EXHIBIT I

ACOUSTICAL NOISE STUDY

Minard Run Oil Company

609 South Avenue

Bradford, PA 16701

Integrity Engineering PLLC
Sherman Compressor Station
Sound Study

Test Dates: March 7th and 20th, 2018

Submitted to

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Integrity Engineering, Seneca Falls, NY
Sherman Compressor Station Sound Study
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Background

4X Diagnostics was contracted by Integrity Engineering to complete a noise survey at and around the Sherman Compressor Station located in Seneca County at 1680 Mound Rd, Waterloo, NY.

The Minard Run Oil Company currently operates two natural gas, spark-ignition, reciprocating engines (SI RICE) that drive compressors moving natural gas from producing well sites and Seneca High BTU Facility to end users. Both compressors together total 787 HP. The compressors are equipped with mufflers rated for a sound attenuation of 30-38 dBA. Figure 1 is a picture of the Sherman Compressor Station.

The survey objectives were to baseline day/night noise outside of the specially designed compressor building and at adjacent properties and estimate the noise levels with a new 600 HP compressor installed in the building.

Figure 1
Sherman Compressor Station

Instrumentation

Sound/Noise Testing

a. Bruel & Kjaer Precision Integrating Sound Level Meter: Provides general purpose Class 1 sound measurements used in occupational and environmental noise assessment including "A" and "C" weighting filters.

Figure 2
Bruel & Kjaer Precision Integrating Sound Level Meter

b. Bruel & Kjaer Photon Dynamic System Analyzer: Provides sound and vibration measurements, recording and signal post-processing, including third-octave spectrums and transient capture. The Photon analyzer is USB connected to a tablet computer.

Figure 3
Bruel & Kjaer Photon Dynamic Signal Analyzer

1. Site Description & Test Locations

The Sherman Compressor Station is in a wooded rural area at the north edge of the Seneca Meadows Landfill 1560 feet west of State Route 414 (Mound Road), 2069 feet east of Route 106 (Burgess Road), and 2640 feet south of Strong Road.

The compressor site is zoned M2 Refuse Disposal. The town of Seneca Falls noise ordinance states: *No noise measured at a property line of an industrially zoned property shall exceed 70 decibels during the period between 6:00 a.m. and 10:00 p.m. or 60 decibels during the period between 10:00 p.m. and 6:00 a.m. The decibel limits shall be decreased by five decibels for any industrially zoned property adjacent to a residentially zoned property. The sound level may not exceed the established sound levels by more than six decibels for a period of more than six minutes during any sixty-minute continuous period.* It is not clear if there is a noise ordinance difference between industrial and M2 zoning.

Noise-sensitive receptors (NSRs) selected for the test are as follows:

- Sherman Compressor Station – 15 ft. from the building on the east and west.
- Station driveway, 800 feet east of the Station (1/2 the length to Mound Road).
- NSR-1, Residence to the east, 1560 feet away at the Station property line.
- NSR-2, Business to the north, 1515 feet away at the Station property line.
- NSR-3, Residence to the west, 2069 feet away on Rt. 106 facing the Station.

Figures 4-7 are maps of the Station and adjacent test locations.

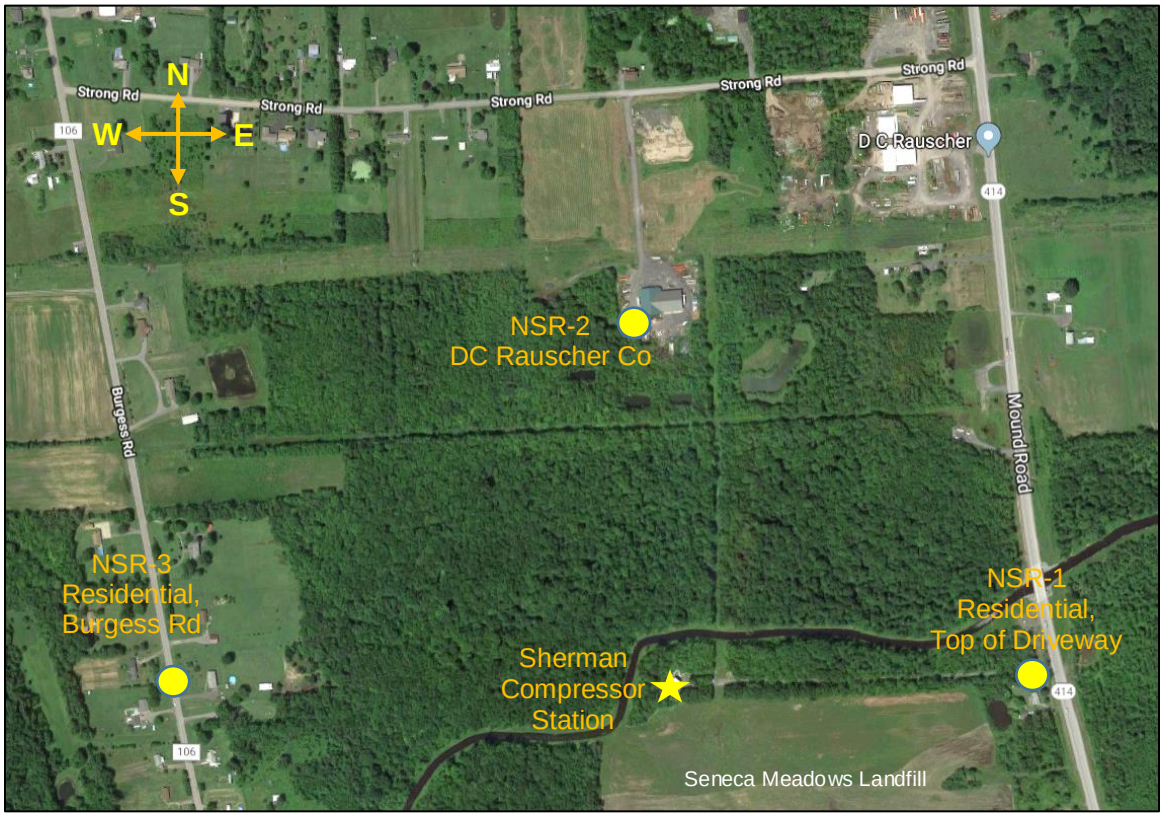

Figure 4
Map of Test Locations

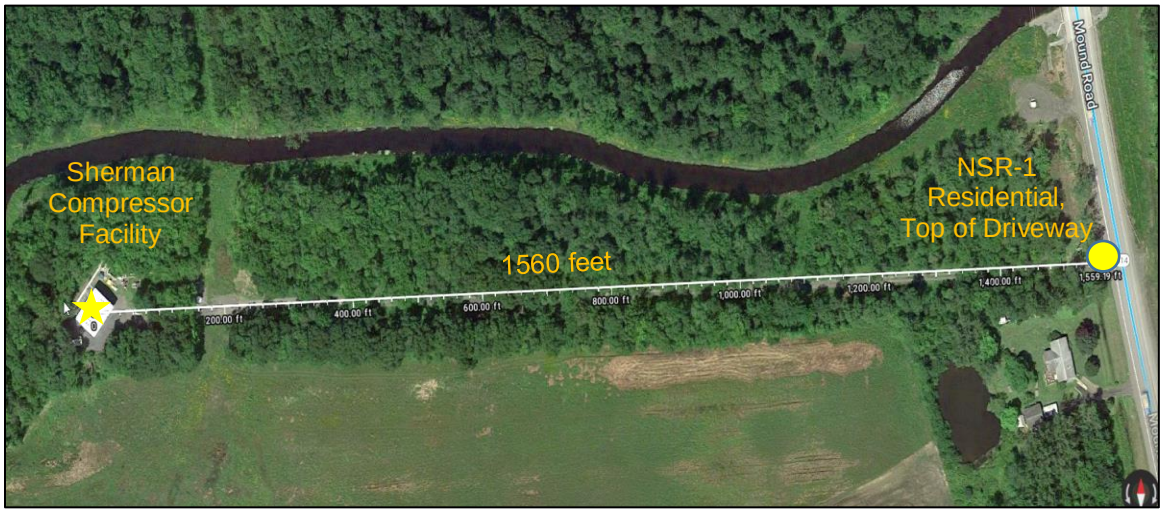

Figure 5
Compressor Station to NSR-1

Figure 6
Compressor Station to NSR-2

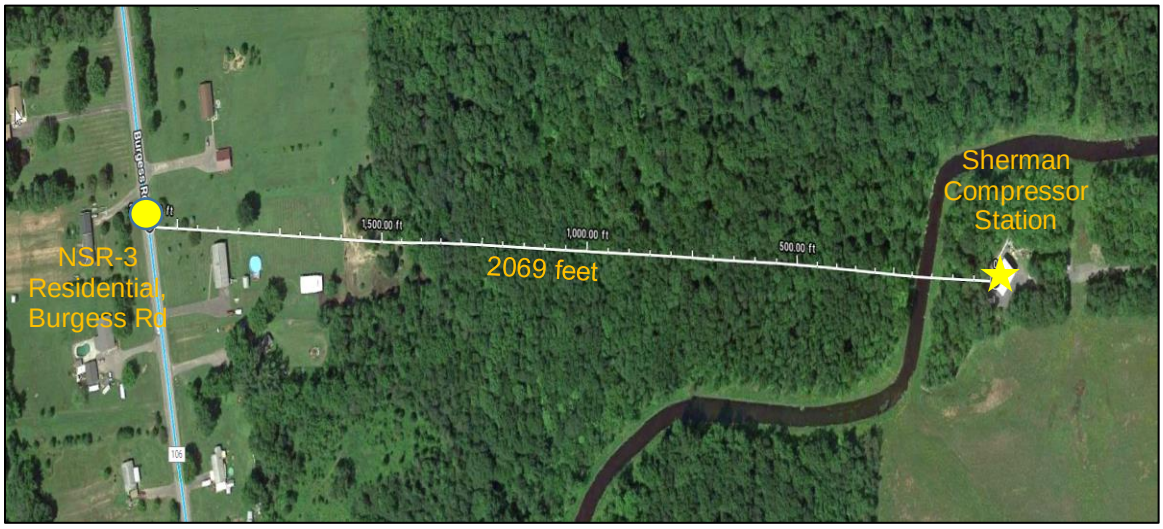

Figure 7
Map of Compressor Station to NSR-3

Additional measurement points were collected 15 feet from the Station on the east and west sides (Figure 8) and one approximately 800 down the driveway east of the station towards Mound Road (1/2 the distance between the station and NSR-1 test location).

All 6 test locations were at similar elevations of 484-488ft.

During all tests, the garage doors remained closed, as they are during normal operation.

Figure 8
Test Point locations East and West of the Sherman Compressor Station

Overall Sound Pressure Levels (rms dBA)

A-weighted overall sound pressure levels (SPLs) and 1/3 octave band spectrums were collected on four occasions at each test location. Each test was averaged using 25 samples per collection. Test times and dates considered compressor operation, outside air temperature, wind speed, humidity and time of day or night. Daytime measurements were collected on March 7th. Night-time measurements were collected on March 7th and March 20th.

- Noise measuring instruments were calibrated before and after data collection.
- Measurements were accepted when background noise during the test interval was minimal. Ambient distant road noise was always present at NSRs.
- Measurements were rejected when they included close road traffic, wind, animal and other noise sources.
- Noise east and west of the compressor building was broadband above 60 dB for 1/3 octave bands from 100 to 5000 Hertz.

Table 1 lists daytime and night-time, A-weighted SPLs[1] measured at the 6 test locations.

SPLs east and west outside of the station building & 800 ft. down the driveway·

- Daytime SPLs with both compressors operating were 70-79 dBA. The west side was higher. 800 ft. down the driveway was 52 dBA.
- Nighttime SPLs with both compressors operating were 73-84 dBA. The west side was higher. 800 ft. down the driveway was 50 dBA.
- Nighttime SPLs with one compressor operating were 68-80 dBA. The west side was higher. 800 ft. down the driveway was 48 dBA.
- Nighttime SPLs with both compressors off and no other equipment operating in the building were 47 dBA east and west. 800 ft. down the driveway was 49 dBA.

SPLs at significant sound receptors NSRs 1-3

Compressor station noise was not audible day or night from any of the three NSR test locations.

- Daytime SPLs at NSRs with both compressors operating were 51-66 dBA.
- Night-time SPLs at NSRs with both compressors operating were 48-50 dBA or less based on location.
- Nighttime SPLs with one compressor operating were 48-50 dBA.
- Nighttime SPLs with both compressors shut off were 48 dBA.

Daytime and nighttime noise levels at NSR locations do not exceed the Seneca Falls ordinance for industrially zoned property.

[1] *SPLs are rounded to whole numbers*

Table 1
SPLs at Test Locations (dBA

Test Date	Test time and conditions	Compressor Operating Conditions	Test Location	Sound Level (dBA, A-weighted)
March 7	Daytime 09:30 - 10:30 36˚ F 75% Humidity Wind 6-8 mph SSE	Both Compressors Running	East side of Station	69.6
			West Side of Station	79.0
			½ way down driveway 800 ft. E of	52.3
			NSR-1 (1560 ft. E)	65.5
			NSR-2 (1515 ft N)	49.1
			NSR-3 (2069 ft W)	51.0
	Night time 22:15 - 22:31 33˚ F 94% Humidity Wind 4 mph SSW	Both Compressors Running	East side of Station	73.5
			West Side of Station	83.4
			½ way down driveway 800 ft. E of	49.9
			NSR-1 (1560 ft. E)	50.2
			NSR-2 (1515 ft N)	49.7
			NSR-3 (2069 ft W)	48.3
March 20	Night time 22:08 – 22:28 22˚ F 58% Humidity No Wind	One Compressor Running	East side of Station	68.3
			West Side of Station	80.2
			½ way down driveway 800 ft. E of	48.1
			NSR-1 (1560 ft. E)	49.6
			NSR-2 (1515 ft N)	47.8
			NSR-3 (2069 ft W)	49.0
	Night time 22:36 – 22:50 22˚ F 58% Humidity No Wind	Both Compressors Off	East side of Station	46.8
			West Side of Station	47.4
			½ way down driveway 800 ft. E of	49.4
			NSR-1 (1560 ft. E)	47.7
			NSR-2 (1515 ft N)	47.9
			NSR-3 (2069 ft W)	48.4

Conclusions

1. Noise from the compressors station was not audibly detectable by 4X Diagnostics personnel at NSRs test locations.
2. A comparison of nighttime noise levels measured at the three NSRs with both existing compressors operating vs. one or both compressors shut off showed,
    - Noise decreased 2 dBA or less when one compressor was turned off. The reduction was likely due to changes in ambient conditions.
    - No additional reduction was gained when both compressors were turned off.
3. **Seneca Falls Noise Ordinance**

    The compressor site is zoned M2 refuse disposal. The Seneca Falls noise ordinance does not mention a separate noise ordinance for M2 zoning. Assuming it is the same as industrial, the day/night noise levels at the three NSRs did not exceed the noise ordinance.
4. **Subtracting ambient noise from compressor noise**

    Nighttime noise levels outside the compressor building with both compressors on (83.4 dBA) and off (47.4 dBA) were subtracted. The difference is greater than 15 dBA therefore, ambient noise adds nothing to the source.
5. **Estimating noise from the new proposed 600 HP Compressor operating alone**

    There is insufficient information to calculate the estimate, however we can assume an SPL of 85 dBA. The noise from the 600 HP compressor operating alone is assumed to be slightly higher than an existing single compressor running at approximately 400 HP (80.2 dBA).
6. **Adding the existing compressor noise to the new compressor noise**

    The difference between noise levels measured outside the compressor building with both compressors operating (83.4 dBA) and the assumed noise from the proposed 600 HP compressor (85 dBA) is 1.6 dBA. For a noise difference of 1 dBA, the correction to be added to the higher noise value is 2.5 dBA, therefore, adding the existing noise to the new compressor noise changes the estimated noise level to 87.5 dBA.
7. **Estimating noise levels at NSRs with three compressors operating**

    Using an inverse square law approximation and considering no other factors for correction, treatment or transmission loss, the resultant sound level at NSRs is predicted to be,
    - 47.4 dBA at the property line of the nearest business (NSR-2), 1515 feet to the north.
    - 47.2 dBA at the property line of the nearest residence (NSR-1), 1560 feet to the east.
    - 44.7 dBA at the property line of NSR-3, 2069 feet to the west.

Thank you for your support and assistance during this job. Please call to discuss this report or request additional service.

4X Diagnostics,

AJ DeMatteo
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Additional data is on file at 4X Diagnostics