail: ofi@gtieny.com

### **Chain of Custody**

	E-II	nail: gti@gtien	.com					1		An	alysis	Requ	este	d		Laboratory				
Project #: 1409-2	SPRI	ject Name: VGTOWN	GAS		T	Other)								T		ARGO Temp. @ \$			C°	$\dashv$
Site Address		L DRIVE,	LIVERM	OPE, CA		Gas,		8								Temp. @ I	Lab Receipt	:	C°	
Global ID No	971619	17 ,	2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Containers	Matrix (Soil, Water,	Preservation Type	00 8260								1409-	213824 rt: XYes_		0	$\dashv$
Sampled By: AND CE V			a la		of Con	ix (Soi	servatic	METHOD									d Time S =	Stand	dard	
Date	Time	Field I.D.	Sai	mple I.D.	<u>چ</u>	Matr	Pres	*									Rem		,	$\dashv$
02-17-11	1030		MW-4		4	W	HCL	X												$\neg$
	1105		MW-1		1											* METHO	D 8260B	INCL	UDES:	$\neg$
	1150		MW-1																BE, ETBE,	
	1310		MW-1					Ш											1,2-DCA,	
	1420		STMW-													Target 4	METHANO			
	1435		STMW-															•		
	1450		STMW-	3,												REPORT	ING LIMIT	5 AG	FOLLOWS:	$\neg$
4	1520		P-1	1	V	V	1	1											,	$\neg$
					1	Ц									$\perp$		·G	PL=	50 vg IL	
					t						+	+	+	+	+	- ALL O	THERS	RL=	\$0.5 vg 11	-
					F															
1	,				+			$\vdash$	Н	-	+	++	+	+	+					$\dashv$
Relinquished	by: (signati	ıre)		Date: 02-17-11	Tim	e: 170	00	(	Rece	eived	y: (sig	nature					Date: 2-18		Time:	٦
Relinquished	by: (signati	ure)		Date: 2-18-11	Tim	e:	24		Rece	eived	by: (sig	gnature)	R	#	W.	man	Date:	()	800 Time: 12:24	$\dashv$
Relinquished				Date:	Tim	e:						gnature)	<del>\</del>	- 1 a	1/1	JIIDOI (	Date:	1	Time:	$\dashv$

# **Argon Laboratories Sample Receipt Checklist**

Client Name: Geological Technics Date & Time Received: 0	02/18/11	12:24
Project Name: Springtown Gas Client Project Number:	1409.	2
Received By: SH Matrix: Water Soil Slud	ıdge 🗆	]
Sample Carrier: Client		
Argon Labs Project Number: <u>L102032</u>		
Shipper Container in good condition? Samples received in proper containers? Yes	s 🗸 No	0 🗌
N/A Yes   No  Samples received intact? Yes	s 🗸 No	0 🗌
Samples received under refrigeration? Yes 🗸 No 🗌 Sufficient sample volume for requested tests? Yes	s 🗸 No	o 🗌
Chain of custody present?  Yes  No  Samples received within holding time?  Yes	s 🗸 No	, <b></b>
Chain of Custody signed by all parties? Yes   No   Do samples contain proper preservative?  N/A   Yes	s 🗸 No	o 🗆
Chain of Custody matches all sample labels?  Do VOA vials contain zero headspace?		
Yes V No (None submitted ) Yes	S 🗹 No	
ANY "No" RESPONSE MUST BE DETAILED IN THE COMMENTS SECTION BELOW		
Date Client Contacted: Person Contacted:		
Contacted By: Subject:		
Comments:		
Action Taken:		
Addition function		
ADDITIONAL TEST(S) REQUEST / OTHER		
Contacted By: Date: Time	e:	
Call Received By:	0	
Comments:		1

## 

Geological Technics, Inc.

Project Number: 1409.2

1101 7th Street

Project Name: Springtown Gas

Modesto, CA 95354

Project Manager:GTI

Work Order No.: L102032

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-4	L102032-01	Water	02/17/11 10:30	02/18/11 12:24
MW-101	L102032-02	Water	02/17/11 11:05	02/18/11 12:24
MW-102	L102032-03	Water	02/17/11 11:50	02/18/11 12:24
MW-103	L102032-04	Water	02/17/11 13:10	02/18/11 12:24
STMW-2	L102032-05	Water	02/17/11 14:20	02/18/11 12:24
STMW-1	L102032-06	Water	02/17/11 14:35	02/18/11 12:24
STMW-3	L102032-07	Water	02/17/11 14:50	02/18/11 12:24
P-1	L102032-08	Water	02/17/11 15:20	02/18/11 12:24

## @TSON | laboratories 2905 Railroad Ave. Ceres, CA 95307 (209)581-9280 Fax (209)581-9282

Geological Technics, Inc.

1101 7th Street

Project Number: 1409.2

Modesto, CA 95354

Project Name: Springtown Gas Project Manager:GTI

Work Order No.:

L102032

#### TPH-gas & Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Note
MW-4 (L102032-01) Water Sampled: 17	7-Feb-11 10:30 Receiv	ed: 18-Feb-1	1 12:24		79-4888	200000000000000000000000000000000000000	
Total Petroleum Hydrocarbons @	ND	50	ug/L	1	21-Feb-11	EPA 8260B	
Gasoline							
Benzene	ND	0.5	"	"			
Toluene	ND	0.5	**	"	n	***	
Xylenes, total	ND	1.0			**	30	
Ethyl Benzene	ND	0.5	.11		.39	**	
Methanol	ND	50	71			"	
Ethanol	ND	5.0		*			
t-Butanol	ND	5.0					
Methyl tert-Butyl Ether	ND	0.5		W			
Di-Isopropyl Ether	ND	0.5	n	w	ni ni	n	
Ethyl tert-Butyl Ether	ND	0.5		30	31	300	
tert-Amyl Methyl Ether	ND	0.5		90			
1,2-Dichloroethane	ND	0.5				,,	
1,2-Dibromoethane (EDB)	ND	0.5			*	,,	
Surr. Rec.:		92 %			"	"	
MW-101 (L102032-02) Water Sampled:	17-Feb-11 11:05 Rece	ived: 18-Feb	-11 12:24				
Total Petroleum Hydrocarbons @	ND	50	ug/L	1	21-Feb-11	EPA 8260B	
Gasoline							
Benzene	ND	0.5	9.	0.	00	ж.	
Γoluene	ND	0.5	#	"		**	
Xylenes, total	ND	1.0	"	*		W	
Ethyl Benzene	ND	0.5	**	₩.		•	
Methanol	ND	50	#		"	*	
Ethanol	ND	5.0		N.	iii	ii'	
-Butanol	ND	5.0	0.5	н	11	*	
Methyl tert-Butyl Ether	ND	0.5			"	10.	
Di-Isopropyl Ether	ND	0.5					
Ethyl tert-Butyl Ether	ND	0.5	*			*	
stilyi tert-butyi etilei		0.5		**	<u>#</u>		
ert-Amyl Methyl Ether	ND	0.5					
15	ND ND	0.5	H.		H:	11	
ert-Amyl Methyl Ether						ii:	

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## 2905 Railroad Ave. Ceres, CA 95307 (209)581-9280 Fax (209)581-9282

Geological Technics, Inc.

Modesto, CA 95354

1101 7th Street

Project Number: 1409.2

Project Name: Springtown Gas

Project Manager:GTI

Work Order No.: L102032

TPH-gas & Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Note
MW-102 (L102032-03) Water	Sampled: 17-Feb-11 11:50	Received: 18-Fe	b-11 12:24				
Total Petroleum Hydrocarbons @	ND	50	ug/L	1	21-Feb-11	EPA 8260B	
Gasoline	No.						
Benzene	ND	0.5	•				
Toluene	ND	0.5			w.	**	
Xylenes, total	ND	1.0		SH2			
Ethyl Benzene	ND	0.5		200		(10)	
Methanol	ND	50		.0.			
Ethanol	ND	5.0		"	190		
t-Butanol	ND	5.0					
Methyl tert-Butyl Ether	ND	0.5				•	
Di-Isopropyl Ether	ND	0.5		m ·			
Ethyl tert-Butyl Ether	ND	0.5	.0	0.0		/HC	
tert-Amyl Methyl Ether	ND	0.5	0.000	: 107	w .	.11	
1,2-Dichloroethane	ND	0.5			190	.0	
1,2-Dibromoethane (EDB)	ND	0.5		*	ir.		
Surr. Rec.:		95 %	- III		n	n.	
MW-103 (L102032-04) Water	Sampled: 17-Feb-11 13:10	Received: 18-Feb	-11 12:24				
Γotal Petroleum Hydrocarbons @	ND	50	ug/L	1	21-Feb-11	EPA 8260B	
Gasoline							
Benzene	ND	0.5		<u>'</u>		0.0	
Γoluene	ND	0.5	.0		"		
Kylenes, total	ND	1.0			27		
Ethyl Benzene	ND	0.5					
Methanol	ND	50					
Ethanol	ND	5.0	"	"	n n		
-Butanol	ND	5.0	30	36		"	
Methyl tert-Butyl Ether	ND	0.5		n .			
Di-Isopropyl Ether	ND	0.5	0				
Ethyl tert-Butyl Ether	ND	0.5				"	
ert-Amyl Methyl Ether	ND	0.5				**	
,2-Dichloroethane	ND	0.5		ii	W .		
,2-Dibromoethane (EDB)	ND	0.5	30	36	ä	10	
Surr. Rec.:	3315743	95 %				"	

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## @TGOM laboratories 2905 Railroad Ave. Ceres, CA 95307 (209)581-9280 Fax (209)581-9282

Geological Technics, Inc.

1101 7th Street

Modesto, CA 95354

Project Number: 1409.2

Project Name: Springtown Gas

Project Manager:GTI

Work Order No.:

L102032

#### TPH-gas & Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Note
STMW-2 (L102032-05) Water Sampled:	17-Feb-11 14:20	Received: 18-Fe	b-11 12:24				
Total Petroleum Hydrocarbons @	ND	50	ug/L	1	21-Feb-11	EPA 8260B	
Gasoline							
Benzene	ND	0.5	. "			**	
Toluene	ND	0.5		"		*	
Xylenes, total	ND	1.0	311			100	
Ethyl Benzene	ND	0.5	3.85	(91)	10	300	
Methanol	ND	50	11	н	.05	(197)	
Ethanol	ND	5.0	"	**	**	"	
t-Butanol	ND	5.0		"		"	
Methyl tert-Butyl Ether	ND	0.5		u			
Di-Isopropyl Ether	ND	0.5			10		
Ethyl tert-Butyl Ether	ND	0.5	**			10	
tert-Amyl Methyl Ether	ND	0.5		:::	.00		
1,2-Dichloroethane	ND	0.5				39	
1,2-Dibromoethane (EDB)	ND	0.5					
10 (10)		100.07			"	"	
Surr. Rec.:		100 %					
Surr. Rec.: STMW-1 (L102032-06) Water Sampled: 1	7-Feb-11 14:35		o-11 12:24				
STMW-1 (L102032-06) Water Sampled: I  Fotal Petroleum Hydrocarbons @	7-Feb-11 14:35		o-11 12:24 ug/L	Ī	21-Feb-11	EPA 8260B	
STMW-1 (L102032-06) Water Sampled: I Total Petroleum Hydrocarbons @ Gasoline	ND	Received: 18-Fel		1			
STMW-1 (L102032-06) Water Sampled: I Fotal Petroleum Hydrocarbons @ Gasoline Benzene	Constant	Received: 18-Fel		1			
FTMW-1 (L102032-06) Water Sampled: 1  Fotal Petroleum Hydrocarbons @  Gasoline  Benzene  Foluene	ND	Received: 18-Fel	ug/L		21-Feb-11		
FTMW-1 (L102032-06) Water Sampled: 1 Fotal Petroleum Hydrocarbons @ Gasoline Benzene Foluene Kylenes, total	ND ND	Received: 18-Fel 50 0.5	ug/L	,,	21-Feb-11		
FTMW-1 (L102032-06) Water Sampled: 1  Fotal Petroleum Hydrocarbons @  Gasoline  Benzene  Foluene	ND ND ND	50 0.5 0.5	ug/L	"	21-Feb-11		
FTMW-1 (L102032-06) Water Sampled: 1 Fotal Petroleum Hydrocarbons @ Gasoline Benzene Foluene Kylenes, total	ND ND ND ND	50 0.5 0.5 1.0	ug/L	" "	21-Feb-11		
FTMW-1 (L102032-06) Water Sampled: 1 Fotal Petroleum Hydrocarbons @ Gasoline Benzene Foluene Kylenes, total Ethyl Benzene	ND ND ND ND	8 Received: 18-Fel 50 0.5 0.5 1.0 0.5	ug/L " " " "	" "	21-Feb-11		
FTMW-1 (L102032-06) Water Sampled: 1 Fotal Petroleum Hydrocarbons @ Gasoline Benzene Foluene Kylenes, total Ethyl Benzene Methanol	ND ND ND ND ND	0.5 0.5 1.0 0.5 50	ug/L	" " " "	21-Feb-11		
FTMW-1 (L102032-06) Water Sampled: 1 Fotal Petroleum Hydrocarbons @ Gasoline Benzene Foluene Kylenes, total Ethyl Benzene Methanol Ethanol	ND ND ND ND ND ND	0.5 0.5 1.0 0.5 50	ug/L	" " " "	21-Feb-11		
FTMW-1 (L102032-06) Water Sampled: 1 Fotal Petroleum Hydrocarbons @ Gasoline Genzene Foluene Kylenes, total Ethyl Benzene Methanol Ethanol Ebutanol	ND ND ND ND ND ND ND ND	0.5 0.5 0.5 1.0 0.5 50 5.0 5.0	ug/L	" " " "	21-Feb-11		
FTMW-1 (L102032-06) Water Sampled: 1 Fotal Petroleum Hydrocarbons @ Gasoline Genzene Foluene Kylenes, total Ethyl Benzene Methanol Ethanol Butanol Methyl tert-Butyl Ether	ND N	0.5 0.5 0.5 1.0 0.5 50 5.0 5.0 0.5	ug/L	" " " " " " " " " " " " " " " " " " " "	21-Feb-11		
FTMW-1 (L102032-06) Water Sampled: 1 Fotal Petroleum Hydrocarbons @ Gasoline Genzene Foluene Kylenes, total Ethyl Benzene Methanol Ethanol Butanol Methyl tert-Butyl Ether Di-Isopropyl Ether	ND N	0.5 0.5 0.5 1.0 0.5 50 5.0 5.0 0.5	ug/L	" " " " " " " " " " " " " " " " " " " "	21-Feb-11		
GTMW-1 (L102032-06) Water Sampled: 1  Fotal Petroleum Hydrocarbons @ Gasoline Genzene Foluene Kylenes, total Ethyl Benzene Methanol Ethanol Butanol Methyl tert-Butyl Ether Ethyl tert-Butyl Ether Ethyl tert-Butyl Ether	ND N	0.5 0.5 0.5 1.0 0.5 50 5.0 5.0 0.5 0.5	ug/L	" " " " " " " " " " " " " " " " " " " "	21-Feb-11		

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## @Fax (209)581-9282

Geological Technics, Inc.

Modesto, CA 95354

1101 7th Street

Project Number: 1409.2

Project Name: Springtown Gas

Project Manager:GTI

Work Order No.: L102032

#### TPH-gas & Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Note
STMW-3 (L102032-07) Water Sampled:	17-Feb-11 14:50	Received: 18-Fe	b-11 12:24				
Total Petroleum Hydrocarbons @	ND	50	ug/L	1	21-Feb-11	EPA 8260B	
Gasoline							
Benzene	ND	0.5	н	**	*	"	
Toluene	ND	0.5	31	**	**	11.	
Xylenes, total	ND	1.0		α.	n	ti .	
Ethyl Benzene	ND	0.5		11.			
Methanol	ND	50		"		8	
Ethanol	ND	5.0	*			"	
t-Butanol	ND	5.0			0)	"	
Methyl tert-Butyl Ether	ND	0.5	60			ů.	
Di-Isopropyl Ether	ND	0.5	0:	0.00	n.	WC	
Ethyl tert-Butyl Ether	ND	0.5	10			36:	
tert-Amyl Methyl Ether	ND	0.5			300	(10)	
1,2-Dichloroethane	ND	0.5	**				
1,2-Dibromoethane (EDB)	ND	0.5		н			
Surr. Rec.:		100 %			"	W.	
P-1 (L102032-08) Water Sampled: 17-Feb	o-11 15:20 Recei	ved: 18-Feb-11 12	2:24				
Total Petroleum Hydrocarbons @ Gasoline	ND	50	ug/L	1	21-Feb-11	EPA 8260B	
Benzene	ND	0.5	200	10.7	THE STATE OF THE S		
Γoluene	ND	0.5			**	CWC	
	110	0.5					
Xylenes total	ND	1.0	**	**	10	**	
Xylenes, total	ND ND	1.0	"	*			
Ethyl Benzene	ND	0.5				"	
Ethyl Benzene Methanol	ND ND	0.5 50	**	15			
Sthyl Benzene Methanol Sthanol	ND ND ND	0.5 50 5.0	**	15			
Ethyl Benzene Methanol Ethanol -Butanol	ND ND ND ND	0.5 50 5.0 5.0	**	15			
Sthyl Benzene Methanol Sthanol -Butanol Methyl tert-Butyl Ether	ND ND ND ND	0.5 50 5.0 5.0 0.5	" "	15	n n		
Ethyl Benzene Methanol Ethanol -Butanol Methyl tert-Butyl Ether Di-Isopropyl Ether	ND ND ND ND 1.9 ND	0.5 50 5.0 5.0 0.5		15	n n		
Ethyl Benzene Methanol Ethanol -Butanol Methyl tert-Butyl Ether Di-Isopropyl Ether Ethyl tert-Butyl Ether	ND ND ND ND 1.9 ND	0.5 50 5.0 5.0 0.5 0.5			n n		
Ethyl Benzene Methanol Ethanol -Butanol Methyl tert-Butyl Ether Di-Isopropyl Ether Ethyl tert-Butyl Ether etrt-Amyl Methyl Ether	ND ND ND ND 1.9 ND ND ND	0.5 50 5.0 5.0 0.5 0.5 0.5	" " " " " " "		n n	n n n	
Ethyl Benzene Methanol Ethanol -Butanol Methyl tert-Butyl Ether Di-Isopropyl Ether Ethyl tert-Butyl Ether	ND ND ND ND 1.9 ND	0.5 50 5.0 5.0 0.5 0.5			n n		

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2905 Railroad Ave. Ceres, CA 95307 (209)581-9280 Fax (209)581-9282

Geological Technics, Inc.

1101 7th Street

Project Number: 1409.2

Project Name: Springtown Gas

Project Manager:GTI

Work Order No.: L102032

#### TPH-gas & Volatile Organic Compounds by GC/MS - Quality Control

#### **Argon Laboratories**

Modesto, CA 95354

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L100314 - EPA 5030B										
Blank (L100314-BLK1)				Prepared &	: Analyzed:	02/21/11				
Surrogate: Fluorobenzene	57.5		ug/L	50		115	70-130			
Total Petroleum Hydrocarbons @ Gasoline	ND	50								
Benzene	ND	0.5	**							
Toluene	ND	0.5	**							
Xylenes, total	ND	1.0	**							
Ethyl Benzene	ND	0.5								
t-Butanol	ND	5.0	5.80							
Methyl tert-Butyl Ether	ND	0.5	: H:							
Di-Isopropyl Ether	ND	0.5	2,40							
Ethyl tert-Butyl Ether	ND	0.5	(10)							
tert-Amyl Methyl Ether	ND	0.5	300							
LCS (L100314-BS1)				Prepared &	Analyzed:	02/21/11				
Methyl tert-Butyl Ether	25.6		ug/L	25		102	80-120			
LCS Dup (L100314-BSD1)				Prepared &	Analyzed:	02/21/11				
Methyl tert-Butyl Ether	27.9		ug/L	25		112	80-120	9	20	
Matrix Spike (L100314-MS1)	Sou	rce: L102032-0	01	Prepared &	Analyzed:	02/21/11				
Total Petroleum Hydrocarbons @ Gasoline	1190		ug/L	1000	ND	119	70-130			
Matrix Spike Dup (L100314-MSD1)	Sou	rce: L102032-0	01	Prepared &	Analyzed:	02/21/11				
Total Petroleum Hydrocarbons @ Gasoline	1180		ug/L	1000	ND	118	70-130	0.7	20	

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2905 Railroad Ave. Ceres, CA 95307 (209)581-9280 Fax (209)581-9282

Geological Technics, Inc.

1101 7th Street

Modesto, CA 95354

Project Number: 1409.2

Project Name: Springtown Gas

Project Manager:GTI

Work Order No.:

L102032

#### **Notes and Definitions**

DET

Analyte DETECTED

ND

Analyte NOT DETECTED at or above the reporting limit

NR

Not Reported

dry

Sample results reported on a dry weight basis

RPD

Relative Percent Difference

# Appendix C

	Project Name:	Springto	wn Ga	s (Blue Bell)			Well I.D.: STMW-1					
	Project No.:	1409.2						Date: 2/17/2011				
	Project Location:	909 Blue	ebell Di	rive								
		Livermo	re, CA				Samples sent to: Argon					
Time	Cumulative Volume Purged (gal)	Temp	С°	EC (µS/cm)	pН	ORP (millivolts)	DO (mg/L)	Remarks				
13:52	0.00	10.	50	295	7.89	246.2	15.74	Clear, no odor, no sediments				
13:58	2.25	16.3	39	303	8.04	241.6	48.94	Clear, no odor, no sediments				
14:04	4.50	16.8	39	342	8.23	243.9	38.02	Clear, no odor, no sediments				
14:10	6.75	17.5	55	365	8.10	241.3	44.57	Clear, no odor, no sediments				
14:35					8			Collected samples				
	Purge Method: Pumping Rate:			Vaterra □Cen	trifugal pur	np with dedicated t	tubing	ther				
Well (	Constructed TD (ft):	20.0	00		Sample	Containers used:	4	# VOAsX preserved non-preserved				
	* Well TD (ft):	19.	17					# amber liters preserved non-preserved				
	Silt Thickness (ft):	0.8	3			9		# polys preserved non-preserved				
	Initial DTW (ft):	5.9	6			ē		# polys preserved non-preserved				
Water	column height (ft):	13.2	21			Notes:						
One o	asing volume (gal):	2.2	5				/					
	** Final DTW (ft):	12.9	96			Sampled By:	A. Dorn	tuller as				
Ca	asing diameter (in):	2'						Po I				
Sample Me	ethod: lons per foot of casing.			ler  Other	5, 5" dia. = 1	* = measured .02, 6* dia. = 1.48	** = @ sampling	Purged Water Drummed: ☒ Yes ☐ No No. of Drums:				

	Project Name:	Springto	wn Ga	as (Blue Bell)				Well I.D.: STMW-2			
	Project No.:	1409.2						Date: 2/17/2011			
	Project Location:	909 Blue	ebell D	rive							
		Livermo	re, CA				Samples sent to: Argon				
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)	Remarks			
13:20	0.00	10.0	00	318	8.06	231.1	26.51	Light brown, no odor, a lot of sediments			
13:26	2.25	18.2	21	428	8.03	237.0	48.12	Light brown, no odor, a lot of sediments			
13:36	4.50	17.2	26	411	8.13	239.2	36.31	Light brown, no odor, a lot of sediments			
13:40	6.75										
14:20								Collected samples			
Well (	Purge Method: Pumping Rate: Constructed TD (ft): * Well TD (ft): Silt Thickness (ft): Initial DTW (ft):	20.0 19.6 0.3	- 00 69	Waterra □Cer gal/min		np with dedicated  Containers used:		# VOAs			
Water	column height (ft):			1		Notes:	Well purged Dry				
	asing volume (gal):					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	λ	0 —			
	** Final DTW (ft):			1		Sampled By:	A. Dorn	Section De			
Ca	asing diameter (in):			1			7	Colores Colores			
mple Me	ethod: lons per foot of casing.			iler ☐ Other ☐	5, 5" dia. = 1	* = measured	** = @ sampling	Purged Water Drummed:			

Project No.:	roughere nerv					Well I.D.:			
	1409.2					Date:	2/17/2011		
eject Location:	909 Bluebell Dr	rive							
	Livermore, CA	3.00			Samples sent to: Argon				
	Livelinote, ox				6	Samples sent to.	Aigon		
Cumulative lume Purged (gal)	Temp C°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks		
0.00	11.28	217	7.66	267.4	26.17	Light brown, very mild	odor, very few sediments		
2.00	17.15	241	8.22	236.7	53.56	Light brown, very mild	odor, very few sediments		
4.00	17.81	274	8.16	247.6	46.85	Light brown, very mild	odor, very few sediments		
6.00	18.21	241	8.14	249.0	39.47	Light brown, very mild	odor, very few sediments		
						Collected samples			
Purge Method:	☑ Dadiasted V								
Pumping Rate:		Vaterra □Cer	ntrifugal pun	np with dedicated	tubing 🚨 Ot	her			
			<i>7</i> 20 (4	np with dedicated	tubing Ot	# VOAs	X preserved non-preserved		
Pumping Rate:	0.43		<i>7</i> 20 (4		72		X preserved non-preserved preserved non-preserved		
Pumping Rate:	20.00		<i>7</i> 20 (4		72	# VOAs	CONTRACTOR AND PROPERTY CONTRACTOR AND PROPERTY AND		
Pumping Rate: tructed TD (ft): * Well TD (ft):	20.00		<i>7</i> 20 (4		72	# VOAs # amber liters	preserved non-preserved		
Pumping Rate: tructed TD (ft): * Well TD (ft): Thickness (ft):	20.00 19.59 0.41		<i>7</i> 20 (4		72	# VOAs # amber liters # polys	preserved non-preserved non-preserved		
Pumping Rate: tructed TD (ft): * Well TD (ft): Thickness (ft): initial DTW (ft):	20.00 19.59 0.41 8.87		<i>7</i> 20 (4	Containers used:	72	# VOAs # amber liters # polys	preserved non-preserved non-preserved		
Pumping Rate:  tructed TD (ft):  * Well TD (ft):  Thickness (ft):  initial DTW (ft):  tructed TD (ft):	0.43 20.00 19.59 0.41 8.87 10.72		<i>7</i> 20 (4	Containers used:	4	# VOAs # amber liters # polys	preserved non-preserved non-preserved		
	0.00 2.00 4.00 6.00	tume Purged (gal)         Temp         C°           0.00         11.28           2.00         17.15           4.00         17.81           6.00         18.21	ume Purged (gal)         Temp         C°         EC (μs/cm)           0.00         11.28         217           2.00         17.15         241           4.00         17.81         274	ume Purged (gal)         Temp         C°         EC (μs/cm)         pH           0.00         11.28         217         7.66           2.00         17.15         241         8.22           4.00         17.81         274         8.16	ume Purged (gal)         Temp         C°         EC (μS/cm)         pH         ORP (millivolts)           0.00         11.28         217         7.66         267.4           2.00         17.15         241         8.22         236.7           4.00         17.81         274         8.16         247.6	ume Purged (gal)         Temp         C°         EC (μs/cm)         pH         ORP (millivolts)         DO (mg/L)           0.00         11.28         217         7.66         267.4         26.17           2.00         17.15         241         8.22         236.7         53.56           4.00         17.81         274         8.16         247.6         46.85	ume Purged (gal)         Temp         C°         EC (μs/cm)         pH         ORP (millivolts)         DO (mg/L)           0.00         11.28         217         7.66         267.4         26.17         Light brown, very mild           2.00         17.15         241         8.22         236.7         53.56         Light brown, very mild           4.00         17.81         274         8.16         247.6         46.85         Light brown, very mild           6.00         18.21         241         8.14         249.0         39.47         Light brown, very mild		

	Project No.:	a sectionaries — et manure				Well I.D.: MW-4  Date: 2/17/2011				
	Project Location:	909 Bluebell D Livermore, CA	rive				Samples sent to: Argon			
Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	рН	ORP (millivolts)	DO (mg/L)	Remarks			
10:06	0.00	9.63	1413	7.10	255.6	8.22	Clear, no odor, very few sediments			
10:12	2.00	18.19	1456	7.28	236.2	0.16	Clear, no odor, very few sediments			
10:19	4.00	18.06	1458	7.28	232.2	0.14	Clear, no odor, very few sediments			
10:25	6.00	18.14	1459	7.28	229.4	0.13	Clear, no odor, very few sediments			
10:30							Collected samples			
	Purge Method: Pumping Rate:		Waterra □Cen	trifugal pur	mp with dedicated	tubing	ner			
Well 0	Constructed TD (ft):			Sample	Containers used:	4	# VOAsX preserved non-preserved			
	* Well TD (ft):						# amber liters preserved non-preserved			
	Silt Thickness (ft):						# polys preserved non-preserved			
	Initial DTW (ft):	200.000					# polys preserved non-preserved			
22000	column height (ft):	5			Notes:		Λ 0			
One o	asing volume (gal):  ** Final DTW (ft):	1 1900,2500					Ander John			
	asing diameter (in):	1.000.00			Sampled By:	A. Dorn	TOTAL TOTAL			
C	asing diameter (in):	2"								
Sample Me	ethod: lons per foot of casing.		ler  Other  a. = 0.38 4* dia. = 0.69	5, 5" dia. = 1	* = measured	** = @ sampling	Purged Water Drummed:			

	Project Name: Project No.: Project Location:	1409.2		ue Bell)					Well I.D.: P-1  Date: 2/17/20	011		
		Livermore,	CA				Samples sent to: Argon					
Time	Cumulative Volume Purged (gal)	Temp	C° E	:C (µS/cm)	рН	ORP (millivolts)	DO	(mg/L)		Remarks		
14:36	0.0	13.70		402	7.93	240.2	65	5.11	Light brown, very mild odor,	few sediments		
14:46	8.0	17.43		365	8.67	195.2	53	3.80	Light brown, very mild odor,	few sediments		
14:56	16.0	17.72		377	8.69	205.1	42	2.07	Light brown, very mild odor,	ew sediments		
	24.0											
15:20									Collected samples			
	Purge Method: Pumping Rate: Constructed TD (ft): * Well TD (ft): Silt Thickness (ft): Initial DTW (ft):	20.00 19.52 0.48 7.3	ted Water			Containers used:		□ Ott	# VOAs X # amber liters # polys	preserved non-preserved  preserved non-preserved  preserved non-preserved  preserved non-preserved		
	column height (ft):					Notes:	Well pu	irged Dry	at 19 gallons.			
	asing volume (gal):  ** Final DTW (ft):	7.84				Sampled By:	A. Dorr	A	Ellen Jopen			
Sample Me	thod: ons per foot of casing.	Waterra ⊠		P.111711 177	95, 5" dia. = 1.	* = measured 02, 6* dia. = 1.48	** = @ sa	ampling	Р	urged Water Drummed:  Yes  No No. of Drums:		

	Project Name:	Springtown Ga	s (Blue Bell)				Well I.D.: MW-101  Date: 2/17/2011			
	Project Location:	909 Bluebell D Livermore, CA	rive			Samples sent to: Argon				
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	рН	ORP (millivolts)	DO (mg/L)	Remarks			
10:36	0.0	10.94	462	7.86	234.4	23.15	Clear, no odor, no sediments			
10:46	5.5	19.19	1125	7.33	262.8	40.59	Clear, no odor, no sediments			
10:52	11.0	19.25	1125	7.32	264.9	39.89	Clear, no odor, no sediments			
11:00	16.5	19.27	1126	7.32	266.3	38.97	Clear, no odor, no sediments			
11:05							Collected samples			
-										
Well (	Purge Method: Pumping Rate:	0.69	Vaterra □Cen	370 IV	np with dedicated	31 To	# VOAsXpreservednon-preserved			
VVCIIV	* Well TD (ft):			Sample	Containers used:	4				
	Silt Thickness (ft):									
	Initial DTW (ft):									
Water	column height (ft):				Notes:		# polys preserved non-preserved			
2/17/47	asing volume (gal):				Tvotes.		112	_		
=3.07.0	** Final DTW (ft):	7 TONOS (11. Proper			Sampled By:	A Dorn	Sadim Janu	-		
Ca	asing diameter (in):	5565 1			Sampled by.	A. Dolli	20/20	_		
Sample Me	thod:		ler	5, 5" dia. = 1		** = @ sampling	Purged Water Drummed:			

	Project Name: Project No.:		wn Ga	as (Blue Bell)					Well I.D.: MW-		
	Project Location:	909 Blue	bell D	rive							
		Livermor	e, CA				Samples sent to: Argon				
Time	Cumulative Volume Purged (gal)	Temp	С°	EC (μS/cm)	pН	ORP (millivolts)	DO	(mg/L)		Remarks	
11:15	0.00	16.7	3	348	7.33	272.4	40	0.71	Clear, no odor, very few se	diments	
11:25	5.25	19.3	8	1092	7.32	265.9	17	7.19	Clear, no odor, very few se	diments	
11:35	10.50	19.0	5	1094	7.30	263.1	11	7.81	Clear, no odor, very few se	diments	
11:45	15.75	19.1	8	1094	7.30	261.8	2	1.70	Clear, no odor, very few se	diments	
11:50									Collected samples		
	Purge Method: Pumping Rate:			Waterra □Cen	trifugal pun	np with dedicated	tubing	□ Ot	ner		
Well C	Constructed TD (ft):	40.0	0		Sample	Containers used:		4	# VOAs <u>X</u>	preserved non-preserved	
	* Well TD (ft):	39.1	2						# amber liters	preserved non-preserved	
	Silt Thickness (ft):	0.88	3						# polys	preserved non-preserved	
	Initial DTW (ft):	8.30	)			7			# polys	preserved non-preserved	
Water	column height (ft):	30.8	2			Notes:					
One o	asing volume (gal):	5.24	1						1.1		
	** Final DTW (ft):	8.31				Sampled By:	A. Dor	rn –	Fredu Jan		
Ca	asing diameter (in):	2"									
Sample Me	othod: lons per foot of casing.			iler  Other	5, 5° dia. = 1	* = measured .02, 6" dia. = 1.48	** = @ S	ampling		Purged Water Drummed:	<b>□</b> No

	Project Name:	Springtow	n Ga	s (Blue Bell)			Well I.D.: MW-103					
	Project No.:	1409.2							Date: 2/17/2011			
	Project Location:	909 Blueb	ell D	rive								
		Livermore	, CA				Samples sent to: Argon					
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO	(mg/L)	Remarks			
12:43	0.0	13.70	)	235	8.74	195.2	41	.59	Clear, no odor, no sediments			
12:50	4.5	19.20	)	1388	7.24	260.0	66	5.02	Clear, no odor, no sediments			
12:56	9.0	19.00	)	1386	7.23	271.0	61	.70	Clear, no odor, no sediments			
13:06	13.5	18.74	1	1389	7.21	282.1	54	1.71	Clear, no odor, no sediments			
13:10									Collected samples			
	Purge Method: Pumping Rate:		0.59	Waterra □Cer		np with dedicated		Oti				
Well C	Constructed TD (ft):				Sample	Containers used:		4	# VOAsX preserved non-preserved			
	* Well TD (ft):		32						# amber liters preserved non-preserved			
	Silt Thickness (ft):								# polys preserved non-preserved			
	Initial DTW (ft):						-		# polys preserved non-preserved			
1000	column height (ft):	5 400 00 00 00				Notes:						
One o	asing volume (gal):							/				
100	** Final DTW (ft):	13-281,7101				Sampled By:	A. Dor	n +	Tedur Lako			
Ca	asing diameter (in):	2"										
Sample Me	ethod: lons per foot of casing.			ler ☐ Other ☐ a. = 0.38 4* dia. = 0.6	55, 5" dia. = 1	* = measured .02, 6" dia. = 1.48	** = @ Sa	ampling	Purged Water Drummed:  Yes No			



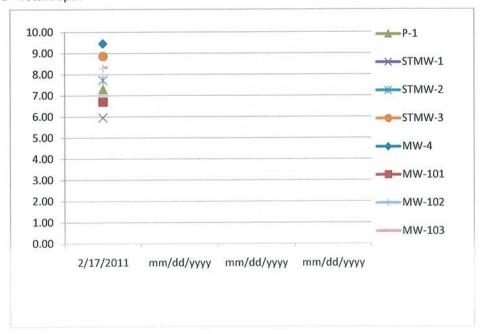
(209) 522-4119 (Office) \* (209) 522-4227 (Fax) 1172 Kansas Avenue, Modesto, CA 95351 gti@gtienv.com

### SPRINGTOWN GAS (BLUE BELL) 1409.2 909 BLUE BELL DRIVE, LIVERMORE

### MONITORING WELL FIELD SUMMARY LOG 2010 DEPTH TO WATER MEASUREMENTS

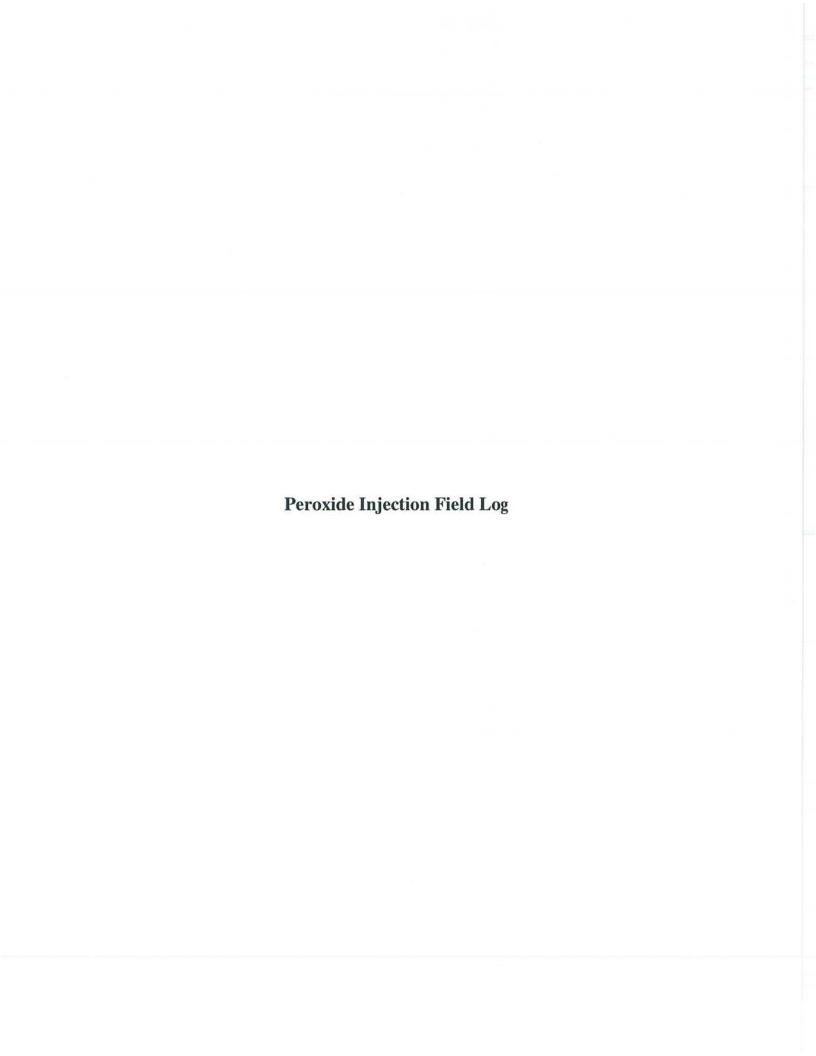
	QTR. 1	QTR. 2	QTR. 3	QTR. 4	WELL
DATE	2/17/2011	mm/dd/yyyy	mm/dd/yyyy	mm/dd/yyyy	TD
	(ft)	(ft)	(ft)	(ft)	
LOCATION					
P-1	7.30				20.00
STMW-1	5.96				20.00
STMW-2	7.74				20.00
STMW-3	8.87				20.00
MW-4	9.47				20.00
MW-101	6.71	,			37.00
MW-102	8.30				40.00
MW-103	8.34				35.00

\*TD Total Depth



#### NOTE:

ALL MEASUREMENTS ARE MADE FROM THE NORTH SIDE AND TOP EDGE OF THE WELL
CASING. THE TOP OF CASING WITH A NOTCH OR PERMANENT MARKINGS, WHICH EVER ONE
CONDITION IS APPROPRIATE.



	Project Name: Project No.:		wn Ga	s				Well I.D.:	STMW-1 3/9/2011	
	Project Location:	909 Blue						Gallons injected:	5	
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks	
					1					
	,							2		
						1				
	Injection Method:	☐ Dedic	cated V	Vaterra	trifugal pum	p with dedicated tu	bing 🗵 Oth	er	Gravity fed injection	
	Pumping Rate:		-	gal/min						
Wel	Constructed TD (ft):	20.0	0			Peroxide %	50%			
	* Well TD (ft):	17.0						Dilute Peroxide %	7%	
	Silt Thickness (ft):					Water (gal)	5			
	Initial DTW (ft):	0.00				1927 H				
Wat	er column height (ft):					Notes:	{			
One	e casing volume (gal):						-			
	** Final DTW (ft):	10#1				Sampled By:	E. Nona	Dan Dun		
10	Casing diameter (in):	2"					~	)		
Sample Meth	nod: Gallons per foot of casing.			Other  a. = 0.38 4" dia. = 0.6	65, 5" dia. = 1	* = measured .02, 6* dia. = 1.48	** = @ sampling	] [	Purged Water Drummed:	⊠ No

	Project Name:	Springto	wn Ga	S				Well I.D.: STMW-2
	Project No.:	1409.2						Date: 3/9/2011
	Project Location:	909 Blue	ebell D	rive				
	0	Livermor					0	Gallons injected: 5
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg	mg/L) Remarks
							*	
	101 111 22 11 1			и				Zi ou sa
	Injection Method:				itrifugai pum	p with dedicated tu	bing 🖾	S Other Gravity fed injection
	Pumping Rate:			gal/min				
We	ell Constructed TD (ft):	20.0	00			Peroxide %	50%	6
	* Well TD (ft):							Dilute Peroxide % 7%
	Silt Thickness (ft):					Water (gal)	5	
	Initial DTW (ft):							
	ter column height (ft):					Notes:		
Or	e casing volume (gal):							
	** Final DTW (ft):					Sampled By:	E. Nona	Can Van
	Casing diameter (in):	2"		5				
Sample Me	thod:	N/A ⊠ E	Bailer 🗆	Other 🗆		* = measured	** = @ samplin	Purged Water Drummed: ☐ Yes ☒ No
	Gallons per foot of casing.	2" dia. = 0.1	7, 3" di	a. = 0.38 4* dia. = 0.6	65, 5" dia. = 1	.02, 6" dia. = 1.48		No. of Drums:

Project Name		wn Ga	s			r)	Well I.D.: <u>ST</u> Date: 3/5		
Project Location	***************************************	hall D	rive			all and a second	Date. ora	5/2011	
Project Eccation	Livermor		ive			0	Gallons injected:	30	
Cumulative Volume Time Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks	
	_								
	-	-							
	-								
	<u> </u>								
Injection Method	: Dedic	cated V	/aterra □Cen	trifugal pum	p with dedicated tu	bing   Other	Gra	avity fed injection	
Pumping Rate		-	gal/min						
Well Constructed TD (ff)	: 20.0	0			Peroxide %	50%			
* Well TD (ft)							Dilute Peroxide %	7%	
Silt Thickness (ft)					Water (gal)	30			
Initial DTW (ft)	:								
Water column height (ft)					Notes:				
One casing volume (gal)						_	- A		
** Final DTW (ft)					Sampled By:	E. Nona	of our		
Casing diameter (in)	: 2"						_		
Sample Method:  Gallons per foot of casing			Other  a. = 0.38 4" dia. = 0.6	65, 5" dia. = 1	* = measured .02, 6" dia. = 1.48	** = @ sampling		Purged Water Drummed: No. of Drums:	☐ Yes ☒ No

	Project Name:	Springto	wn Ga	S			•8	Well I.D.:	P-1	
	Project No.:	1409.2					_ 4	Date:	3/9/2011	
	Project Location:	909 Blue	ebell D	rive						
		Livermor	re, CA				•	Gallons injected:	20	
Time	Cumulative Volume Purged (gal)	Temp	С°	EC (μS/cm)	рН	ORP (millivolts)	DO (mg/L)		Remarks	
			_							
	Injection Method:	☐ Dedi	cated V	Vaterra ☐Cen	trifugal pun	np with dedicated tu	bing 🗵 Othe	er	Gravity fed injection	
	Pumping Rate:			gal/min						
W	/ell Constructed TD (ft):	20.0	00			Peroxide %	50%			
	* Well TD (ft):							Dilute Peroxide %	7%	
	Silt Thickness (ft):					Water (gal)	20	-		
	Initial DTW (ft):	-								
	ater column height (ft):					Notes:				
0	ne casing volume (gal):							5 1		
	** Final DTW (ft):		-			Sampled By:	E. Nona	Za Dan		
	Casing diameter (in):	4"	9.							
Sample M				Other 🗆		* = measured	** = @ sampling	] [	Purged Water Drummed:	☐ Yes ☒ No
	Gallons per foot of casing.	2" dia. = 0.1	17, 3" di	a. = 0.38 4" dia. = 0.6	55, 5" dia. = 1	1.02, 6" dia. = 1.48		į.	No. of Drums:	

	Project Name:	Springto	wn Ga	S			81	Well I.D.:	MW-101	
	Project No.:	1409.2						Date:	3/9/2011	
	Project Location:	W	bell D	rive			·1			
		Livermor						Gallons injected:	25	
Time	Cumulative Volume Purged (gal)	Temp	С°	EC (μS/cm)	рН	ORP (millivolts)	DO (mg/L)		Remarks	
					ļ					
	1000 DVL - 3 4 DV - 20	☐ Dedic	noted V	Votorra DCon	trifugal pup	np with dedicated tu	bing 🗵 Othe	-		
	Injection Method: Pumping Rate:				itiliugai puli	ip with dedicated to	oing 🖾 Oine	er	Gravity fed injection	
	rumping hate.			gavmin						
W	ell Constructed TD (ft):	37.0	00			Peroxide %	50%	-8		
	* Well TD (ft):	1920						Dilute Peroxide %	7%	
	Silt Thickness (ft):	741				Water (gal)	25	_		
	Initial DTW (ft):	-								
W	ater column height (ft):	2 <b>4</b> 9				Notes:				
0	ne casing volume (gal):	-								
	** Final DTW (ft):	*				Sampled By:	E. Nona	The June		
	Casing diameter (in):	2"					(			
Sample Mo	ethod: Gallons per foot of casing.			l Other □ a. = 0.38 4" dia. = 0.6	65, 5" dia. = 1	* = measured .02, 6* dia. = 1.48	** = @ sampling	]	Purged Water Drummed: No. of Drums:	☐ Yes ☒ No

	Project Name:	Springto	wn Ga	S			g.	Well I.D.:	MW-102	
	Project No.:	1409.2						Date:	3/9/2011	
	Project Location:	909 Blue	ebell D	rive			70	: <del>-</del>		
		Livermor	re, CA				21	Gallons injected:	25	
Time	Cumulative Volume Purged (gal)	Temp	c°	EC (µS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks	
10:20										
-										
-										
										-
	Injection Method:	☐ Dedic	cated V	Vaterra □Cen	trifugal pum	p with dedicated tu	bing ⊠ Othe	r	Gravity fed injection	
	Pumping Rate:			gal/min					aravity rod injection	_
W	'ell Constructed TD (ft):	-				Peroxide %	50%			
	* Well TD (ft):					3,31,510,55,10		Dilute Peroxide %	7%	
	Silt Thickness (ft):	191				Water (gal)	25		.:	
	Initial DTW (ft):	-						3		
	ater column height (ft):					Notes:				
0	ne casing volume (gal):									
	** Final DTW (ft):					Sampled By:	E. Nona	in Dun		
	Casing diameter (in):	•								
Sample Me	ethod: Gallons per foot of casing.			Other  a. = 0.38 4" dia. = 0.6	65, 5" dia. = 1.	* = measured 02, 6" dia. = 1.48	** = @ sampling		Purged Water Drummed: ☐ Yes ☒ I  No. of Drums:	No

Project Name:	Springtow	n Gas						Well I.D.: ST	MW-1		
Project No.:	1409.2							Date: 3/8	/2011		
Project Location:	909 Blueb	ell Dri	/e					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	_		
	Livermore					20		Gallons injected:	5		
Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO	(mg/L)		Remarks		
		_					1				
		_									
		_		ļ							
		_									
	ļ										
	ļ										
	<u></u>										
Injection Method	□ Dedica	ated Wa	aterra 🖵 Cer	ntrifugal pum	np with dedicated tu	bing	Other	Gra	vity fed injection		
Pumping Rate		- g	al/min						inty too injection		
W-II O	2000				[		10.00				
Well Constructed TD (ft):	7.000.000	<del>-</del>			Peroxide %		0%				
* Well TD (ft):		_						Dilute Peroxide %	7%		
Silt Thickness (ft):		_			Water (gal)		94				
Initial DTW (ft):		-									
Water column height (ft):		_			Notes:		1				
		_						1.0			
One casing volume (gal):					Sampled By:	A. Do	n K	y en la			
** Final DTW (ft):		-					1				
							1				
** Final DTW (ft):		ailer 🗆	Other 📮		* = measured	** = @ s	ampling		Purged Water Drummed:	☐ Yes	⊠ No

	Project Name:	Springto	wn Ga	s				Well I.D.: S	TMW-2	
	Project No.:	1409.2						Date: 3/	8/2011	
	Project Location:	909 Blue	bell D	rive						
		Livermor	e, CA					Gallons injected:	5	
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	рН	ORP (millivolts)	DO (mg/L)		Remarks	
									65 St 869 W G	
	Injection Method:				trifugal pum	p with dedicated tu	bing 🗵 Othe	<u>G</u>	ravity fed injection	
	Pumping Rate:			gal/min						
V	/ell Constructed TD (ft):	20.0	00			Peroxide %	50%			
	* Well TD (ft):	- 2						Dilute Peroxide %	7%	
	Silt Thickness (ft):					Water (gal)	94	-		
	Initial DTW (ft):									
	ater column height (ft):					Notes:				
C	one casing volume (gal):						A	1.0		
	** Final DTW (ft):					Sampled By:	A. Dorn	mam en		
	Casing diameter (in):	2"								
Sample M	200 TO 100 TO 10			☐ Other ☐		* = measured	** = @ sampling	] [	Purged Water Drummed:	☐ Yes ☒ No
	Gallons per foot of casing.	2" dia. = 0.1	7, 3" di	a. = 0.38 4" dia. = 0.6	65, 5" dia. = 1	.02, 6" dia. = 1.48		L	No. of Drums:	

	Project Name: Project No.:		wn Ga	s				Well I.D.: S		
	Project Location:	909 Blue					0	Gallons injected:	30	
Time	Cumulative Volume Purged (gal)	Temp	c°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks	
-										
	Injection Method:	☐ Dedi	cated V	Vaterra □Cen	trifugal pum	p with dedicated tu	bing 🗵 Oth	erG	ravity fed injection	
	Pumping Rate:			gal/min						
l v	/ell Constructed TD (ft):	20.0	00			Peroxide %	50%			
	* Well TD (ft):							– Dilute Peroxide %	7%	
	Silt Thickness (ft):	12				Water (gal)	94	_23		
	Initial DTW (ft):	19					171	<del>-</del>		
l w	ater column height (ft):	-				Notes:				
C	ne casing volume (gal):	121								
	** Final DTW (ft):	-				Sampled By:	A. Dorn	male lem		
	Casing diameter (in):	2"	i)				/			
Sample M	ethod:  Gallons per foot of casing.			Other  ia. = 0.38 4" dia. = 0.4	65, 5° dia. = 1	* = measured .02, 6" dia. = 1.48	** = @ sampling		Purged Water Drummed:	⊠ No

	Project Name: Project No.: Project Location:	1409.2	ell Dri						Well I.D.: P-1  Date: 3/8/2011  Gallons injected: 8
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (µS/cm)	pН	ORP (millivolts)	DO	(mg/L)	Remarks
			$\dashv$	yr. H				22 62 78	
			$\neg$						
	Injection Method: Pumping Rate:			aterra	trifugal pum	p with dedicated tu	bing	⊠ Othe	er Gravity fed injection
١	Well Constructed TD (ft):	20.00				Peroxide %	5	0%	
	* Well TD (ft):	-							Dilute Peroxide % 7%
	Silt Thickness (ft):	127				Water (gal)		94	
	Initial DTW (ft):	190							
V	Vater column height (ft):	-				Notes:			
	One casing volume (gal):	121							A D O
	** Final DTW (ft):	4				Sampled By:	A. Dor	n	Sulf M Sh
	Casing diameter (in):	4"						1	
Sample N	Method:  Gallons per foot of casing.			Other	55, 5" dia. = 1.	* = measured 02, 6" dia. = 1.48	** = @ s	ampling	Purged Water Drummed: ☐ Yes ☒ No No. of Drums:

	Project Name:		wn Ga	S				Well I.D.:	MW-101 3/8/2011
	Project Location:		bell D	rive				Date.	3/0/2011
	9	Livermor	e, CA					Gallons injected:	32
Time	Cumulative Volume Purged (gal)	Temp	С°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks
	38 /3 88 pt 16		19 1000	6575 19 <u>-</u> 6267 1	161924 26	100 to 10			
	Injection Method:				trifugal pun	np with dedicated tu	bing 🗵 Othe	er	Gravity fed injection
	Pumping Rate:		-	gal/min					
W	/ell Constructed TD (ft):	37.0	0			Peroxide %	50%		
	* Well TD (ft):	- 1						Dilute Peroxide %	7%
	Silt Thickness (ft):	(8)				Water (gal)	94		
	Initial DTW (ft):	- 3							
W	ater column height (ft):	-		}		Notes:			
C	ne casing volume (gal):	, <del>5</del> ),					Λ.		
	** Final DTW (ft):					Sampled By:	A. Dorn	man Lon	
	Casing diameter (in):	2"					U	0	
Sample M	ethod:  Gallons per foot of casing.			Other  a. = 0.38 4" dia. = 0.6	65, 5* dia. = 1	* = measured	** = @ sampling		Purged Water Drummed: ☐ Yes ☒ No No. of Drums:

	Project Name:	1409.2						Well I.D.:	MW-102 3/8/2011
	Project Location:	Livermon		rive				Gallons injected:	33
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks
10:20									
	Injection Method:				trifugal pum	p with dedicated tu	bing 🗵 Oth	er	Gravity fed injection
W	/ell Constructed TD (ft):	-				Peroxide %	50%		
	* Well TD (ft):					Peroxide %	30 /6	Dilute Peroxide %	7%
	Silt Thickness (ft):					Water (gal)	94	Zilato i Groviuo 70	.,,
	Initial DTW (ft):								
w	ater column height (ft):	-				Notes:		\	
0	ne casing volume (gal):								
	** Final DTW (ft):	-				Sampled By:	A. Dorn	Sugar de	
	Casing diameter (in):	120						00	
Sample Me	ethod: Gallons per foot of casing.			Other  a. = 0.38 4" dia. = 0.6	65, 5" dia. = 1	* = measured .02, 6" dia. = 1.48	** = @ sampling		Purged Water Drummed: ☐ Yes ☒ No No. of Drums:

	Project Name:	Springto	wn Ga	S			0		Well I.D.: S	STMW-	-1		
	Project No.:	1409.2					10		Date: 3	3/1/201	1		
	Project Location:	909 Blue	ebell D	rive									
		Livermo	re, CA				6		Gallons injected:		5		
Time	Cumulative Volume Purged (gal)	Temp	С°	EC (μS/cm)	pН	ORP (millivolts)	DO	(mg/L)			Remarks		
						(							
	Injection Method:	☐ Dedi	icated V	Vaterra □Cen	ntrifugal pum	p with dedicated tu	bing	Other		Gravity	fed injection		
	Pumping Rate:			gal/min									
V	/ell Constructed TD (ft):	20.0	00			Peroxide %	50	%					
	* Well TD (ft):	-							Dilute Peroxide %		7%		
	Silt Thickness (ft):	-				Water (gal)							
	Initial DTW (ft):												
	/ater column height (ft):					Notes:							
C	One casing volume (gal):						Programme and the second	6.	A \				
	** Final DTW (ft):					Sampled By:	E. Nona	(93	- Din				
	Casing diameter (in):	2"											
Sample M	ethod:	N/A ⊠	Bailer [	Other 🗆		* = measured	** = @ sar	npling		P	urged Water Drummed:	☐ Yes	⊠ No
	Gallons per foot of casing.	2" dia. = 0.	17, 3" di	a. = 0.38 4" dia. = 0.6	65, 5" dia. = 1	.02, 6* dia. = 1.48			L		No. of Drums:	0	

	Project Name:	Springto	wn Ga	S					Well I.D.:	STMW-2	
	Project No.:	1409.2							Date:	3/1/2011	
	Project Location:	909 Blue	bell D	rive							
		Livermor	e, CA				il e		Gallons injected:	5	
Time	Cumulative Volume Purged (gal)	Temp	С°	EC (μS/cm)	pН	ORP (millivolts)	DO	(mg/L)		Remarks	
		_	_								
	P										
	Injection Method:	☐ Dedic	cated V	Vaterra □Cen	trifugal pun	np with dedicated tu	bing	Other		Gravity fed injection	
	Pumping Rate:			gal/min							
W	ell Constructed TD (ft):		00			Peroxide %	5	50%			
	* Well TD (ft):					000000 No 1700			Dilute Peroxide %	7%	
	Silt Thickness (ft):					Water (gal)		5			
10/	Initial DTW (ft): ater column height (ft):					Natara					
	ne casing volume (gal):					Notes:			21		
	** Final DTW (#):					Sampled By:	F Nor	na E			
	Casing diameter (in):		3			Campida by.	_, , , , , ,	7	)		
Sample Me	ethod: Gallons per foot of casing.			Other  a. = 0.38 4" dia. = 0.6	65, 5" dia. = 1	* = measured	** = @ s	ampling		Purged Water Drummed: No. of Drums:	

	Project Name:	Springto	wn Ga	S					Well I.D.:	STMW-3	
	Project No.:	1409.2							Date:	3/1/2011	
	Project Location:	909 Blue	ebell D	rive		1.					
		Livermor	re, CA						Gallons injected:	30	
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO	(mg/L)		Remarks	
	Injection Method:	☐ Dedi	cated V	Vaterra □Cen	trifugal pun	np with dedicated tu	bing			Gravity fed injection	
	Pumping Rate:			gal/min			×				
w	ell Constructed TD (ft):	20.0	00	1		Peroxide %		50%			
	* Well TD (ft):		,,,			l'eloxide /s		-	Dilute Peroxide %	7%	
	Silt Thickness (ft):					Water (gal)		30			
	Initial DTW (ft):					, valor (gar)					
w	ater column height (ft):					Notes:					
	ne casing volume (gal):										
	** Final DTW (ft):	-				Sampled By:	E. No	na 🗲	· Alm		
	Casing diameter (in):	2"	E .					6	5		
Sample Me	ethod: Gallons per foot of casing.			Other   Other   0.38 4* dia. = 0.6	95, 5" dia. = 1	* = measured 1.02, 6" dia. = 1.48	** = @ \$	sampling		Purged Water Drummed: No. of Drums: 0	∕es ⊠ No

#### Peroxide Injection Field Log Project Name: Springtown Gas Well I.D.: P-1 Project No.: 1409.2 Date: 3/1/2011 Project Location: 909 Bluebell Drive Gallons injected: 20 Livermore, CA **Cumulative Volume** Purged (gal) Temp C° EC (µS/cm) pH ORP (millivolts) DO (mg/L) Remarks ☐ Centrifugal pump with dedicated tubing X Other Gravity fed injection Pumping Rate: Well Constructed TD (ft): 20.00 Peroxide % \* Well TD (ft): Dilute Peroxide % 7% Silt Thickness (ft): Water (gal) Initial DTW (ft): Water column height (ft): Notes: One casing volume (gal):

Sample Method:

Time

N/A ⊠ Bailer □ Other □

= measured " = @ sampling

Sampled By: E. Nona

Gallons per foot of casing. 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Purged Water Drummed: ☐ Yes ☒ No No. of Drums: 0.00

\*\* Final DTW (ft):

Casing diameter (in):

Project Name: Springtown Gas								Well I.D.: MW-101						
	Project No.:	1409.2					Date: 3/1/2011							
	Project Location:	909 Blue	ebell D	rive										
		Livermo	re, CA	×				Gallons injected:	25					
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μ\$/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks					
-								-						
	Injection Method:	☐ Dedi	cated \	Waterra □Cen	ntrifugal pun	np with dedicated tu	bing 🗵 Oth	er G	aravity fed injection					
	Pumping Rate:			gal/min	75.0	37.1	17	-						
W	/ell Constructed TD (ft):	37.0	20	1		Peroxide %	50%							
	* Well TD (ft):			•		i didalad 70		- Dilute Peroxide % 7	%					
	Silt Thickness (ft):					Water (gal)	25	_						
	Initial DTW (ft):	(¥						-						
W	ater column height (ft):	12				Notes:								
C	ne casing volume (gal):													
	** Final DTW (ft):	-				Sampled By:	E. Nona	ou Dun						
	Casing diameter (in):	2'												
Sample M				Other 🗆		* = measured	** = @ sampling	] [	Purged Water Drummed:		⊠ No			
	Gallons per foot of casing.	2" dia. = 0.	17, 3" d	ia. = 0.38 4" dia. = 0.0	65, 5" dia. = 1	.02, 6" dia. = 1.48		,L	No. of Drums:		0.00			

Project Name: Springtown Gas							Well I.D.: MW-102						
	Project No.:	1409.2						Date:	3/1/2011				
	Project Location:	909 Blue	bell D	rive									
		Livermor						Gallons injected:	25				
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L		Remarks				
10:20													
	Injection Method:	☐ Dedic	cated V	Vaterra □Cer	ntrifugal pum	p with dedicated tu	bing 🗵 O	her	Gravity fed injection				
	Pumping Rate:		-	gal/min				<del></del>					
W	ell Constructed TD (ft):					Peroxide %	50%						
	* Well TD (ft):							— Dilute Peroxide %	7%				
	Silt Thickness (ft):					Water (gal)	25						
	Initial DTW (ft):						,	<del></del> -					
w	ater column height (ft):					Notes:							
0	ne casing volume (gal):	-						1 1					
	** Final DTW (ft):					Sampled By:	E. Nona	and ham					
	Casing diameter (in):	-						0					
Sample Me	ethod: Gallons per foot of casing.			Other  ia. = 0.38 4" dia. = 0.	65, 5" dia. = 1	* = measured .02, 6" dia. = 1.48	** = @ sampling		Purged Water Drummed: No. of Drums:				

	Project Name:	Springto	wn Ga	IS		Well I.D.: STMW-1					
	Project No.:	1409.2					Date: 3/3/2011				
	Project Location:	909 Blue	ebell D	rive							
		Livermo	re, CA				8	Gallons injected:	5		
Time	Cumulative Volume Purged (gal)	Temp	С°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L		Remarks		
								-			
	Injection Method:	☐ Dedi	cated \	Waterra □Cen	trifugal pum	p with dedicated tu	bing 🗵 O	ther	Gravity fed injection		
	Pumping Rate:			gal/min							
l w	ell Constructed TD (ff):	20.0	00			Peroxide %	50%				
	* Well TD (ft):	-					•	— Dilute Peroxide %	7%		
	Silt Thickness (ft):	190				Water (gal)	5				
	Initial DTW (ft):	-									
	ater column height (ft):					Notes:	1				
0	ne casing volume (gal):										
	** Final DTW (ft):					Sampled By:	E. Nona	33 Nm			
	Casing diameter (in):	2"									
Sample Me	ethod:	N/A ⊠ I	Bailer [	Other 🗆		* = measured	** = @ sampling		Purged Water Drummed:	; ⊠ No	
	Gallons per foot of casing.	2" dia. = 0.1	17, 3" d	ia. = 0.38 4" dia. = 0.6	65, 5" dia. = 1	.02, 6" dia. = 1.48			No. of Drums: 0		

Project Nar	ne: Springtow	n Gas			Well I.D.: STMW-2						
Project N	lo.: 1409.2				Date: 3/3/2011						
	on: 909 Blueb	nell Driv	/e								
110,000 20000	Livermore						Gallons injected:	5			
Cumulative Volui	ne Temp	C°	EC (μS/cm)	рН	ORP (millivolts)	DO (mg/L	)	Remarks			
		_									
	+	-		ļ. V							
	_	_					+				
							+				
	_	-									
	Da. :	3 3 3 3 3 3		roe r	- M. de Beeteld .						
Injection Meth				itrifugal pum	p with dedicated tu	bing 🗵 O	tner	Gravity fed injection			
Pumping Ra	ate:	g	al/min								
Well Constructed TD	(ft): 20.00	0			Peroxide %	50%					
* Well TD	(ft):						Dilute Peroxide %	7%			
Silt Thickness	(ft):	_			Water (gal)	5					
Initial DTW	(ft): -	_									
Water column height		_			Notes:						
One casing volume (	3										
** Final DTW					Sampled By:	E. Nona	900 Nm				
Casing diameter	(in): 2"										
Sample Method:	N/A ⊠ B	ailer 🗆	Other 🗆		* = measured	** = @ sampling		Purged Water Drummed:	☐ Yes ☒ No		
Gallons per foot of cas	ing. 2" dia. = 0.17	7, 3" dia.	= 0.38 4" dia. = 0.6	65, 5* dia. = 1	.02, 6" dia. = 1.48		_	No. of Drums:			

Time

Sample Method:

#### Peroxide Injection Field Log Project Name: Springtown Gas Well I.D.: P-1 Project No.: 1409.2 Date: 3/3/2011 Project Location: 909 Bluebell Drive Livermore, CA Gallons injected: 20 **Cumulative Volume** Purged (gal) Temp C° EC (µS/cm) pH ORP (millivolts) DO (mg/L) Remarks ☐Centrifugal pump with dedicated tubing X Other Gravity fed injection Pumping Rate: Well Constructed TD (ft): 20.00 Peroxide % \* Well TD (ft): Dilute Peroxide % 7% Silt Thickness (ft): Water (gal) Initial DTW (ft): Water column height (ft): One casing volume (gal): \*\* Final DTW (ft): Sampled By: E. Nona Casing diameter (in):

\*\* = @ sampling

= measured

0.00

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

N/A ⊠ Bailer □ Other □

Gallons per foot of casing. 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Project Name: Springtown Gas  Project No.: 1409.2								Well I.D.: <u>MW-101</u> Date: 3/3/2011					
	Project Location:	909 Blue		rive				Gallons injected:	25				
Time	Cumulative Volume Purged (gal)	Temp	c°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks				
	Injection Method:	☐ Dedic	cated V	Vaterra □Cen	trifugal pun	np with dedicated tu	bing 🗵 Othe	r(	Gravity fed injection				
	Pumping Rate:		-	gal/min									
W	ell Constructed TD (ft):	37.0	00			Peroxide %	50%						
	* Well TD (ft):					75 ASSA (100 AS)		Dilute Peroxide %	7%				
	Silt Thickness (ft):	141				Water (gal)	25	· ·					
	Initial DTW (ft):	*						5					
W	ater column height (ft):	-				Notes:							
0	ne casing volume (gal):	-						2 3					
	** Final DTW (ft):	-				Sampled By:	E. Nona	San A June					
	Casing diameter (in):	2"						$\supset$ .					
ample Me	ethod: Gallons per foot of casing.			l Other □ a. = 0.38 4* dia. = 0.6	55, 5* dia. = 1	* = measured	** = @ sampling		Purged Water Drummed: No. of Drums:	☐ Yes ☒ No			

Project No.: 1409.2 Date: 3/3/2011	
Project Location: 909 Bluebell Drive	
Livermore, CA Gallons injected: 25	
Cumulative Volume Time Purged (gal) Temp C° EC (μS/cm) pH ORP (millivolts) DO (mg/L) Remarks	
10:20	
Injection Method: Dedicated Waterra	
Pumping Rate: gal/min	
Well Constructed TD (ft): - Peroxide % 50%	
* Well TD (ft): Dilute Peroxide % 7%	
Silt Thickness (ft): Water (gal) 25	
Initial DTW (ft):	
Water column height (ft): Notes:	
One casing volume (gal):	
** Final DTW (ft): - Sampled By: E. Nona	
Casing diameter (in):	
Sample Method:  N/A  Bailer  Other  Purged Water Drummed:  Yes   Yes	No
Gallons per foot of casing. 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48	0.00

Project Nam	e: Springto	wn Ga	IS		Well I.D.: STMW-1					
Project No	o.: 1409.2				Date: 2/3/2011					
Project Locatio	n: 909 Blue	bell D	rive							
	Livermor						Gallons injected: _	8		
Cumulative Volum Time Purged (gal)	Temp	c°	EC (μS/cm)	рН	ORP (millivolts)	DO (mg/L)		Remarks		
	-									
	1									
	1									
Injection Metho	d: Dedi	cated V	Waterra	ntrifugal pum	p with dedicated tu	bing 🗵 Othe	er <u> </u>	Gravity fed injection		
Pumping Rat	te:		gal/min							
Well Constructed TD (	ft): 20.0	00	1		Peroxide %	50%	-			
* Well TD (	ft): -				Vall (2010) (2010) 2010 (2010) (2010)	N	Dilute Peroxide %	7%		
Silt Thickness (	ft):				Water (gal)	8		:		
Initial DTW (	ft):									
Water column height (	-				Notes:					
One casing volume (ga	-									
** Final DTW (					Sampled By:	E. Nona	an Don			
Casing diameter (i	n): 2"		]							
Sample Method:  Gallons per foot of casir			Other  ia. = 0.38 4* dia. = 0.	65, 5" dia. = 1	* = measured .02, 6" dia. = 1.48	** = @ sampling		Purged Water Drummed: No. of Drums:		

	Project Name:	Springto	wn Ga	S					Well I.D.: S	ΓMW-2	
	Project No.:	1409.2							Date: 2/	3/2011	
	Project Location:	909 Blue	ebell D	rive							
		Livermo	re, CA	il			8		Gallons injected:	8	
Time	Cumulative Volume Purged (gal)	Temp	С°	EC (μS/cm)	pН	ORP (millivolts)	DO	(mg/L)		Remarks	
		_						_			
-											
	Injection Method:	☐ Dedi	icated \	Vaterra □Cen	ntrifugal pum	np with dedicated tu	bina	⊠ Other	G	avity fed injection	
	Pumping Rate:		-		ianagai pan	p mar dodioatod to	9			avity led injection	
	A MANAGEMENT OF THE STATE OF TH			]				201			
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	'ell Constructed TD (ft):  * Well TD (ft):		1.000			Peroxide %	5	0%	Dilute Peroxide %	70/	
	Silt Thickness (ft):					Water (gal)		8	Dilute Peroxide %	7%	
	Initial DTW (ft):					water (gar)					
l w	ater column height (ft):					Notes:					
	ne casing volume (gal):					100000000000000000000000000000000000000			. \		
	** Final DTW (ft):					Sampled By:	E. Nor	a Ex	S. A don		
	Casing diameter (in):	2'						9			
Sample M	ethod:	N/A ⊠	Bailer [	☐ Other ☐		* = measured	** = @ sa	ampling	Γ	Purged Water Drummed:	∕es ⊠ No

	Project Name:	Springto	wn Ga	S				Well I.D.:	STMW-3	
	Project No.:	1409.2						Date:	2/3/2011	
	Project Location:	909 Blue	ebell D	rive						
		Livermor	e, CA				e e	Gallons injected:	26	
Time	Cumulative Volume Purged (gal)	Temp	c°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks	
				1						
	Injection Method:	☐ Dedi	cated \	Vaterra DCen	trifugal num	p with dedicated tu	bing 🗵 Othe	ar.	Gravity fed injection	
	Pumping Rate:			gal/min	iunugai pun	ip with dedicated to	bing En Othe		Gravity led injection	
				1						
V	Vell Constructed TD (ft):	-				Peroxide %	50%	*		
	* Well TD (ft):							Dilute Peroxide %	7%	
	Silt Thickness (ft): Initial DTW (ft):					Water (gal)	26	-1		
<sub>\</sub>	/ater column height (#):					Notes:				
	One casing volume (gal):					Notes.				
	** Final DTW (ft):					Sampled By:	E. Nona	e la		
	Casing diameter (in):		ri .				(8			
Sample N				Other		• = measured	** = @ sampling		Purged Water Drummed:	☐ Yes ⊠ No
	Gallons per foot of casing.	2" dia. = 0.1	17, 3" d	a. = 0.38 4" dia. = 0.0	65, 5" dia. = 1	.02, 6" dia. = 1.48		3	No. of Drums:	

	-13	vn Gas					Well I.D.:	P-1	
Project No.	: 1409.2						Date:	2/3/2011	
Project Location	: 909 Blue	bell Dri	ve						
	Livermore	e, CA					Gallons injected:	16	
Cumulative Volume Purged (gal)	Temp	C°	EC (µS/cm)	рН	ORP (millivolts)	DO (mg/l	.)	Remarks	
		_					-		
		_							
	ļ								
				1					
	-	-							
	D.B. st	-1-12	Пон	1.61		hia. V.	the second		
Injection Method			aterra □Cen	atrifugal pun	np with dedicated tu	bing ⊠ C	ther	Gravity fed injection	
Pumping Rate	:	g		trifugal pun			ther	Gravity fed injection	
	:	g		ntrifugal pun	p with dedicated tu				
Pumping Rate Well Constructed TD (ft)	20.0	g		trifugal pur		50%	Dilute Peroxide %		
Pumping Rate Well Constructed TD (ft) * Well TD (ft)	20.0	g		trifugal pur	Peroxide %	50%			
Pumping Rate  Well Constructed TD (ft)  * Well TD (ft)  Silt Thickness (ft)	20.0 20.0 3: - 3: -	g		trifugal pun	Peroxide %	50%		7%	
Pumping Rate  Well Constructed TD (ft)  * Well TD (ft)  Silt Thickness (ft)  Initial DTW (ft)  Water column height (ft)  One casing volume (gal)	20.0 20.0 - ): - ): - ): -	g		trifugal pur	Peroxide % Water (gal) Notes:	50%	Dilute Peroxide %	7%	
Pumping Rate  Well Constructed TD (ft)  * Well TD (ft)  Silt Thickness (ft)  Initial DTW (ft)  Water column height (ft)  One casing volume (gal)  ** Final DTW (ft)	20.00 20.00	- 6		trifugal pur	Peroxide % Water (gal) Notes:	50%	Dilute Peroxide %	7%	
Pumping Rate  Well Constructed TD (ft)  * Well TD (ft)  Silt Thickness (ft)  Initial DTW (ft)  Water column height (ft)  One casing volume (gal)	20.00 20.00	- 6		trifugal pun	Peroxide % Water (gal) Notes:	50%	Dilute Peroxide %	7%	

	Project Name:	Springto	wn Ga	S			_		Well I.D.: N	ИW-101	
	Project No.:	1409.2							Date: 2	2/3/2011	
	Project Location:	909 Blue	bell D	rive							
		Livermor	e, CA				-		Gallons injected:	24	
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO (	mg/L)		Remarks	
								_			
								-			
								_			
	Injection Method:			Vaterra □Cen	trifugal pun	np with dedicated tu	ubing [	☑ Other		Gravity fed injection	
V	Vell Constructed TD (ft):	37.0	00			Peroxide %	509	6			
	* Well TD (ft):	-						3	Dilute Peroxide %	7%	
	Silt Thickness (ft):					Water (gal)	24		_	.2	
	Initial DTW (ft):										
	/ater column height (#):					Notes:	:				
(	One casing volume (gal):								1		
	** Final DTW (ft):					Sampled By:	: E. Nona	6	- Dam		
	Casing diameter (in):	2"				2:			,		
Sample N	ethod: Gallons per foot of casing.			Other	es sadio - 1	* = measured	** = @ sam	oling		Purged Water Drummed: No. of Drums:	l Yes ⊠ No
	danons per loot of dasing.	2 dia. = 0.1	., 5 u	u. = 0.00 4 ula. = 0.0		U did 1,40			L	.10. 01 510110.	

	Project Name: Project No.: Project Location:	1409.2							Well I.D.: MW-102 Date: 2/3/2011			
		Livermor	e, CA	C .			•8		Gallons injected:	28		
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)	R	emarks		
10:20									/			
					-							
								-				
		D Dadie		V	tuit and non	an with dedicated to	hina					
	Injection Method: Pumping Rate:				itriiugai puri	np with dedicated tu	bing	Dillei	Gravity fee	njection		
	Pumping Hate:			gavmin								
W	/ell Constructed TD (ft):	-				Peroxide %	5	50%				
	* Well TD (ft):	E=8							Dilute Peroxide % 7%			
	Silt Thickness (ft):	6.51				Water (gal)		28				
	Initial DTW (ft):											
W	ater column height (ft):	520				Notes:						
0	ne casing volume (gal):	-										
	** Final DTW (ft):	1/2/				Sampled By:	E. No	na 🚤	Se Non			
	Casing diameter (in):	-						7	)			
Sample M	ethod:  Gallons per foot of casing.			Other  ia. = 0.38 4" dia. = 0.	65, 5" dia. = 1	* = measured .02, 6" dia. = 1.48	** = @ s	sampling	Pur	ged Water Drummed: No. of Drums:	☐ Yes	⊠ No

	Project Name:	1409.2						Well I.D.: <u>S'</u> Date: <u>2/</u>	TMW-1 /18/2011
	Project Location:	Livermor		rive				Gallons injected:	5
Time	Cumulative Volume Purged (gal)	Temp	С°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks
		-							
	Injection Method:	☐ Dedic	cated V	Vaterra □Cen	trifugal pum	p with dedicated tu	bing 🗵 Othe	er G	ravity fed injection
	Pumping Rate:			gal/min					
W	/ell Constructed TD (ft):	20.0	00			Peroxide %	50%		
	* Well TD (ft):							Dilute Peroxide %	7%
	Silt Thickness (ft):					Water (gal)	5	_	
	Initial DTW (ft):								
l w	ater column height (ft):					Notes:			
0	ne casing volume (gal):							1	
	** Final DTW (ft):					Sampled By:	E. Nona	gan lan	
	Casing diameter (in):	2"							
Sample M	ethod: Gallons per foot of casing.			Other  ia. = 0.38 4" dia. = 0.6	65, 5" dia. = 1	* = measured .02, 6* dia. = 1.48	** = @ sampling		Purged Water Drummed: ☒ Yes ☐ No No. of Drums: 4.5

Project Name	e: Springtown	Gas				Well I.D.: S	TMW-2	
Project No	.: 1409.2					Date: 2/	18/2011	
Project Location	n: 909 Bluebe	ell Drive						
,	Livermore,					Gallons injected:	5	
	_							
Cumulative Volum Time Purged (gal)		C° EC (μS/cm)	рН	ORP (millivolts)	DO (mg/L)		Remarks	
	-							
	-							
	<b>+</b>							
	+							
	1							
	1							
Injection Metho	d: Dedicat	red Waterra	trifugal nun	np with dedicated tu	bing 🗵 Other	r G	ravity fed injection	
Pumping Rat		- gal/min	ilinagai pan	ip min addidated to	5g — 5o.		ravity led injection	
4.10.404.074.084.084.084.08		=						
Well Constructed TD (f	1.0000000000000000000000000000000000000			Peroxide %	50%	Dilute Peroxide %	7%	
Silt Thickness (f	": <del></del>	-		Water (gal)	5	Dilute Peroxide %	176	
Initial DTW (f				water (gar)				
Water column height (f	7			Notes:	9			
One casing volume (ga								
** Final DTW (f				Sampled By:	E. Nona	S. A Dem		
Casing diameter (in	n): 2"				9			
Sample Method:	N/A ⊠ Bai	ler Other		* = measured	** = @ sampling	Г	Purged Water Drummed:	Yes 🗵 No
Jampie Metriou.				- measureu	- e samping		- arged Water Draining. —	0.000 0.000

	Project Name: Project No.: Project Location:	1409.2 909 Blueb	ell D						- 0.465	2/18/2011	
	3	Livermore	, CA						Gallons injected:	20	
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO	(mg/L)	,	Remarks	
		_									
	Injection Method: Pumping Rate:			Vaterra □Cen	trifugal pum	p with dedicated tu	bing	⊠ Othe	er	Gravity fed injection	
V	/ell Constructed TD (ft):	20.00	)			Peroxide %	5	0%			
	* Well TD (ft):	-							Dilute Peroxide %	7%	
	Silt Thickness (ft):					Water (gal)		20	_		
	Initial DTW (ft):	40									
W	/ater column height (ft):	<u> </u>				Notes:					
C	one casing volume (gal):	21			3				- 1		
	** Final DTW (ft):	•				Sampled By:	E. Nor	na Z	Jos Non		
	Casing diameter (in):	4"						Non			
Sample M	ethod: Gallons per foot of casing.			Other  a. = 0.38 4" dia. = 0.6	65, 5" dia. = 1	* = measured .02, 6" dia. = 1.48	** = @ S	ampling		Purged Water Drummed:  No. of Drums:	☐ Yes ☒ No

	Project Name:  Project No.:  Project Location:	1409.2						Well I.D.: M	/18/2011
	110,000 2000,1011	Livermore						Gallons injected:	25
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks
	Injection Method:			/aterra □Cen	trifugal pun	np with dedicated tu	bing 🗵 Oth	ner G	Gravity fed injection
W	/ell Constructed TD (ft):  * Well TD (ft):		0			Peroxide %	50%	- Dilute Peroxide % 7	%
	Silt Thickness (ft): Initial DTW (ft):					Water (gal)	25		
	ater column height (ft): One casing volume (gal):					Notes:		· · ·	
	** Final DTW (ft): Casing diameter (in):					Sampled By:	E. Nona	Sin Dun	
ample M	ethod:  Gallons per foot of casing.			Other   a. = 0.38 4* dia. = 0.6	35, 5" dia. =	* = measured	** = @ sampling	Ĭ [	Purged Water Drummed: ☐ Yes ☒ No No. of Drums:

	Project Name:	Springto	wn Ga	s				Well I.D.: MW-102
	Project No.:	1409.2						Date: 2/18/2011
	Project Location:	909 Blue	bell Di	rive				
		Livermor	e, CA					Gallons injected: 25
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)	Remarks
10:20								
						-		
		-				_		
	Injection Method:				trifugal pun	np with dedicated tu	bing 🗵 Other	Gravity fed injection
	Pumping Rate:			gal/min				
V	/ell Constructed TD (ft):					Peroxide %	50%	
	* Well TD (ft):	-						Dilute Peroxide % 7%
	Silt Thickness (ft):					Water (gal)	25	
	Initial DTW (ft):	-				11-11		
W	ater column height (ft):	-				Notes:		
C	ne casing volume (gal):							. \
	** Final DTW (ft):					Sampled By:	E. Nona	
	Casing diameter (in):						7	)
Sample M	ethod:  Gallons per foot of casing.			Other  a. = 0.38 4" dia. = 0.6	35, 5° dia. = 1	* = measured 1.02, 6" dia. = 1.48	** = @ sampling	Purged Water Drummed: ☐ Yes ☒ No No. of Drums:

	Project Name:	Springto	wn Gas	3					Well I.D.: 1	MW-103		
	Project No.:	1409.2							Date: 2	2/18/2011		
	Project Location:	909 Blue	ebell Dr	ive								
		Livermor	e, CA						Gallons injected:	30		
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)		Remarks		
10:20												
								_				
								_				
				/ D0	**************************************	np with dedicated tu	hina	⊠ Other				- 11
	Injection Method: Pumping Rate:			gal/min	triiugai pur	np with dedicated to	ibing	M Other	)]	Gravity fed injection	-	
_				gaviiiii								
W	/ell Constructed TD (ft):					Peroxide %	5	0%				
	* Well TD (ft):					W(-4 (1)		20	Dilute Peroxide %	7%	-0	
	Silt Thickness (ft): Initial DTW (ft):					Water (gal)		30				
W	ater column height (#):					Notes:	ű.					
	ne casing volume (gal):					Thomas and the second						
	** Final DTW (ft):	_				Sampled By:	E. No	na Far	A lam			
	Casing diameter (in):	-						7	- 1			
Sample M	ethod:  Gallons per foot of casing.			Other  a. = 0.38 4" dia. = 0.6	55, 5" dia. =	* = measured	** = @ S	ampling		Purged Water Drummed No. of Drums		⊠ No

	ne: Springtown (	Gas				Well I.D.: <u>ST</u> Date: <u>2/2</u>	<del></del>			
Project Location	bn: 909 Bluebell				Gallons injected: 5.5					
Cumulative Volun		C° EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks			
Injection Metho	od: Dedicate		ntrifugal pur	mp with dedicated tu	ubing	Gra	avity fed injection			
Well Constructed TD	(ft): 20.00			Peroxide %	50%					
* Well TD	(ft): -				<del></del>	Dilute Peroxide %	7%			
Silt Thickness	(ft): -			Water (gal)	94	-				
Initial DTW	(ft):				7X					
	(ft): -			Notes						
Water column height	7									
One casing volume (g	gal): -				<del>\</del>	1.				
	gal):			Sampled By	: A. Dorn	Un Dan				

	Project Name:	1409.2						Well I.D.: STMW-2  Date: 2/22/2011
	Project Location:	Livermor						Gallons injected: 5
Time	Cumulative Volume Purged (gal)	Temp	c°	EC (μS/cm)	рН	ORP (millivolts)	DO (mg	ng/L) Remarks
								*
Ti Ti								
	Injection Method:	☐ Dedic	cated V	Waterra □Cen	trifugal pun	np with dedicated tu	bing 🗵	Other Gravity fed injection
	Pumping Rate:		-	gal/min				
W	ell Constructed TD (ft):	20.0	00	1		Peroxide %	50%	
	* Well TD (ft):						<u> </u>	Dilute Peroxide % 7%
	Silt Thickness (ft):	- 4				Water (gal)	94	
	Initial DTW (ft):	- 8						
W	ater column height (ft):	8 -				Notes:		
0	ne casing volume (gal):							1 0 0
	** Final DTW (ft):					Sampled By:	A. Dorn	Sadu en
	Casing diameter (in):	2"					1	
mple Me	ethod:  Gallons per foot of casing.			Other  ia. = 0.38 4" dia. = 0.6	65, 5" dia. = "	* = measured 1.02, 6° dia. = 1.48	** = @ sampling	Purged Water Drummed: ☐ Yes ☒ No

	Project Name:	1409.2	41 -272			Well I.D.: STMW-3  Date: 2/22/2011					
	Project Location:	Livermore, 0					Gallons injected:	30			
ime	Cumulative Volume Purged (gal)	Temp (	C° EC (μS/cm)	pH	ORP (millivolts)	DO (mg/L)		Remarks			
	Injection Method:			entrifugal pun	np with dedicated tu	bing ⊠ Other	Grav	ity fed injection			
			- James Halle								
W	/ell Constructed TD (ft):		=		Peroxide %	50%					
W	/ell Constructed TD (ft):  * Well TD (ft):	20.00	3		Peroxide %	50%	Dilute Peroxide % 7%				
W		20.00			Peroxide % Water (gal)		Dilute Peroxide % 7%				
W	* Well TD (ft):	20.00					Dilute Peroxide % 7%				
	* Well TD (ft): Silt Thickness (ft):	20.00				94	Dilute Peroxide % 7%				
w	* Well TD (ft): Silt Thickness (ft): Initial DTW (ft):	20.00			Water (gal)	94	Dilute Peroxide % 7%				
w	* Well TD (ft): Silt Thickness (ft): Initial DTW (ft): ater column height (ft):	20.00			Water (gal)	94	Dilute Peroxide % 7%				

Project Location:	909 Blue	bell Di	rive			Well I.D.: P-1  Date: 2/22/2011					
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	e, CA					Gallons injected: 22				
nulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks				
		-									
							1.				
njection Method:	☐ Dedic	cated V	Vaterra □Cen	trifugal pun	np with dedicated tu	bing 🗵 Othe	er Gravity fed injection				
Pumping Rate:			gal/min								
onstructed TD (ft):	20.0	00			Peroxide %	50%					
The second secon							Dilute Peroxide % 7%				
Silt Thickness (ft):	5				Water (gal)	94					
Initial DTW (ft):	п										
olumn height (ft):	-				Notes:						
sing volume (gal):											
** Final DTW (ft):					Sampled By:	A. Dorn	Saller In				
sing diameter (in):	4"					2					
	Pumping Rate: onstructed TD (ft):  * Well TD (ft): Silt Thickness (ft): Initial DTW (ft): olumn height (ft): sing volume (gal): ** Final DTW (ft):	Pumping Rate:  20.0  * Well TD (ft):  Silt Thickness (ft):  Initial DTW (ft):  column height (ft):  sing volume (gal):  ** Final DTW (ft):	Pumping Rate:	Pumping Rate:  - gal/min  postructed TD (ft):  * Well TD (ft):  Silt Thickness (ft):  Initial DTW (ft):  sing volume (gal):  ** Final DTW (ft):  -	Pumping Rate: - gal/min  Instructed TD (ft): 20.00  * Well TD (ft): -  Silt Thickness (ft): -  Initial DTW (ft): -  sing volume (gal): -  ** Final DTW (ft): -	Pumping Rate: - gal/min  postructed TD (ft): 20.00  * Well TD (ft): -  Silt Thickness (ft): -  Initial DTW (ft): -  olumn height (ft): -  sing volume (gal): -  ** Final DTW (ft): -  Sampled By:	Pumping Rate:				

	Project Name:	Springto	wn Ga	s				Well I.D.: MW-101
	Project No.:	1409.2						Date: 2/22/2011
	Project Location:	909 Blue	bell D	rive				
		Livermor	e, CA					Gallons injected: 25
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	рН	ORP (millivolts)	DO (mg/L)	Remarks
_				,				
	Injection Method:	☐ Dedic	cated V	/aterra □Cen	trifugal pun	np with dedicated tu	bing 🗵 Other	Gravity fed injection
	Pumping Rate:		-	gal/min				
W	ell Constructed TD (ft):	37.0	0			Peroxide %	50%	
	* Well TD (ft):					1403 1003 500 515 500 515 500	grand the same of	Dilute Peroxide % 7%
	Silt Thickness (ft):					Water (gal)	94	
	Initial DTW (ft):	- 1				4100 1000		
W	ater column height (ft):					Notes:		
0	ne casing volume (gal):						,	0 ~
	** Final DTW (ft):					Sampled By:	A. Dorn	Seath Can
	Casing diameter (in):	2"					J	
Sample Me	ethod: Gallons per foot of casing.			Other  a. = 0.38 4" dia. = 0.6	65, 5" dia. = '	* = measured	** = @ sampling	Purged Water Drummed: ☐ Yes ☒ No No. of Drums:

			wn Ga	5				Well I.D.: MW-102			
	Project No.:	1409.2						Date: 2/22/2011			
	Project Location:	909 Blue	ebell Di	rive							
		Livermor						Gallons injected: 27.5			
Cu Time	umulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	рН	ORP (millivolts)	DO (mg/L)	Remarks			
	Injection Method: Pumping Rate:			Vaterra □Cen	ntrifugal pun	np with dedicated tul	oing 🗵 Other_	Gravity fed injection			
Well	Constructed TD (ft):					Peroxide %	50%				
	* Well TD (ft):	22						Dilute Peroxide % 7%			
	Silt Thickness (ft):	Į.				Water (gal)	94				
	Initial DTW (ft):	-									
	r column height (ft):					Notes:					
One	casing volume (gal):					2	1	A T			
	** Final DTW (ft):					Sampled By:	A. Dorn	ally Jopa			
	asing diameter (in):										

	Project Name: Project No.:	1409.2						Well I.D.: <u>STN</u> Date: <u>2/24</u>		
	Project Location:	909 Blue		rive				Gallons injected:	5	
ime	Cumulative Volume Purged (gal)	Temp	С°	EC (μS/cm)	рН	ORP (millivolts)	DO (mg/L)		Remarks	
_										
									Y	
+-										
	Injection Method: Pumping Rate:			Vaterra □Cen	ntrifugal pun	np with dedicated tu	bing 🗵 Other	r <u>Gra</u>	vity fed injection	
W	/ell Constructed TD (ft):	20.0	00			Peroxide %	50%			
	* Well TD (ft):	75						Dilute Peroxide %	7%	
	Silt Thickness (ft):					Water (gal)	94			
	Initial DTW (ft):									
W	ater column height (ft):					Notes:				
O	one casing volume (gal):						A			
	** Final DTW (ft):					Sampled By:	A. Dorn	and line on		
	Casing diameter (in):	2"								
-	ethod:			Other		* = measured	** = @ sampling	_	Purged Water Drummed:	l Voc

	Project Name:  Project No.:  Project Location:	1409.2		or				Well I.D.: <u>ST</u> Date: <u>2/2</u>	
		Livermore	e, CA					Gallons injected:	5.25
Гime	Cumulative Volume Purged (gal)	Temp	C°	EC (µS/cm)	рН	ORP (millivolts)	DO (mg/L)		Remarks
-			_						
			-						
	Injection Method: Pumping Rate:			Vaterra □Cen	trifugal pun	np with dedicated tu	bing 🗵 Other	Gra	avity fed injection
W	ell Constructed TD (ft):	20.0	0			Peroxide %	50%		
	* Well TD (ft):							Dilute Peroxide %	7%
	Silt Thickness (ft):	2				Water (gal)	94		
	Initial DTW (ft):	-							
	ater column height (ft):	-				Notes:			
W			- 1				1	$\rho$	
	ne casing volume (gal):						Λ.	A. V	
	ne casing volume (gal):  ** Final DTW (ft):  Casing diameter (in):	- 8				Sampled By:	A. Dorn	du Jan	

#### Peroxide Injection Field Log Well I.D.: P-1 Project Name: Springtown Gas Date: 2/24/2011 Project No.: 1409.2 Project Location: 909 Bluebell Drive Gallons injected: 19.5 Livermore, CA **Cumulative Volume** pH ORP (millivolts) DO Temp C° EC (µS/cm) (mg/L) Remarks Purged (gal) Other ☐ Centrifugal pump with dedicated tubing Gravity fed injection Pumping Rate: Well Constructed TD (ft): 20.00 Peroxide % Dilute Peroxide % 7% \* Well TD (ft): Silt Thickness (ft): Water (gal) Initial DTW (ft): Water column height (ft): Notes: One casing volume (gal): Sampled By: A. Dorn \*\* Final DTW (ft): Casing diameter (in):

Sample Method:

Time

N/A ⊠ Bailer □ Other □

Gallons per foot of casing. 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

\*\* = @ sampling = measured

No. of Drums:

Purged Water Drummed: ☐ Yes ☒ No

	Project Name:	1409.2						Well I.D.: MW-101  Date: 2/24/2011	
	Project Location:	909 Blue		ive			*	Gallons injected: 29.5	
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	pH	ORP (millivolts)	DO (mg/L)	Remarks	
_					V				
_									
	Injection Method:	☐ Dedic	cated V	Vaterra □Cen	trifugal pun	np with dedicated tu	oing 🗵 Other_	Gravity fed injection	
	Pumping Rate:		-	gal/min					
W	ell Constructed TD (ft):	37.0	0			Peroxide %	50%		
	* Well TD (ft):	-						Dilute Peroxide % 7%	
	Silt Thickness (ft):	7.				Water (gal)	94		
	Initial DTW (ft):	-							
W	ater column height (ft):	-				Notes:			
С	ne casing volume (gal):						A	1	
	** Final DTW (ft):					Sampled By:	A. Dorn	Man Jan	
	Casing diameter (in):	2"					7 (0		
ample M	ethod:  Gallons per foot of casing.			Other  a. = 0.38 4" dia. = 0.6	65, 5" dia. =	* = measured 1.02, 6" dia. = 1.48	** = @ sampling	Purged Water Drummed:	es 🗵 No

	Project Name: Project No.: Project Location:	1409.2					Well I.D.: MW-102  Date: 2/24/2011					
		Livermor	re, CA				8		Gallons injected:	35		
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)		Remarks		
10:20												
-								_				
-												
+												
	Injection Method:	☐ Dedi	cated V	Vaterra □Cen	trifugal pun	np with dedicated tu	bing		Gravit	y fed injection		
	Pumping Rate:			gal/min		6 : • (1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1				,		
	(M. 1988) (							200/				
V	/ell Constructed TD (ft):  * Well TD (ft):					Peroxide %		50%	Dilute Peroxide % 7%			
	Silt Thickness (ft):					Water (gal)		94	Dilute Peroxide /6 1/6			
	Initial DTW (ft):					water (gai)		34				
W	ater column height (#):					Notes:						
	one casing volume (gal):					110100.		1	2			
	** Final DTW (ft):					Sampled By:	A. Doi	n Au	Hun Dan			
	Casing diameter (in):							7 20	Av. Jack			
ımple M	ethod:  Gallons per foot of casing.			Other  ia. = 0.38 4* dia. = 0.0	65, 5" dia. =	* = measured	** = @ s	ampling		Purged Water Drummed:	es 🗵 No	

	Project Name:	Springto	wn Ga	S				Well I.D.: MW-103					
	Project No.:	1409.2							Date: 2/24/2011				
	Project Location:	909 Blue	ebell Di	rive									
		Livermor							Gallons injected:30	0			
Time	Cumulative Volume Purged (gal)	Temp	C°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)	Remark	ks			
								-					
								_					
	Injection Method:	☐ Dedic	cated V	/aterra □Cent	rifugal pun	np with dedicated tu	bing	Other	Gravity fed inject	tion			
	Pumping Rate:		-	gal/min				_					
We	ell Constructed TD (ft):					Peroxide %	5	0%					
	* Well TD (ft):					l croxide 70		070	Dilute Peroxide % 7%				
	Silt Thickness (ft):	*				Water (gal)		94					
	Initial DTW (ft):												
Wa	iter column height (ft):					Notes:							
Or	e casing volume (gal):							A	1				
	** Final DTW (ft):					Sampled By:	A. Dor	n /	aden Jen				
	Casing diameter (in):	-											
Sample Me	thod: Gallons per foot of casing.			Other   a. = 0.38 4" dia. = 0.69	5, 5" dia. = 1		** = @ sa	ımpling	Purged Wa	ater Drummed:	⊠ No		