

APPENDIX F
METHANE REPORT



Converse Consultants

Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

April 22, 2020

Ms. Sarah Walker
Planning Project Manager
National Community Renaissance of CA
9421 Haven Avenue
Rancho Cucamonga, California 91730

Subject: **REPORT - SITE TESTING FOR METHANE**
1314 North Angelina Drive
Placentia, California
Converse Project No. 19-42-206-02

Ms. Walker:

Converse Consultants (Converse) appreciates this opportunity to present our report of the methane testing that was conducted at 1314 North Angelina in the city of Placentia, California herein referred to as the Site. The Site location is indicated on **Figure 1** attached. The work was conducted in accordance with our proposal dated January 28, 2020 and Purchase Order PO01-0920pbs.1.

Background

The Site, located at 1314 North Angelina Drive, Placentia, California, is owned by the Archdiocese of Los Angeles, and is currently occupied by the Blessed Sacrament Church, which utilizes the Site as a church and kindergarten.

The Site consists of one (1), rectangular shaped parcel and is approximately 3.6-acres in area. The Orange County Assessor's Parcel Number (APN) for the Site is 340-273-25. The Site is generally level and is developed with three (3), single-story buildings; an 8,000 square-foot (sf) church and parish hall, and a 4,000-sf classroom building. The remainder of the Site is covered with asphalt-paved parking and landscaped areas.

The Site is located approximately 300 feet above mean sea level with surface topography sloping towards the east/southeast (United States Geological Survey [USGS] Topographic Map, Yorba Linda, California, 2015). The Site is underlain by unconsolidated and semi-consolidated alluvium, lake, playa, and terrace deposits (Division of Mines and Geology, Geologic Map of California, 2010).

The Site is located in the Richfield Oil Field and will require compliance with Orange County Fire Authority (OCFA) Guideline C-03 for assessment and mitigation of combustible soil gas.

The location of the Site in the Richfield Oil Field was identified in a Phase I Environmental Site Assessment (ESA) Report dated January 6, 2020 as an environmental concern (A copy of the Phase I ESA can be provided upon request). The nearest identified oil well (identified as 1-BC Chevron USA) was reported to be located approximately 450 feet south west of the southwest corner of the Site. See **Figure 2** for proximity of oil well 1-BC Chevron to the location of the Site.

Proposed Project

Converse understands that the currently proposed project is to provide affordable senior apartments, a community room, church sanctuary, parish hall, office and classrooms.

The proposed development of the Site consists of the removal of the existing parish hall and the construction of:

- 24,198-sf building housing 32 dwelling units
- 30,152-sf building housing 33 dwelling units
- 3,960-sf community building

In addition, landscaping, parking and recreational areas will be provided.

The proposed buildings will be slab on grade construction. See **Figure 3** for the plan of the proposed project.

Scope of Work

Based on the location of the Site in the Richfield Oil Field, and the proposed redevelopment of the Site, a soil gas investigation was determined to be required. A soil gas investigation was conducted to evaluate the Site for the presence of oil field gasses.

The investigation consisted of nine (9) borings advanced at the Site. Borings were advanced using direct push technology to maximum depths of 20-feet below ground surface (bgs). Vapor probes were placed in each boring at three (3) depths; 5 feet, 10 feet, and at the maximum achievable depth of each boring (between 15 and 20 feet) bgs. Vapor probes were installed in general accordance with the Joint DTSC Water Board Soil Gas Advisory dated June 2015. See **Figure 4** for the current Site configuration and boring locations.



Probe Installation

Proposed probe locations were marked 72 hours prior to installation, and Underground Service Alert was notified. On April 15, 2020, nine (9) borings (M1 through M9) were advanced using a direct-push (Geoprobe) drill rig operated by Interphase Environmental. Boring locations are indicated on **Figure 4**. Probes were installed in these boreholes as follows:

- Probes M1 through M4 and M6 were advanced to a depth of 20-feet bgs with probes set at depths of 20, 10 and 5-feet bgs.
- Probe M-5 was advanced to a depth of 17.5-feet bgs due to refusal. Probes were set at depths of 17, 10 and 5-feet bgs.
- Probes M-7 and M-8 were advanced to a depth of 15-feet bgs due to refusal. Probes were installed at depths of 5, 10 and 15-feet bgs.
- Probe M-9 was advanced to a depth of 19-feet bgs due to refusal. Probes were set at depths of 19, 10 and 5-feet bgs.

Probes consisted of a ½-inch long stainless-steel probe tip attached to ¼-inch diameter nylaflow tubing. Six (6)-inches of sand was initially placed in the bottom of the borehole and then the probe tip was placed in the borehole followed by another 6-inches of sand. 12-inches of granular bentonite was then placed, followed by hydrated bentonite chips up to the next probe interval where the process was repeated. The borehole was sealed with hydrated bentonite chips up to 2 feet bgs. The probes were marked to identify the depth and boring number.

Monitoring

Soil gas was evaluated for methane, hydrogen sulfide, oxygen, and carbon dioxide gas concentrations. Vapor pressure within the probes was also measured. Two sets of measurements were taken a minimum of 24 hours apart. Probes were allowed to equilibrate a minimum 2-hours after installation before the initial readings were taken.

Field monitoring was conducted using a LANDTEC GEM 5000 Gas Analyzer. The GEM 5000 is an infrared gas analyzer that measures methane, carbon dioxide and oxygen in percent by volume (%), hydrogen sulfide in parts per million volume (ppmv), static pressure in inches of water (In-H₂O), and differential pressure in inches of mercury (In-Hg).

Monitoring was conducted by connecting the GEM 5000 directly to the probe tubing. The differential pressure in the tubing (between the subsurface and atmosphere) was measured when the three-way valve on the tubing was opened. After recording the pressure in each of the probes in the borehole, the pump of the meter was activated and allowed to run until



the gas readings stabilized, indicating that the tubing had been purged and the readings were representative of the subsurface conditions.

Monitoring Results

Monitoring of the probes was conducted on April 15 and 16, 2020. During the first round of measuring, differential pressure ranged from -1.86 to 0.08 to In-H₂O. Methane was detected at the detection limit of 0.1% (1,000 ppmv) in 16 of the 27 probes. No sample was obtained from the 5 and 10-foot probes at location M4 due to no flow. Hydrogen sulfide was detected in 6 of the 27 probes at the detection limit of 1 ppmv.

During the second round of measuring, differential pressures ranged from -1.29 to 0.06 In-H₂O. Methane was not detected at the detection limit of 0.1% (1,000 ppmv) in any of the probes. As in the initial round, no sample was obtained from the 5 and 10-foot probes at location M4. Hydrogen sulfide was detected at a detection limit of 1 ppmv in 3 of the 27 probes.

The monitored soil gas parameters are presented on **Table 1**.

Recommendations

Based upon the measured concentration of methane less than or equal to 1,000 ppm and the location of the Site outside of the 300-foot prescribed distance from a plugged oil and gas well, no further action is recommended.

Per OCFA Guideline C-03 this report should be submitted to the OCFA for their review and approval that no further mitigation efforts are required.

Closure/Reliance

This report is for the sole benefit and exclusive use of National Community Renaissance of CA in accordance with the terms and conditions that are presented in our proposal dated January 28, 2020 and Purchase Order PO01-0920pbs.1 under which these services have been provided. The preparation of this report has been in accordance with generally accepted environmental practices. No other warranty, either express or implied, is made. This report should not be regarded as a guarantee that no further contamination beyond that which could be detected within the scope of this assessment is present at the Site.

This report should not be regarded as a guarantee that no further contamination, beyond that which could be detected within the scope of this assessment, is present at the Site. Converse makes no warranties or guarantees as to the accuracy or completeness of



information provided or compiled by others. It is possible that information exists beyond the scope of this assessment. It is not possible to absolutely confirm that no hazardous materials and/or substances exist at the Site. If none are identified as part of a limited scope of work, such a conclusion should not be construed as a guaranteed absence of such materials, but merely the results of the evaluation of the Site at the time of the assessment. Also, events may occur after the Site visit, which may result in contamination of the Site. Additional information, which was not found or available to Converse at the time of report preparation, may result in a modification of the conclusions and recommendations presented.

Any reliance on this report by Third Parties shall be at the Third Party's sole risk. Should National Community Renaissance of California wish to identify any additional relying parties not previously identified, a completed Application of Authorization to Use (see following page) must be submitted to Converse Consultants.

Thank you for this opportunity to be of service. Should you have questions regarding this confirmation of services letter, please contact either John Ziegler at (626) 930-1234.

Sincerely,

CONVERSE CONSULTANTS

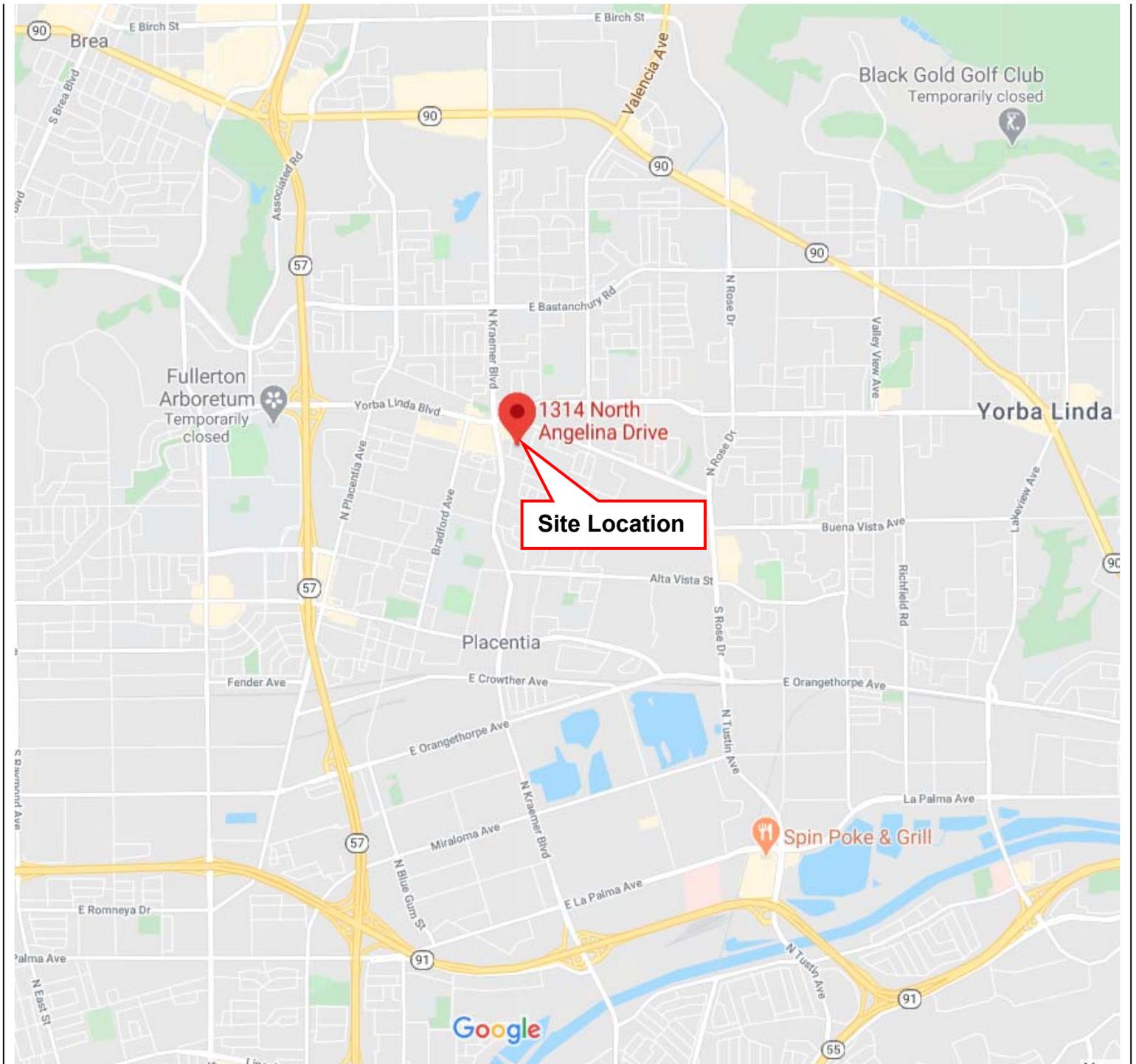
John Ziegler, RA
Senior Professional

Michael Van Fleet, PG
Senior Geologist

Attch: Figures 1, 2, 3 and 4
Table 1 – Field Monitored Soil Gas Parameters

Dist: 2/Addressee





SITE LOCATION MAP



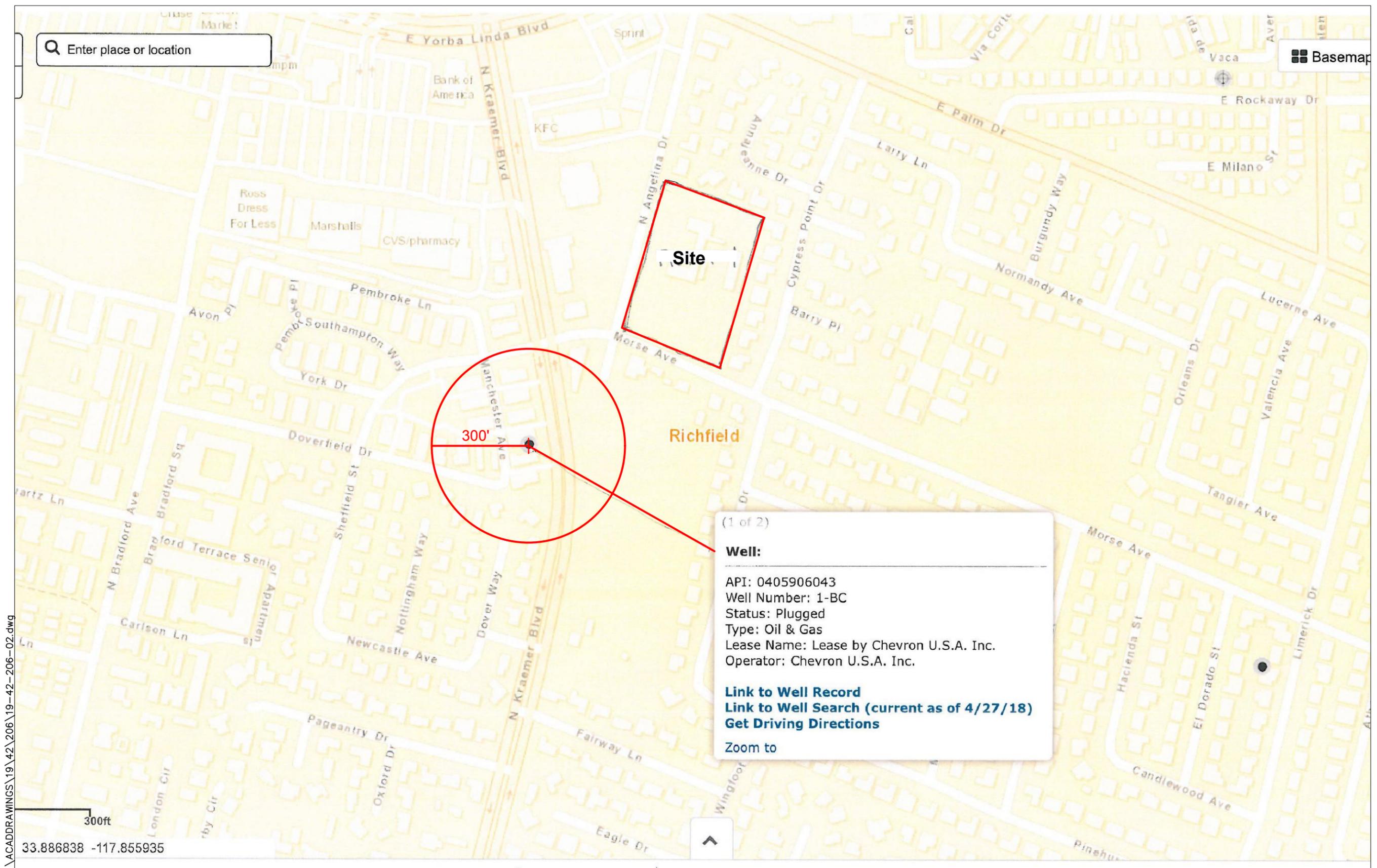
National Community Renaissance of CA
 1314 N. Angelina Drive
 Placentia, California 92870

Project No:
 19-42-206-02



Converse Consultants

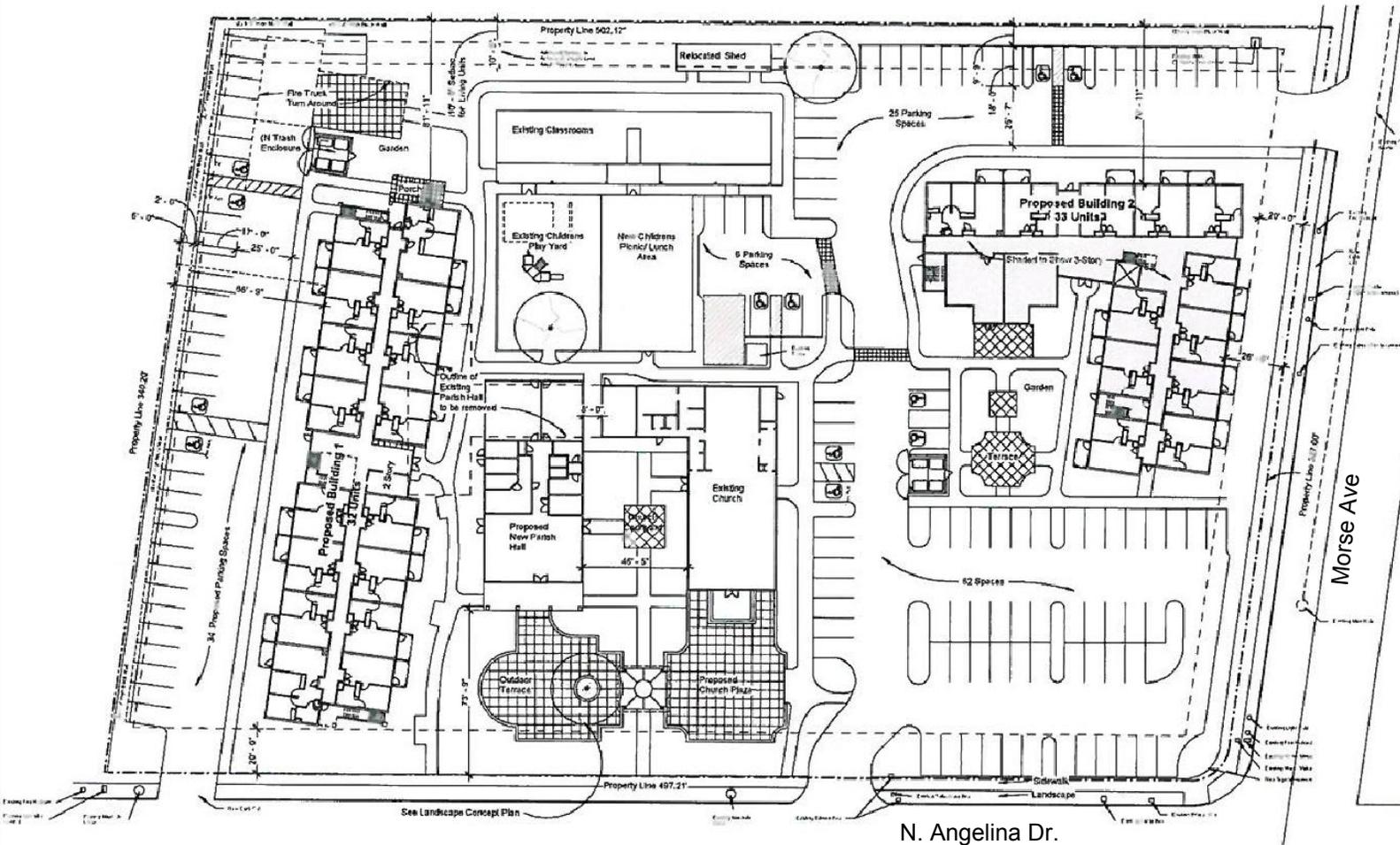
FIGURE 1



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33.886838 -117.855935

SITE AND WELL LOCATIONS



Site Coverage

Name	Area	Percentage
Lot Area (SF) :		169,716 SF/ 3.90 acres
Maximum Lot Coverage allowed:		60% (101,630 SF)
Proposed Lot Coverage:		55%
Building Footprints (Existing and Proposed)		35,631 SF
Parking and Driveways		53,824 SF
Covered Patios		3,678 SF
Total Proposed Lot Coverage		93,133 SF (55%)
Percentage Open Space Required:		40%
Percentage Open Space Provided:		45%

Residential Unit Count

	One Bedroom	Two Bedroom
Building 1	28	4
Building 2	31	2
	69 units	6 units
Total Residential Units:	65	

PROPOSED SITE PLAN



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SAMPLE LOCATION MAP - CURRENT SITE CONFIGURATION

 BORING LOCATION

 **Converse Consultants**

NATIONAL COMMUNITY RENAISSANCE OF CA
1314 NORTH ANGELINA
PLACENTIA, CA

Project No.
19-42-206-02

FIGURE NO
4

Table 1
Field Monitored Soil Gas Parameters
National Community Renaissance of CA
1314 N. Angelina
Placentia, CA

Boring ID	Depth (feet bgs)	Date	Time	Differential Pressure (Inches H ₂ O)	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Hydrogen Sulfide (ppmv)	Carbon Monoxide (ppmv)	Balance (%)	Barometric Pressure (Inches Hg)
M1	5	4/15/2020	12:15	0.00	0.1	3.6	14.4	0	2	81.9	29.62
		4/16/2020	12:16	0.03	0.0	3.7	14.5	0	0	81.7	29.54
	10	4/15/2020	12:18	0.01	0.1	2.8	15.1	0	0	81.8	29.62
		4/16/2020	12:18	0.01	0.0	4.4	15	0	0	81.4	29.54
	20	4/15/2020	12:20	0.01	0.1	4.5	15.0	0	0	80.4	29.62
		4/16/2020	12:20	0.00	0.0	1.3	18.0	0	0	81.6	29.54
M2	5	4/15/2020	12:30	0.00	0.1	1.8	14.9	0	0	83.2	29.62
		4/16/2020	12:31	0.02	0.0	1.3	18.0	0	0	80.7	29.54
	10	4/15/2020	12:33	0.00	0.1	2.3	13.9	1	0	83.7	29.62
		4/16/2020	12:33	-0.04	0.0	3.2	14.9	0	0	81.9	29.54
	20	4/15/2020	12:35	0.04	0.1	5.3	14.2	0	0	80.4	29.62
		4/16/2020	12:35	0.03	0.0	5.1	14.4	1	0	80.6	29.54
M3	5	4/15/2020	12:41	0.08	0.1	0.2	18.7	1	0	81.1	29.62
		4/16/2020	12:46	0.03	0.0	1.0	12.6	4	0	86.4	29.54
	10	4/15/2020	12:43	0.05	0.0	6.4	12.9	1	0	80.6	29.62
		4/16/2020	12:47	-0.02	0.0	6.5	12.6	0	0	80.8	29.54
	20	4/15/2020	12:45	0.02	0.1	85.2	12.9	0	0	81.8	29.62
		4/16/2020	12:49	0.00	0.0	5.8	12.7	0	0	81.4	29.54

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Field Monitored Soil Gas Parameters
National Community Renaissance of CA
1314 N. Angelina
Placentia, CA

Boring ID	Depth (feet bgs)	Date	Time	Differential Pressure (Inches H ₂ O)	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Hydrogen Sulfide (ppmv)	Carbon Monoxide (ppmv)	Balance (%)	Barometric Pressure (Inches Hg)
M4	5	4/15/2020	12:56	-1.86	No Flow						29.67
		4/16/2020	--	-1.29							29.54
	10	4/15/2020	12:58	--	No Flow						29.67
		4/16/2020	--	0.06							29.54
	20	4/15/2020	13:00	0.05	0.0	5.3	13.1	0	0	81.5	29.67
		4/16/2020	13:00	0.02	0.0	5.4	12.7	0	0	81.8	29.56
M5	5	4/15/2020	13:36	-0.01	0.1	2.2	16.1	0	0	81.6	29.68
		4/16/2020	13:36	-0.01	0.0	3.0	15.5	1	0	81.6	29.59
	10	4/15/2020	13:38	-0.02	0.1	3.7	14.6	0	0	81.6	29.68
		4/16/2020	13:38	0.00	0.0	4.8	14.5	0	0	80.6	29.59
	17	4/15/2020	13:40	0.00	0.0	5.4	14.8	0	0	81.6	29.68
		4/16/2020	13:40	0.00	0.0	5.4	14.3	0	0	80.3	29.59
M6	5	4/15/2020	13:46	0.05	0.1	1.2	16.9	0	0	81.8	29.68
		4/16/2020	13:47	-0.01	0.0	2.1	16.4	0	0	81.5	29.64
	10	4/15/2020	13:48	0.01	0.1	2.8	14.9	1	9	82.0	29.68
		4/16/2020	13:49	0.00	0.0	3.9	15.2	0	0	80.9	29.64
	20	4/15/2020	13:50	0.02	0.1	4.0	15.0	0	0	80.6	29.68
		4/16/2020	13:51	0.00	0.0	5.0	14.5	0	0	80.5	29.64

Table 1
Field Monitored Soil Gas Parameters
National Community Renaissance of CA
1314 N. Angelina
Placentia, CA

Boring ID	Depth (feet bgs)	Date	Time	Differential Pressure (Inches H ₂ O)	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Hydrogen Sulfide (ppmv)	Carbon Monoxide (ppmv)	Balance (%)	Barometric Pressure (Inches Hg)
M7	5	4/15/2020	13:55	0.03	0.1	2.1	15.8	0	0	82.0	29.69
		4/16/2020	14:01	0.00	0.0	3.2	15.4	0	0	81.4	29.64
	10	4/15/2020	14:00	0.01	0.1	7.6	14.6	1	15	80.7	29.69
		4/16/2020	14:03	-0.01	0.0	4.4	14.7	0	0	80.9	29.64
	15	4/15/2020	14:05	0.00	0.1	6.0	14.2	0	0	79.7	29.69
		4/16/2020	14:05	0.00	0.0	5.9	14.1	0	0	80.0	29.64
M8	5	4/15/2020	14:40	0.03	0.0	5.5	14.1	0	0	80.4	29.70
		4/16/2020	14:41	-0.01	0.0	3.1	15.7	0	0	81.2	29.65
	10	4/15/2020	14:43	0.05	0.0	5.0	14.2	0	0	80.8	29.70
		4/16/2020	14:43	0.02	0.0	5.1	14.6	0	0	80.3	29.65
	15	4/15/2020	14:45	0.00	0.0	5.7	14.0	0	0	80.3	29.69
		4/16/2020	14:45	0.01	0.0	6.0	14.3	0	0	79.7	29.65
M9	5	4/15/2020	15:06	0.01	0.0	0.6	18.6	0	0	80.8	29.69
		4/16/2020	15:08	0.00	0.0	2.3	16.3	0	0	81.4	29.65
	10	4/15/2020	15:08	0.03	0.0	3.5	14.8	1	0	81.7	29.70
		4/16/2020	15:10	0.00	0.0	2.9	13.6	0	0	83.5	29.65
	19	4/15/2020	15:10	-0.02	0.0	3.8	14.2	0	0	82.0	29.70
		4/16/2020	15:12	0.01	0.0	4.3	14.2	0	0	81.5	29.65